ZESCO

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT UPDATE

ZAMBIA

WSP REFERENCE: CA0027197.7329
NOVEMBER 1, 2024

VOLUME 2 – APPENDICES
FINAL VERSION



APPENDIX

1-1 DECISION LETTER FOR THE ZAMBIA-TANZANIA INTERCONNECTOR TRANSMISSION LINE PROJECT

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

Head Office
Corner of Church & Suez Roads
P.O Box 35131
Lusaka, Zambia
Tel: +260-211-254023/254059

All Correspondence to be addressed to
The Director General

info@zema.org.zm www.zema.org.zm

In reply please quote

No:

ZEMA/EIA/EIS/EAC17/924

March 19, 2024

The Managing Director
ZESCO Limited
Great East Road, Stand No.6949
P.O. Box 33304
LUSAKA

Dear Sir,

RE: DECISION LETTER IN RESPECT OF THE ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED CONSTRUCTION AND OPERATION OF ZAMBIA – TANZANIA INTERCONNECTOR TRANSMISSION LINE PROJECT BY ZESCO LIMITED

Reference is made to the above captioned Environmental Impact Statement ("EIS") submitted to the Zambia Environmental Management Agency ("ZEMA") on **October 25, 2023,** for consideration in accordance with the requirements of the Environmental Management Act No. 12 of 2011 as read together with the Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, Statutory Instrument No. 28 of 1997.

ZEMA has since reviewed the EIS and based on the information provided by yourselves and taking into account written and verbal comments from interested and affected parties as well as our site verification inspection findings; the said EIS has been **approved** with conditions.

You are advised to fully acquaint yourselves with the conditions herein and to ensure compliance thereof.

Yours faithfully,

Godfrey Mwiinga
Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

Cc. The Town Clerk – Kasama Municipal Council, **KASAMA**
The Council Secretary – Serenje Town Council, **SERENJE**
The Council Secretary – Mpika Town Council, **MPIKA**
The Council Secretary – Nakonde Town Council, **NAKONDE**
The Director – Forestry Department, **LUSAKA**
The Director General – Energy Regulation Board, **LUSAKA**
The Director of Legal Services, ZEMA, **LUSAKA**

Zambia Environmental Management Agency

DECISION LETTER

1.0 PROJECT BACKGROUND

1.1 PROJECT TITLE:

Proposed Construction and Operation of Zambia – Tanzania Interconnector Transmission Line Project by ZESCO Limited

1.2 PROJECT PROPONENT:

The Managing Director
ZESCO Limited
Great East Road, Stand No.6949
P.O. Box 33304
LUSAKA

Contact Person's Details:

Name: Mr. Victor B. Mapani
Designation: Managing Director
Tel: +260 211 361111
Email: vbmapani@zesco.co.zm

1.3 PROJECT LOCATION:

The transmission line will stretch between the Tanzanian border to Pensulo. It will go through Nakonde Mpika, Lavushimanda (Muchinga Province), Kasama, Kanchibiya, Mungwi (Northern Province) and Serenje (Central Province).

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
19 MAR 2024
DIRECTOR GENERAL'S OFFICE
P.O. BOX 50101, LUSAKA

Zambia Environmental Management Agency
DECISION LETTER

Coordinates:

Major Points	Latitudes	Longitudes
Starting Point (Pensulo Substation)	13° 2'0.18"S	30°26'26.41"E
Mpika Substation	11°52'21.42"S	31°24'27.12"E
Kasama Substation	10°13'41.94"S	31° 9'31.28"E
Termination Point (Nakonde Substation)	9°22'27.5"S	32°36'12.4"E

1.4 DATE OF SUBMISSION BY PROPONENT:

October 25, 2023

1.5 DATE OF CONSIDERATION BY THE AGENCY:

March 15, 2024

2.0 TOTAL INVESTMENT COST/INVESTMENT: USD 161,436,000

3.0 DETAILS OF THE PROJECT:

The Zambia-Tanzania Interconnection Project (ZTIP) Project involves the construction and operation of a single-circuit 330-kV electricity transmission line mounted on steel lattice pylons linking the Nakonde substation with substations in Kasama, Mpika, and Pensulo. The ZTIP Project is planned to add to another ongoing transmission project promoted by the Industrial and Commercial Bank of China (ICBC), which will link the Nakonde and Kasama substations. The 330-kV line from the Tanzanian border to Nakonde and the 330/66-kV substation at Nakonde components of the ICBC Project are considered associated facilities of the present World Bank-funded ZTIP Project.

The Project involves construction and operation of:

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- A transmission line from Nakonde – Kasama – Mpika – Pensulo: one 330-kV circuit of alternating current, mounted on one row of single-circuit pylons over 596 km, with a 50 m ROW.
- additional equipment (including three 330-kV feeder bays and one 30 MVAR line reactor) into the planned 400/330/66-kV substation in the Nakonde area (construction of the substation is included in the Kasama-Nakonde 330-kV transmission Project built with the ICBC);
- additional equipment (including two 330-kV feeder bays and two-line reactors) into the existing 330/66-kV substation in Kasama (substation already existing, with sufficient space to accommodate additional equipment);
- additional equipment (including two 330-kV feeder bays and two-line reactors) into the planned 330/66-132-kV substation in Mpika (substation already existing, with sufficient space to accommodate additional equipment);
- 10,500 m2 extension of existing 330/66-kV substation in Pensulo for additional equipment (including two 330-kV feeder bays and two-line reactors and space for a 330-kV bay);
- access and maintenance roads along wayleave, where necessary.
- Tower heights will range from 31.1 m to 37 m. The width of the wayleave is 50 m over the entire length of the Project area. However, portions of the Project that parallel existing transmission lines will require less new ROW (i.e., 35 m width of new ROW between Pensulo and Kasama, and 10 m width of new ROW between Kasama and Nakonde) because the ROW will be shared between projects.

4.0 DECISION BY THE AGENCY

4.1 The project is **approved** subject to the following conditions:

4.1.1 ZESCO Limited shall **notify** the Zambia Environmental Management Agency (ZEMA) before the commencement of the project activities.

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P.O. BOX 35131, LUSAKA

Zambia Environmental Management Agency
DECISION LETTER

4.1.2 ZESCO Limited shall implement the project and all environmental management commitments as stated in the Environmental Impact Statement (EIS) with changes as made by Zambia Environmental Management Agency (ZEMA) and any other conditions that may be issued thereafter.

4.1.3 The approval is for construction and Operation of Zambia – Tanzania Interconnector Transmission Line Project by ZESCO Limited only. Therefore, ZESCO Limited shall not conduct or carry out activities that are not part of the approved project and can impact negatively on the environment.

4.1.4 ZESCO Limited shall consult and comply in full with the specifications and requirements of the Kasama Municipal Council, Serenje Town Council, Nakonde Town Council, Energy Regulation Board, Forestry Department, Road Development Agency, Resettlement Department and any other relevant authorities **prior** to the commencement of the project.

4.1.5 ZESCO Limited shall consult with the Resettlement Department prior project implementation.

4.1.6 The project and ancillary activities shall be conducted in such a way that public and private property, the health of people and sources of livelihood shall not be endangered, harmed, affected negatively, damaged or lost. Where it is determined that the health of people, property or source of livelihood is endangered, harmed, damaged, affected negatively, or lost as a result of project activities, ZESCO Limited shall be liable for payment or settlement of appropriate compensation and/or other forms of relief or replacement.

4.1.7 ZESCO Limited shall ensure that all individuals affected by the project, including those whose structures or means of livelihood will be affected, are fully compensated prior to construction of the 330kv transmission line. This includes compensation for structures, fruit trees, and any other affected assets;

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Zambia Environmental Management Agency

DECISION LETTER

4.1.8 ZESCO Limited shall implement measures to minimize environmental impacts during construction and operation, such as erosion control, re-vegetation of cleared areas, and proper waste management;

4.1.9 ZESCO Limited shall establish a grievance mechanism with affected communities to ensure that grievances are addressed in a transparent and timely manner;

4.1.10 ZESCO Limited shall implement the Resettlement Action Plan (RAP) prepared for the project, ensuring that affected households are resettled or compensated according to agreed-upon terms and timelines;

4.1.11 ZESCO Limited shall develop and implement an emergency response plan to address any unforeseen environmental or social incidents during the construction and operation of the transmission line;

4.1.12 ZESCO Limited shall put in place safeguards in the compensation distribution process involving elderly or vulnerable beneficiaries.

4.1.13 ZESCO should strictly adhere to the Electrical Safety Code of Practice (ZS 418) during construction, commissioning and operation of the proposed electrical network.

4.1.14 ZESCO Limited shall ensure to install bird diverters on the transmission line to prevent bird collision.

4.1.15 ZESCO Limited shall collect, decontaminate and dispose of in an environmentally sound and appropriate manner all contaminated waste throughout the project life cycle.

4.1.16 Hazardous waste to be generated from the project shall be managed by persons authorized by ZEMA.

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
19 MAR 2024
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Zambia Environmental Management Agency
DECISION LETTER

4.1.17 ZESCO Limited shall install and operate effective and efficient facilities for preventing and controlling pollution of the underground regime and surface water resources throughout the project life cycle.

4.1.18 ZESCO Limited shall ensure that any major spillages and leakages of hydrocarbons shall be immediately reported to the Zambia Environmental Management Agency and Energy Regulation Board.

4.1.19 ZESCO Limited shall install and operate effective and efficient dust suppression techniques and/or air pollution abatement equipment in all areas with potential to generate air pollutants.

4.1.20 The levels of noise from project activities shall be monitored frequently; appropriate measures shall be put in place where noise levels approach harmful state.

4.1.21 ZESCO Limited shall prepare and implement an appropriate and effective emergency preparedness and response plan.

4.1.22 ZESCO Limited shall put in place necessary and sufficient measures, procedures or equipment to mitigate the effects that might arise from such emergencies as fire outbreak and occupational injuries during construction and operation of the project.

4.1.23 ZESCO Limited shall ensure that disposal of hazardous waste generated from the project site during construction and operation stage is in line with the provisions of the Environmental Management Act No. 12 of 2011.

4.1.24 ZESCO Limited shall obtain applicable licenses or permits from ZEMA and comply in full with the conditions of the licenses or permits issued under the Environmental Management (Licensing) Regulations, Statutory Instrument No. 112 of 2013 and the Environmental Management (Extended Producer Responsibility) Regulation Statutory Instrument No.65 of 2018.

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P.O. BOX 35131, LUSAKA

4.1.25 ZESCO Limited shall undertake an environmental audit of the project within a period of not less than twelve months and not more than **thirty-six months** after completion of the project or commencement of operations, whichever comes first.

4.1.26 ZESCO Limited shall prepare and submit a decommissioning and closure report outlining implementation of all the environmental management commitments presented in the Environmental Impact Statement (EIS) at the end of the project for consideration by ZEMA.

4.2 ZESCO Limited **shall**:

4.2.1 As appropriate obtain and comply in full with other relevant authorizations such as those stipulated in the following Acts of parliament:

i. The Energy Regulation Act No. 12 of 2019;
ii. The Electricity Act No. 11 of 2019;
iii. The Urban and Regional Planning Act, No. 3 of 2015;
iv. The Local Government Act No. 2 of 2019;
v. The Water Resources Management Act, No. 21 of 2011;
vi. The Public Health Act, Cap 295 of the Laws of Zambia;
vii. The Workers' Compensation Act No. 10 of 1999;
viii. The National Council for Construction Act No. 10 of 2020;
ix. The Metrology Act No. 6 of 2017;
x. The Standards Act No. 4 of 2017;
xi. The Occupational Health and Safety Act No. 36 of 2010;
xii. The Employment Code Act No. 3 of 2019; and
xiii. The Solid Waste Regulations and Management Act No. 20 of 2018.

4.2.2 Make available information on hygiene, malaria, HIV/AIDS and other communicable and infectious diseases to employees.

4.2.3 Put in place environmental, occupational health and safety policies and procedures.

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
19 MAR 2024
DIRECTOR GENERAL'S OFFICE
P.O. BOX 50151, LUSAKA

Zambia Environmental Management Agency
DECISION LETTER

4.2.4 Provide workers with appropriate fire-fighting equipment and train workers in fire-fighting and emergency response.

4.2.5 Provide employees with Personal Protective Equipment (PPE) and employees shall undergo appropriate medical check-ups.

4.3 ZESCO Limited shall comply with environmental standards and/or specific limits of particular pollutants as its responsibility. Thus, compliance with Zambia Environmental Management Agency recommended measures **does not absolve** ZESCO Limited its responsibility if such measures do not achieve compliance with environmental control standards.

4.4 ZESCO Limited shall in accordance with section 15 of the Environmental Management Act No. 12 of 2011, allow inspectors from ZEMA **unrestricted entry** to the project site at any reasonable time with or without making prior notice throughout the project life cycle.

4.5 The implementation of the project shall commence **within three years** from the date of approval. Failure to commence implementation of the project within the stated period shall render the Decision Letter invalid and ZESCO Limited shall be required to re-submit the EIS for consideration.

4.6 The Agency may suspend or cancel the Decision Letter **without notice** should ZESCO Limited fail to comply with any condition of approval.

4.7 This Decision Letter may be amended on the volition of the Agency or otherwise should a situation arise that requires that an amendment be effected.

19 MAR 2024
Date

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Godfrey Mwiinga
Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

APPENDIX

1-2 DECISION LETTER FOR THE KASAMA-NAKONDE 330/132KV TRANSMISSION LINE PROJECT

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

Head Office
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P.O. Box 35131
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Tel: +260- 211-254130/254023/254059
Fax:+260-211-254164/256658

Northern Regional Office
Jacaranda Road
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Ndola, Zambia
Tel: +260-212-621048/610407
Fax: +260-212-610246

Livingstone Office
Plot No. 555
Junction Obote / Neru Roads
P.O. Box 60195
Livingstone, Zambia
Tel / Fax:+260-213-321297

Chirundu Border Office
Lusaka Road
P.O. Box CRU31
Chirundu, Zambia
Tel/Fax: +260-211-515261

In reply please quote

No:

ZEMA/EIA/EIS/540

August 1, 2017

The Managing Director
ZESCO Limited
Great East Road, Stand No.6949
LUSAKA.

Dear Sir,

RE: ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED CONSTRUCTION OF KASAMA – NAKONDE 330/132KV TRANSMISSION LINE PROJECT BY ZESCO LIMITED.

Reference is made to the above captioned Environmental Impact Statement ("EIS") submitted to the Zambia Environmental Management Agency ("ZEMA") on **June 1, 2017** for consideration in accordance with the requirements of the Environmental Management Act No. 12 of 2011 as read together with the Environmental Impact Assessment Regulations, Statutory Instrument No. 28 of 1997.

ZEMA has since reviewed the EIS and based on the information provided by yourselves and from written and verbal comments received from interested and affected parties and our site verification inspection findings; the said EIS has been **approved.**

Find attached to this Decision Letter, conditions governing the **approval.**

Yours faithfully,

John Msimuko
Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

Cc. Town Clerk – Kasama Municipal Council, **KASAMA.**
Town Clerk- Mbala Municipal Council, **MBALA.**
Council Secretary-Mporokoso Town Council, **MPOROKOSO.**
Council Secretary-Nakonde Town Council, **NAKONDE.**
Council Secretary-Mungwi Town Council, **MUNGWI.**
Chief Executive Officer- Energy Regulations Board, **LUSAKA.**
Director- Forestry Department, **LUSAKA.**

Zambia Environmental Management Agency
DECISION LETTER

1.0 PROJECT BACKGROUND

1.1 PROJECT TITLE:

Proposed Construction of Kasama – Nakonde 330/132KV Transmission Line project by ZESCO Limited.

1.2 PROJECT PROPONENT:

ZESCO Limited
Great East Road, Stand No.6949
P.O. Box 33304
Lusaka

Contact Person's Details:

Name: Mr. Victor Mundende
Position: Managing Director
Cell: +260 211 362710

1.3 PROJECT LOCATION:

The proposed project is located in the Northern and Muchinga Provinces of Zambia. Specifically, the project traverses five districts namely Nakonde, Mungwi, Kasama, Mpulungu and Mporokoso. The Chiefdoms affected by the project include Chitimukulu (sub chiefs Nseluka and Chimba), Mumporokoso, Chinakila, Shibwalyakapila, Munkonge, Mwamba, Nkolemfumu, Makasa and Nawaitwika.

1.4 DATE OF SUBMISSION BY PROPONENT:

June 1, 2017

1.5 DATE OF CONSIDERATION BY THE AGENCY:

July 27, 2017

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
- 1 AUG 2017
DIRECTOR GENERAL'S OFFICE
P.O. BOX 50101, LUSAKA.

2.0 DETAILS OF THE PROJECT:

The project involves the construction of three strategic transmission lines that include the extension of the 330kV transmission line from Kasama to Nakonde District (**230km**), a 400kV line (**15km**) to the Tunduma Border and a **12km** 66kv to the existing Nakonde 66/33kv substation. Another 330kv line from Kasama to Mporokoso District (**180km**), with a 132KV (**11km**) extension to the existing 66/33KV Mporokoso Substation. The third line will be a 132kV transmission line from Kasama to Mungwi District (**170km**). In Mungwi District, the project will also have 33Kv distribution lines in Mungwi, Malole, Chimba, Makasa (Chandamali) and Kayambi areas. The proposed project area is located in Kasama, Nakonde, Mungwi and Mporokoso Districts.

The proposed project shall consist of the following scope of works:

1. 330/ 132 kV Transmission lines

- Construct 230km of 330kV overhead transmission line with single circuit conductor from Kasama – Nakonde. In addition, construction of 15km of 400kV line from the new Nakonde 400/330/66kV substation to the Tanzania border and a 12km double circuit 66kV line to link the new Nakonde 400/330/66kV with the existing 66kV Isoka-Nakonde line;
- Construct about 170km of 132kV single circuit overhead transmission line from Kasama to Kayambi - through Mungwi, Malole, Chimba and Makasa areas; and
- Construct about 180km of 330kV single circuit overhead transmission line from Kasama to Mporokoso and linking it to the existing 66/33kV Mporokoso substation with an 11km 132KV line.

2. Substations (9)

- Nakonde 400/330/66kv
- Kayambi 132/33/11kV
- Chandamali 123/33/11Kv
- Chimba 132/33/11kV
- Malole 132/33/11kV,
- Mungwi 132/33/11kV,
- Kasama 330/66Kv extension
- Chishimba 132kv

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
- 1 AUG 2017
DIRECTOR GENERAL'S OFFICE
P.O. Box 50101, LUSAKA

3.1.6 ZESCO Limited shall consult and comply in full with the specifications of the Energy Regulation Board Forestry Department, Water Resources Management Authority, National Heritage and Conservation Commission, Kasama Municipal Council, Mungwi District Council, Nakonde District Council and Mporokoso District Council prior to the implementation of the project.

3.1.7 ZESCO Limited shall ensure there is no acts of major contamination nor disturbances to the groundwater or surface water regimes located along the project site.

3.1.8 Should ZESCO Limited encounter or exhume artefacts that of any heritage nature, they shall fully consult with the National Heritage Conservation Commission for appropriate management or disposal of them.

3.1.9 ZESCO Limited ensure that all its suppliers of construction aggregate, sand and any material whose extraction is likely to result in environmental damage are guided on the scope of the project and the potential environmental impacts.

3.1.10 Where ZESCO Limited employs or contract a firm or individual to do works that requires additional notifications to or approvals from the Agency, it shall be ZESCO' s responsibility to ensure that such is done with the ZEMA.

3.1.11 ZESCO Limited shall avoid indiscriminate clearing of vegetation. The vegetation clearing shall only be limited to areas where the line will be constructed and the temporal camp sites. In order to avert soil erosion, where possible, stumping as opposed to uprooting shall be used to clear vegetation in temporal camp sites.

3.1.12 ZESCO Limited shall engage the forestry Department to identify an appropriate area where to carry out tree planting and revegetation as a way of offsetting the cleared vegetation in the affected forests.

3.1.13 The use of banned chemicals shall not be allowed throughout the project cycle. All the chemicals that will be used in the project cycle shall be purchased from the Zambia Environmental Management Agency licensed facilities.

3.1.14 ZESCO shall ensure that they store used oil in well banded areas with clearly labeled and colour coded containers.

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- 1 AUG 2017
DIRECTOR GENERAL'S OFFICE
P.O. BOX 34121, LUSAKA

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
- 1 AUG 2017
DIRECTOR GENERAL'S OFFICE
P.O. BOX 34121, LUSAKA

3.1.15 The personnel involved in the management of used oil ensure that they seal the containers when they are not more than three-quarters full

3.1.16 In the event that general and hazardous waste are accidentally mixed, on site, ZESCO shall ensure that they notify the Agency and treat the mixture as hazardous waste. Hazardous and municipal solid waste shall be kept separate throughout the project cycle.

3.1.17 ZESCO Limited shall consistently suppress dust in areas with potential to generate dust during the construction phase and throughout the project cycle.

3.1.18 ZESCO Limited shall ensure that noise levels are maintained to acceptable limits during construction phase and throughout the project cycle.

3.1.19 ZESCO Limited shall only use PCB free capacitors and transformers throughout the project cycle.

3.1.20 ZESCO Limited shall erect in English and local languages, signage around the project areas and shall use other means necessary to warn **any** nearby community and the general public on the general risks surrounding the project throughout the project cycle.

3.1.21 ZESCO Limited shall prepare and Environmental Response Plan (ERP) and the ERP to include measures to be taken in the event that an emergency occurs.

3.1.22 ZESCO Limited shall ensure that all incidences with potential to pollute the environment and harm humans are reported to ZEMA and Energy Regulation Board, respectively **immediately.**

3.1.23 Environmentally sound practices shall be put in place to manage the waste. The waste shall not be buried at the project site but shall be disposed of at the Local Authority designated waste disposal sites.

3.1.24 Firefighting equipment shall be placed where it can be easily accessed and it shall always be kept in good working condition. Reflective material shall be used to facilitate visibility at night.

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ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY - 1 AUG 2017 DIRECTOR GENERAL'S OFFICE

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY - 1 AUG 2017 DIRECTOR GENERAL'S OFFICE

3.1.25 ZESCO Limited shall undertake an environmental audit of the project within a period of not less than **twelve months** and not more than **thirty six months** after completion of the project or commencement of operations, whichever shall come first.

3.1.26 ZESCO Limited shall obtain applicable licenses or permits from ZEMA and comply in full with the conditions of the licenses or permits issued under the Environmental Management (Licensing) Regulations, Statutory Instrument No.112 of 2013.

3.2 The Agency **advises** ZESCO Limited to:

3.2.1 Obtain any other relevant authorizations such as those stipulated in the following Acts of Parliament:

a) The National Heritage and Conservation Commission Act;
b) The Forestry Act,
c) The Labour Act;
d) The Worker's Compensation Act,
e) The Lands Act;
f) The Land Acquisition Act;
g) The Water Resources Management Act;
h) The Mines and Minerals Act;
i) The Town and Country Planning Act;
j) The Public Health Act;
k) The Local Government Act;
l) The Petroleum Act;
m) The Electricity Act; and,
n) The Energy Regulation Act.

3.2.2 Make available information on hygiene, malaria control and HIV/AIDS to employees.

3.2.3 Provide all workers with appropriate firefighting equipment and train all workers in firefighting and emergency response.

3.2.4 Provide all workers with personal protective equipment and all workers shall undergo **annual** medical checkups.

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ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
- 1 AUG 2017
DIRECTOR GENERALS OFFICE

3.3 ZESCO Limited shall comply with environmental standards and/or specific limits of particular pollutants as its responsibility. Thus, compliance with Zambia Environmental Management Agency recommended measures **does not** absolve ZESCO Limited from its responsibility if such measures do not achieve compliance with environmental control standards.

3.4 ZESCO Limited shall in accordance with Section 15 of the Environmental Management Act, 2011 allow ZEMA inspectors **unrestricted entry** into the project site at any reasonable time with or without making prior notice throughout the project cycle.

3.5 The implementation of the project shall commence within **three years** from the date of approval. Failure to commence the project within the stated period shall render this decision letter invalid and ZESCO Limited shall be required to re-submit the EIS for consideration.

3.6 The Zambia Environmental Management Agency may suspend or cancel this Decision Letter **without notice** should ZESCO Limited fail to comply with any of these conditions.

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
- 1 AUG 2017
DIRECTOR GENERAL'S OFFICE

- 1 AUG 2017
Date

John Msimuko
Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

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APPENDIX

1-3 EXTENDED DECISION LETTER FOR THE KASAMA-NAKONDE 330/132KV TRANSMISSION LINE PROJECT

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

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Corner of Church & Suez Roads
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Lusaka, Zambia
Tel: +260-211-254023/254059

All Correspondence to be addressed to The Director General

info@zema.org.zm www.zema.org.zm

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In reply please quote

No: **ZEMA/INS/101/04/1**

DPP DTOJ HREP HDM

MANAGING DIRECTOR ZESCO LIMITED 10 AUG 2023 RECEIVED

August 8, 2023

The Managing Director
ZESCO Limited
Stand No. 6949 Great East Road
LUSAKA

Dear Sir,

RE: INTENSION TO PROCEED WITH IMPLEMENTATION OF THE KASAMA - NAKONDE TRANSMISSION PROJECT BY ZESCO LIMITED

Reference is made to the letter received from the Energy Regulation Board on 6th July, 2023 with respect to your request to re-register the Kasama -Nakonde transmission line project and consequently extend the validity of the decision letter for the said project.

ZEMA has since reviewed the submitted document in line with the provisions of the Environmental Management Act No. 12 of 2011 as read together with the Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, Statutory Instrument No. 28 of 1997.

Based on the information provided by the authorizing Agency, ZEMA has granted ZESCO Limited a **No Objection** to the extension of the validity of the Decision Letters and subsequently the implementation of the project on condition that you abide by the conditions of the Decision Letter No. ZEMA/EIA/EIS/540 dated 1st August, 2017.

Should there be any issues herein that you may wish to clarify or have clarified, please contact the undersigned.

Yours faithfully,

Maxwell Nkoya
Acting Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

Cc The Director General – Energy Regulation Board, **LUSAKA**
The Director - Legal Services- ZEMA, **LUSAKA**

APPENDIX

2-1 *EHS GUIDELINES FOR ELECTRIC POWER TRANSMISSION AND DISTRIBUTION - IMPACTS AND MITIGATION MEASURES*

Component	Impact	Source of Impacts	Details	Proposed Mitigation Measures
	Terrestrial Habitat Alterations	Construction of right-of way	Fragmentation of forested habitats; Loss of wildlife habitats, including for nesting; Establishment of non-native invasive plant species; Visual and auditory disturbance due to the presence of machinery, construction workers, transmission towers ans associated equipment.	Site transmission and distribution rights-of-way, access roads, lines, towers, and substations to avoid critical habitat through use of existing utility and transport corridors for transmission and distribution, and existing roads and tracks for access roads, whenever possible;
				Installation of transmission lines above existing vegetation to avoid land clearing;
				Avoidance of construction activities during the breeding season and other sensitive seasons or times of day;
				Revegetation of disturbed areas with native plant species;
				Removal of invasive plant species during routine vegetation maintenance (see right-of-way maintenance section below)
			General guidance	Implementation of an integrated vegetation management approach (IVM). The selective removal of tall-growing tree species and the encouragement of low-growing grasses and shrubs is the common approach to vegetation management in transmission line rights-of-way. Alternative vegetation management techniques should be selected based on environmental and site considerations including potential impacts to non-target, endangered and threatened species;
				Removal of invasive plant species, whenever possible, cultivating native plant species;
				Schedule activities to avoid breeding and nesting seasons for any critically endangered or endangered wildlife species;
				Observe manufacturer machinery and equipment guidelines, procedures with regard to noise, and oil spill prevention and emergency response;
				Avoid clearing in riparian areas;
				Avoid use of machinery in the vicinity of watercourses.
			Pesticide application, if warranted	Manage to avoid migration into off-site land or water environments
				Train personnel to apply pesticides and ensure that personnel have received applicable certifications or equivalent training where such certifications are not required;
				Review the manufacturer's directions on maximum recommended dosage or treatment, as well as published reports on using the reduced rate of pesticide application without loss of effect, and apply the minimum effective dose;
				Apply pesticides based on criteria (e.g. field observations, weather data, time of treatment, and dosage) and maintain a pesticide logbook to record such information;
				Avoid the use of pesticides that fall under the World Health Organization Recommended Classification of Pesticides by Hazard Classes 1a and 1b;
				Avoid the use of pesticides that fall under the World Health Organization Recommended Classification of Pesticides by Hazard Class II if the project host country lacks restrictions on distribution and use of these chemicals, or if they are likely to be accessible to personnel without proper training, equipment, and facilities to handle, store, apply, and dispose of these products properly;
				· Avoid the use of pesticides listed in Annexes A and B of the Stockholm Convention, except under the conditions noted in the convention;
		Right-of-way Maintenance		Use only pesticides that are manufactured under license and registered and approved by the appropriate authority and in accordance with the Food and Agriculture Organization's (FAO) International Code of Conduct on the Distribution and Use of Pesticides;
				Use only pesticides that are labeled in accordance with international standards and norms, such as the FAO Revised Guidelines for Good Labeling Practice for Pesticides;
				Select application technologies and practices designed to reduce unintentional drift or runoff only as indicated in an IPM program, and under controlled conditions;
				Maintain and calibrate pesticide application equipment in accordance with manufacturer's recommendations;
				Establish untreated buffer zones or strips along water sources, rivers, streams, ponds, lakes, and ditches to help protect water resources.

Component	Impact	Source of Impacts	Details	Proposed Mitigation Measures
				Store pesticides in their original packaging, in a dedicated, dry, cool, frost-free, and well aerated location that can be locked and properly identified with signs, with access limited to authorized people. No human or animal food may be stored in this location. The store room should also be designed with spill containment measures and sited in consideration of potential for contamination of soil and water resources;
				Mixing and transfer of pesticides should be undertaken by trained personnel in ventilated and well lit areas, using containers designed and dedicated for this purpose.
				Containers should not be used for any other purpose (e.g. drinking water). Contaminated containers should be handled as hazardous waste, and should be treated accordingly. Disposal of containers contaminated with pesticides should be done in a manner consistent with FAO guidelines and with manufacturer's directions;
			Pesticide handling and storage, if warranted	Purchase and store no more pesticide than needed and rotate stock using a “first-in, first-out” principle so that pesticides do not become obsolete. Additionally, the use of obsolete pesticides should be avoided under all circumstances; A management plan that includes measures for the containment, storage and ultimate destruction of all obsolete stocks should be prepared in accordance to guidelines by FAO and consistent with country commitments under the Stockholm, Rotterdam and Basel Conventions.
				Collect rinse water from equipment cleaning for reuse (such as for the dilution of identical pesticides to concentrations used for application);
				Ensure that protective clothing worn during pesticide application is either cleaned or disposed of in an environmentally responsible manner;
				Implement groundwater supply wellhead setbacks for pesticide application and storage
				Maintain records of pesticide use and effectiveness.
		Forest Fires	Promotion of forest fires if underlying growth is left unchecked, or slash from routine maintenance is left to accumulate within right-of-way	Monitor right-of-way vegetation according to fire risk;
				Remove blowdown and other high-hazard fuel accumulations;
				Time thinning, slashing, and other maintenance activities to avoid forest fire seasons;
				Dispose of maintenance slash by truck or controlled burning;
				Controlled burning should adhere to applicable burning regulations, fire suppression equipment requirements, and typically must be monitored by a fire watcher;
				Plant and manage fire resistant species (e.g. hardwoods) within, and adjacent to, rights-of-way;
				Establish a network of fuel breaks of less flammable materials or cleared land to slow progress of fires and allow fire fighting access.
		Avian and Bat Collisions and Electrocutions	Potentially fatal risk to birds and bats through collisions and electrocutions. Avian collisions with power lines can occur in large numbers if located within daily flyways or migration corridors, or if groups are traveling at night or during low light conditions (e.g. dense fog).	Align transmission corridors to avoid critical habitats (e.g. nesting grounds, heronries, rookeries, bat foraging corridors, and migration corridors);
				Maintain 1.5 meter (60-inch) spacing between energized components and grounded hardware or, where spacing is not feasible, cover energized parts and hardware;
				Retrofit existing transmission or distribution systems by installing elevated perches, insulating jumper loops, placing obstructive perch deterrents (e.g. insulated ”V’s”), changing the location of conductors, and / or using raptor hoods;
				Consider the installation of underground transmission and distribution lines in sensitive areas (e.g. critical natural habitats);
				Install visibility enhancement objects such as marker balls, bird deterrents, or diverters.
		Aquatic Habitat Alteration	Power transmission and distribution lines, and associated access roads and facilities, may require construction of corridors crossing aquatic habitats that may disrupt watercourses and wetlands, and require the removal of riparian vegetation. In addition, sediment and erosion from construction activities and storm water runoff may increase turbidity of surface watercourses	Site power transmission towers and substations to avoid critical aquatic habitat (e.g. watercourses, wetlands, and riparian areas), as well as fish spawning habitat, and critical fish over-wintering habitat;
				Maintain fish access when road crossings of watercourses are unavoidable by utilizing clearspan bridges, open-bottom culverts, or other approved methods;
				Minimize clearing and disruption to riparian vegetation;

Component	Impact	Source of Impacts	Details	Proposed Mitigation Measures
				Manage construction site activities as described in the relevant sections of the General EHS Guidelines.
	Electric and Magnetic Fields	Electric fields result from the flow of electric current and increase in strength as the current increases. They are shielded by materials that conduct electricity, and other materials, such as trees and building. Although there is public and scientific concern over the potential health effects associated with exposure to EMF (not only high voltage power lines and substations, but also from everyday household uses of electricity), there is no empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment. However, while the evidence of adverse health risks is weak, it is still sufficient to warrant limited concern.		Evaluate potential exposure to the public against the reference levels developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Average and peak exposure levels should remain below the ICNIRP recommendation for General Public Exposure;
				Consider siting new facilities so as to avoid or minimize exposure to the public. Installation of transmission lines or other high voltage equipment above or adjacent to residential properties or other locations intended for highly frequent human occupancy, (e.g. schools or offices), should be avoided;
				If EMF levels are confirmed or expected to be above the recommended exposure limits, application of engineering techniques should be considered to reduce the EMF produced by power lines, substations, or transformers. Examples of these techniques include: - Shielding with specific metal alloys; - Burying transmission lines; - Increasing height of transmission towers; - Modifications to size, spacing, and configuration of conductors.
Environment	Hazardous Materials	Insulating oils and fuels	Highly-refined, mineral insulating oils are used to cool transformers and provide electrical insulation between live components. They are typically found in the largest quantities at electrical substations and maintenance shops. Sulfur Hexafluoride (SF6) may also be used as a gas insulator for electrical switching equipment and in cables, tubular transmission lines, and transformers.	SF6 may be used as an alternative to insulating oils. However, the use of SF6, a greenhouse gas with a significantly higher global warming potential (GWP) than CO2, should be minimized. In cases the gas is used for applications involving high voltages (>350 KV), equipment with a low leakage- rate (<99 percent) should be used.
			Polychlorinated Biphenyls (PCB) were widely used as a dielectric fluid to provide electrical insulation, although their use has been largely discontinued due to potential harmful effects on human health and the environment.	Replace existing transformers and other electrical equipment containing PCB, and ensuring appropriate storage, decontamination, and disposal of contaminated units;
				Prior to final disposal, retired transformers and equipment containing PCB should be stored on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area should also have a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB;
				Surrounding soil exposed to PCB leakage from equipment should be assessed, and appropriate removal and / or remediation measures should be implemented, as addressed in the section on contaminated soil in the General EHS Guidelines.
		Liquid petroleum fuels	Liquid petroleum fuels for vehicles and other equipment may also be used and stored at transmission and distribution projects.	Recommendations for prevention and control of hazards associated with spill prevention, emergency response, clean-up, and contaminated soil remediation are addressed in the General EHS Guidelines
Occupational Health & Safety	Live Power Lines	Contact with live power lines during construction, maintenance, and operation activities		Only allow trained and certified workers to install, maintain, or repair electrical equipment;
				Deactivate and properly ground live power distribution lines before work is performed on, or in close proximity, to the lines;
				Ensure that live-wire work is conducted by trained workers with strict adherence to specific safety and insulation standards. Qualified or trained employees working on transmission or distribution systems should be able to achieve the following: - Distinguish live parts from other parts of the electrical system; - Determine the voltage of live parts; - Understand the minimum approach distances outlined for specific live line voltages; - Ensure proper use of special safety equipment and procedures when working near or on exposed energized parts of an electrical system
				Workers should not approach an exposed energized or conductive part even if properly trained unless: - The worker is properly insulated from the energized part with gloves or other approved insulation; or, - The energized part is properly insulated from the worker and any other conductive object; or, - The worker is properly isolated and insulated from any other conductive object (live-line work).

Component	Impact	Source of Impacts	Details	Proposed Mitigation Measures
				Where maintenance and operation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan. (Table 2 in Section 2.2 provides recommended minimum safety setbacks for workers);
				Workers not directly associated with power transmission and distribution activities who are operating around power lines or power substations should adhere to local legislation, standards, and guidelines relating to minimum approach distances for excavations, tools, vehicles, pruning, and other activities;
				Minimum hot stick distances may only be reduced provided that the distance remaining is greater than the distance between the energized part and a grounded surface.
	Working at Heights	Occupational hazards when working at elevation during construction, maintenance, and operation activities		Test structures for integrity prior to undertaking work;
				Implement a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others;
				Establish criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface, but sometimes extended to 7 meters, depending on the activity). The fall protection system should be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point;
				Installation of fixtures on tower components to facilitate the use of fall protection systems;
				Provision of an adequate work-positioning device system for workers. Connectors on positioning systems should be compatible with the tower components to which they are attached;
				Hoisting equipment should be properly rated and maintained and hoist operators properly trained;
				Safety belts should be of not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibers become evident;
				When operating power tools at height, workers should use a second (backup) safety strap;
				Signs and other obstructions should be removed from poles or structures prior to undertaking work;
				An approved tool bag should be used for raising or lowering tools or materials to workers on structures.
	Electric and Magnetic Fields	Electric utility workers typically have a higher exposure to EMF than the general public due to working in proximity to electric power lines. Occupational EMF exposure should be prevented or minimized through the preparation and implementation of an EMF safety program		Identify potential exposure levels in the workplace, including surveys of exposure levels in new projects and the use of personal monitors during working activities;
				Train workers in the identification of occupational EMF levels and hazards;
				Establish and identify safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers;
				Implement action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and the Institute of Electrical and Electronics Engineers (IEEE). Personal exposure monitoring equipment should be set to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). Action plans to address occupational exposure may include limiting exposure time through work rotation, increasing the distance between the source and the worker, when feasible, or the use of shielding materials.
	Exposure to Chemicals	Handling of pesticides (herbicides) used for right–of-way maintenance	Potential exposures to pesticides include dermal contact and inhalation during their storage, preparation and application. The effect of such impacts may be increased by climatic conditions such as wind, which may increase the chance of unintended drift, or high temperatures, which may deter the use of personal protective equipment (PPE).	Train personnel to apply pesticides and ensure that personnel have received the necessary certifications, or equivalent training where such certifications are not required;
				Respect post-treatment intervals to avoid operator exposure during reentry to crops with residues of pesticides;
				Ensure hygiene practices are followed (in accordance to FAO and PMP) to avoid exposure of family members to pesticides residues.

Component	Impact	Source of Impacts	Details	Proposed Mitigation Measures
		Exposure to PCB in transformers and other electrical components	Maintenance shops and other facilities, and activities may involve potential contact with PCB or PCB-contaminated machinery.	Recommendations for chemical exposure, including PCB, are addressed in the General EHS Guidelines
Community Health & Safety	Electrocution	Electrocution from direct contact with high-voltage electricity or from contact with tools, vehicles, ladders, or other devices that are in contact with high-voltage electricity.		Use of signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas), and education / public outreach to prevent public contact with potentially dangerous equipment;
				Ground conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock.
	Electromagnetic interference	The corona of overhead transmission line conductors and highfrequency currents of overhead transmission lines may result in the creation of radio noise.		Create transmission line rights-of-way and conductor bundles are created to ensure radio reception at the outside limits remains normal. However, periods of rain, sleet or freezing rain sharply increases the streaming corona on conductors and may affect radio reception in residential areas near transmission lines
	Visual Amenity	Power transmission and distribution are necessary to transport energy from power facilities to residential communities, but may be visually intrusive and undesirable to local residents.		Conduct extensive public consultation during the planning of power line and power line right-of-way locations;
				Accurate assessment of changes in property values due to power line proximity;
				Site power lines and design substations with due consideration to landscape views and important environmental and community features;
				Locate high-voltage transmission and distribution lines in less populated areas, where possible;
				Bury transmission or distribution lines when power must be transported through dense residential or commercial areas.
	Noise and Ozone	Noise in the form of buzzing or humming can often be heard around transformers or high voltage power lines producing corona. Noise in the form of buzzing or humming can often be heard around transformers or high voltage power lines producing corona. Ozone, a colorless gas with a pungent odor, may also be produced. Neither the noise nor ozone produced by power distribution lines or transformers carries any known health risks.		Locate rights-of-way away from human receptors, to the extent possible;
				Consider use of noise barriers or noise canceling acoustic devices as necessary.
	Aircraft Navigation Safety	Power transmission towers, if located near an airport or known flight paths, can impact aircraft safety directly through collision or indirectly through radar interference.		Avoid siting transmission lines and towers close to airports and outside of known flight path envelopes;
				Consult with regulatory air traffic authorities prior to installation;
				Adhere to regional or national air traffic safety regulations;
				Use of buried lines when installation is required in flight sensitive areas.

APPENDIX

2-2 *INTERNATIONAL LABOUR ORGANIZATION COUNTRY PROFILE FOR ZAMBIA – EXECUTIVE SUMMARY*

EXECUTIVE SUMMARY

Zambia is a landlocked country in the southern part of Africa, it has a total surface area of about 752,000 sq km and it is divided into 10 provinces. The Capital City is Lusaka. The indigenous population constitutes about 73 different ethnic groups, and English is the official language. The major economic sectors in terms of percentage contribution to GDP by value addition are Industry (58 per cent), Agriculture (21 per cent) and Services (21 per cent)

Although, there is no express provision that has been made in the Constitution of Zambia for the safety and health of workers, Part 3 of the Constitution has laid a foundation by providing for the "Protection of the Fundamental Rights and Freedoms of the Individual", and addressing issues of public health and public safety in general terms. Key pieces of legislation that have been enacted to provide for the safety and health of the working populace include: the Factories Act – only applicable to workplaces defined as factories; the Mining Regulations – only applicable to the mining industry; the Occupational Health and Safety Act – applicable to all sectors of the economy; the Ionizing Radiation Act – provides for the protection of the public and workers from dangers arising from the use of devices or materials capable of producing ionizing radiation; the Workers' Compensation Act – provides for the establishment and administration of a Fund for the compensation of workers who are disabled by accidents, or diseases contracted by such workers, in the course of their employment.

Zambia became a member of the ILO immediately after gaining independence in 1964. To date Zambia has ratified 39 ILO Conventions including the core conventions. Apart from the Safety and Health in Mines Convention (1995), Zambia has not ratified the main conventions relating to Occupational Safety and Health.

Zambia does not have a national policy on Occupational Safety and Health. The National Employment and Labour Market Policy (NELMP) which was launched in 2005 is the closest there is to a National OSH Policy. Under item 7.5.3 of the NELMP, entitled "Occupational Health and Safety" it is stated that government's objective with regards to occupational safety and health is to improve the safety and health of all employees at workplaces.

The Occupational Health and Safety (OSH) Board is the main national body set up for purpose of coordinating and collaborating occupational safety and health issues in Zambia. This is a legal body whose formation is provided for under the Occupational Health and Safety Act, No. 36 of 2010. Besides government representatives, the OHS Board also includes representatives of the Federation of Employers and the Trade Unions. The Tripartite Consultative Labour Council, established under the Industrial and Labour Relations Act of 1993, generally serves as a forum for dialogue on broader social and economic development issues that affect the labour market, including occupational safety and health. Other means of dialogue on OSH issues include collective bargaining, dispute settlement processes and enterprise-based safety and health committees.

There is no National OSH Management Systems that have been developed or adopted by OSH authorities for use in workplaces in Zambia. However, lots of guidelines have been published by the OSH authorities on machinery safety, chemical safety, construction safety, fire safety, noise, dust, first-aid etc. At enterprise level some individual enterprises have been using the management systems of the National Occupational Safety Association (NOSA) of South Africa. More recently, some enterprises have started implementing the OHSAS 18000 series relating to Occupational Health and Safety Management Systems.

The main national competent bodies charged with the responsibility of promoting and enforcing OSH include: Occupational Safety and Health Services Department – Ministry of Labour and Social Security;

Mines Safety Department – Ministry of Mines, Energy and Water Development; Radiation Protection Authority – Ministry of Health; and Occupational Health and Safety Institute – Ministry of Health. The role of the first three institutions is regulatory in nature while that of the Occupational Health and Safety Institute is to provide comprehensive, specialized occupational health care. In addition to providing occupational health care, the Occupational Health and Safety Institute also provides laboratory services and serves as a research institution on OSH.

The Workers' Compensation Fund Control Board is the main public social security institution responsible for compensation of workers with regards to disablement caused by occupational accidents or diseases, or death arising from such accidents or diseases.

The University of Zambia's School of Mines periodically offers various short-term training courses in OSH. The Environmental Health degree programme offered under the University of Zambia's School of Medicine contains some modules on occupational safety and health.

The CIS Centre, housed under the Ministry of Labour and Social Security's Department of Occupational Safety and Health Services is responsible for training and the collection and dissemination of information. The Centre is currently operating far below its optimum capacity.

The key Non-Governmental Organisations dealing with OSH issues include Zambia Occupational Health and Safety Association (ZOHSA), Zambia Organisation for Occupational Health and Safety (ZOOHS) and Zambia National Association of Hearing Impaired (ZNAHI). ZOHSA and ZOOHS deal with OSH issues in general while ZNAHI specializes in assisting workplaces in developing hearing conservation programmes by addressing workplace noise.

The main institutions responsible for the collection and compilation of data on occupational accidents and diseases are the Occupational Safety and Health Services Department, the Mines Safety Department and the Workers Compensation Fund Control Board. With regards to the first two institutions, there is gross underreporting of accidents by workplaces that fall under their respective jurisdictions. Reporting of accidents to Workers Compensation Fund Control Board, on the other hand, is far much better.

Although Zambia Federation of Employers (ZFE) does not have a model policy on OSH to serve as a guide for its members, various individual members of ZFE have their own enterprise based OSH policies. Zambia Congress of Trade Unions, on the other hand, has a policy on OSH.

Apart from the regular activities carried out by the OSH authorities in order to enforce the provisions of OSH legislation, one of the notable activities which are currently on-going is the implementation by the International Labour Organization's European Union funded project on "Improving Safety and Health at Work through a Decent Work Agenda".

APPENDIX

2-3 *RESULTS OF GAP ANALYSIS WITH WORLD BANK ENVIRONMENTAL AND SOCIAL STANDARDS*

Gap Analysis with World Bank Environmental and Social Standard (ESS) and associated actions

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
ESS1: Environmental and Social Impact Assessment			
Environmental and social risks and impacts	The Borrower will carry out an environmental and social assessment of the project to assess the environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect and cumulative environmental and social risks and impacts throughout the project life cycle.	Chapter 6 (ESIA 2021) identifies sources of potential impacts at different phases of the project through consultation of feasibility documents, PAP and stakeholders' engagement and description of environment. Method for impact assessment considers intensity, extent, duration, and probability of occurrence. Impact assessments are divided by phases. Only negative impacts are assessed (p. 6-7: 6-8) although potential positive impacts on economic development and infrastructures are identified and discussed (p. 6-10:6-11). A cumulative impact assessment was also made based on baseline information and foreseeable impacts of a future transmission project that may overlap in time and space (ICBC Project). The impact assessment is judged proportionated to the potential risks and impacts but does not assess impacts on climate change. For the Kasama-Nakonde line, impacts on the physical, biological and socio-economic environment are also evaluated in terms of direct/indirect impact, reversible or not reversible impacts, cumulative or not cumulative, frequency and duration. (ESIA 2016 p.78-84). However, sources of impacts, detailed impact description, proposed mitigation measures and impact assessment are only superficially addressed.	– Review the existing impact assessment based on the new Project's components and activities as well as on the updated understanding of the physical, biological and social components composing the area crossed by the transmission lines' right of way. – Give special care to complete the impact assessment of aspects that were not assessed or insufficiently assessed in the previous ESIAs, such as contribution to climate change as well as occupational health and safety aspects.
Environmental and social risks and impacts related to climate change	ESS1 requires that environmental and social risks and impacts related to climate change be taken into account in the environmental and social assessment.	Impacts on climate change or global warming were not assessed. Neither climate change resilience nor adaptation elements are discussed in all assessed documents (ESIA, ESMP from 2021). The only mention is in the 2016 ESIA (Kasama-Nakonde), where it is stated that the project could contribute to climate change mitigation by providing a cleaner source of energy.	– Evaluate GHG emissions associated with the project's construction and operation phases and propose applicable mitigation measures to minimize the project's contribution to Zambia's national emissions. – Introduce a section, within the ESIA, to describe and assess the resilience of the project to climate change associated risks (i.e. increase in extreme weather events, extreme heat waves, etc.).

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Vulnerable groups and people	ESS1 requires differentiated measures to be adopted so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable. It also requires to ensure that these groups are not disadvantaged in sharing development benefits and opportunities resulting from the project. It defines disadvantaged or vulnerable as those who may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits. Such an individual/group is more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so. This will take into account considerations relating to age, including the elderly and minors, and including in circumstances where they may be separated from their family, the community of other individuals upon which they depend.	Sources and risk of gender-based violence (GBV) during all the phases of the project were assessed. Barriers from seeking help are identified and means to overcome these barriers are addressed. **Female headed households** were consulted in 2019 to discuss perceived risk during resettlement and an awareness program is planned to ensure equal access (ESIA2021). In the RAP2021, vulnerable groups have been identified (**chronically ill or handicapped, female, child, elder headed households)** and they are entitled to in-kind compensation (house for house) instead of cash compensation. A **Gender-based violence action plan** framework is developed in the ESMP2021 chapter 4 to 1) to implement measures to prevent GBV during the project and 2) implement measures to address any situation related to GBV during the project. It includes measures to ensure **women** are not left behind during negotiation process, compensation agreement and recruitment process. The GBV action plan also includes measures against **child** labor and services to help **widow** or **female-headed households** during resettlement. The Grievance Redress Mechanism (GRM) framework includes a measure to make it accessible to **vulnerable groups** to communicate their grievances.	– Review and update the information related to vulnerable groups and people in relation with the changes in alignment of the right of way to identify any distinct new groups and ensure proper consultation to assess any new potential impacts and elaborate additional group specific mitigation measures.
Environmental and social commitment plan (ESCP)	ESS1 requires the Borrower to develop and implement an ESCP, which will set out measures and actions required for the project to achieve compliance with the ESSs over a specified timeframe. It will take into account the findings of the environmental and social assessment, the Bank's environmental and social due diligence, and the results of engagement with stakeholders. It will be an accurate summary of the material measures and actions required to avoid, minimize, reduce, or otherwise mitigate the potential environmental and social risks and impacts of the project.	The ESIA2021, ESMP2021, ESIA K-N2016, RAP nor RCAP. present a wide selection of mitigation measures and specific engagements. An ESCP has been produced by ZESCO and approved by the WB. .	– NA

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Project monitoring and reporting	As per ESS1, environmental and social monitoring and reporting measures will be provided. The monitoring plan will be proportionate to the project's environmental and social risks and impacts. Adequate institutional arrangements, systems, resources, and personnel will be provided to carry out monitoring.	A monitoring plan is presented in chapter 6 of the ESMP2021 and covers the surveillance and monitoring of the implementation of management measures/plans and of selected environmental and social indicators during the construction and operation phases. For each of the Environmental and Social measures requiring surveillance, the following aspects are covered: methods, target, location, frequency, and responsibility/supervision of surveillance. Similarly, for each Environmental and Social components requiring monitoring, the following aspects are covered: methods, standard/targets, location, frequency, responsibility, and cost. Note that Gender-Based Violence Action Plan, Grievance Redress Mechanism, Stakeholder Engagement Plan and Resettlement Action Plan have their own detailed monitoring programs (p.6-1). **ESIA K-N 2016:** In this ESIA, it is only mentioned that ZESCO shall implement a monitoring program for the implementation of the EMP, labour recruitment approaches, camp site selection, effectiveness of various programs, etc. (p. 86).	– Revise the overall monitoring plan based on the updated requirements associated with the impact assessment of the final alignment of the ZTIP transmission line in Zambia. Integrate all developed specific management plans and additional measures.
Ecosystem services	ESS1 requires environmental and social assessment to take into account all relevant environmental and social risks and impacts including those related to ecosystem services and the use of living natural resources, such as fisheries and forests.	Ecosystem services provided by local habitats including regulation of soil and water stability/quality and provisioning services (timber, food, medicine) collected through discussion with local communities and by compiling the ethno-botanical uses of species as recorded on herbarium records are presented in the ESIA2021.Services associated with cultural heritage are not mentioned. Impacts of the project on habitat loss consider those ecosystem services.	– Update the evaluation of the ecosystem services to take into consideration the new land areas and land users potentially affected by the changes made to the line's right-of-way, particularly between Kasama and Nakonde.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
ESS2: Labor and Working Conditions			
Working conditions	As per ESS2, the Borrower will develop and implement written labor management procedures applicable to the project. Those procedure will set out the terms and conditions of employment (which should be disclosed to employees with information and documentation that is clear and understandable). The labor management procedures will set out measures to prevent and address harassment, intimidation and/or exploitation. The labor management procedures will specify the minimum age for employment or engagement in connection with the project, which will be the age of 14 unless national law specifies a higher age. Forced labour will not be used in connection with the project.	In the ESIA 2021, labor aspects are considered in relation with child labor limitations and a labor influx management plan. However, there is no specific workers and labor management plan neither Occupational Health, Safety and Security Management Plan presenting the promoters engagement with regards to labor aspects. ZESCO is however currently preparing a Labour Management Procedure to be approved by the WB.	– Develop an Occupational Health, Safety and Security Management Plan. – ZESCO to complete the Labour Management Procedures in compliance with ESS2.
	The Borrower will make reasonable efforts to ascertain that third parties who employ workers have labour management procedures in accordance with ESS2 in place.	Nothing was said on third party's employee labour management.	– Obtain ZESCO human resources procedures and employee manual to ensure compliance with ESS2 requirements on third party's employees management. Minimally add some basic engagement for ZESCO to review their labor management system to include clauses related to third party's employees.
Compliant Management Mechanism	ESS2 requires that an easily accessible grievance mechanism be provided for all direct workers and contracted workers to raise workplace concerns. Such workers will be informed of the grievance mechanism at the time of recruitment and will be protected against any reprisal for its use.	A Framework for the Grievance Redress Mechanism (GRM) is presented in chapter 4.5 of the ESMP2021. This GRM concerns all affected communities and external stakeholders. During construction, it is mentioned that a specific workers GRM is to be implemented by all contractors and shall be presented to workers upon hiring. This GRM should includes accessible grievance box, dedicated staff to help workers with submitting their complaints and to meet with concern parties to discuss answers and actions. The specific workers GRM is not developed yet.	– Develop a specific Grievance Redress Mechanism for workers based on the one presented in the ESMP 2021 and ensure it give proper directions for the coverage of workers requirements.
Occupational health and safety	ESS2 requires that measures relating to occupational health and safety compliant with industry-specific EHS guidelines will be applied to the project. This includes identification of potential hazards, preventive and protective measures, training of project workers, documentation and reporting of occupational accidents, diseases and incidents, emergency prevention, remedies for adverse impacts and procedures for workers to report unsafe or unhealthy work conditions. Those should be included in the ESMP.	It is acknowledged in the ESIA2021 that workers will be exposed to occupational health and safety risks at all stages of the project. It is mentioned that an **Occupational Health, Safety and Security Management Plan** will be implemented and that the EHS guidelines will be considered. However, no Occupational Health, Safety and Security Management Plan has been developed yet in the ESMP2021. There are some mentions of mitigation measure related to OHS in the ESMP2021 such as document risk assessment process, provide training, audit, development of inspection programs and report and investigation of all accidents.	– Develop an Occupational Health, Safety and Security Management Plan.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Occupational health and safety	Project workers will be provided with facilities appropriate to the circumstances of their work, including access to canteens, hygiene facilities, and appropriate areas for rest. Where accommodation services are provided to project workers, policies will be put in place and implemented on the management and quality of accommodation to protect and promote the health, safety, and well-being of the project workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs.	Different elements regarding workers' camp are mentioned through ESIA and ESMP. The contractor must provide facilities for employees that would be subject to the supervising engineer approval and that shall comply with all local laws and regulation (buildings, maintenance, and operation). It is mentioned that international worker health standards such as the IFC-EBRD Joint Guidance Note on Worker Accommodations (Appendix 3-4), or other relevant standards will be considered to maintain facilities in good and safe conditions.	– Integrate requirements for worker camps in the OHSSMP to be developed.
	A system for regular review of occupational safety and health performance and the working environment will be put in place and include identification of safety and health hazards and risks, implementation of effective methods for responding to identified hazards and risks, setting priorities for taking action, and evaluation of results.	There are no specific monitoring/review programs yet for OHS. However, mitigation measures for risk related to OHS in the ESMP2021 include: report and investigate any accidents or near misses while monitoring the implementation and communication of control measures.	– Develop an Occupational Health, Safety and Security Management Plan, integrating relevant monitoring measures and indicators.
Community labor	The Borrower will assess the potential risks and impacts of the activities to be conducted by community workers and, at a minimum, apply the relevant requirements of the General EHSGs and industry-specific EHSGs. The labor management procedures will set out roles and responsibilities for monitoring community workers. The review system established will take into account the provision of labor by community workers in the project, and that adequate training is provided to such workers, tailored to their particular needs and the potential risks and impacts of the project.	An impact assessment for occupational health and safety risk is presented in ESIA2021 including sources of risks and risks descriptions during construction, operation and decommissioning phases. ZESCO is however currently preparing a Labour Management Procedure to be approved by the WB.	– ZESCO to complete the Labour Management Procedures in compliance with ESS2.
Primary suppliers	As part of the environmental and social assessment, the Borrower will identify potential risks of child labor, forced labor and serious safety issues which may arise in relation to primary suppliers.	Primary suppliers have not been identified yet.	– Verify with ZESCO if they have clear procedures or criteria for the selection of primary suppliers or within their contract clauses with suppliers associated with risks of child labor, forced labor and serious safety issues and make reference to them in the updated ESIA and ESMP.
ESS3: Resource Efficiency and Pollution Prevention and Management			

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Resources efficiency	The Borrower will implement technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources. Such measures will integrate the principles of cleaner production into product design and production processes to conserve raw materials, energy and water, as well as other resources.	Project requirements include aggregates, gravel and sand (raw materials), water, and electricity supply from generators during construction. It is mentioned that those should be obtained locally but there are no measures to improve efficient consumption (ESIA2021). In the ESIA 2016 for Kasama-Nakonde, it is mentioned that wood waste from the clearing of the wayleave could be used by local communities and that existing roads should be used as much as possible to limit the construction of new ones.	– Verify with ZESCO if they have such procedures and make reference to them in the updated ESIA and ESMP
Waste and hazardous material management	As per ESS3, the borrower must: – Avoid the generation of hazardous and non-hazardous waste and minimize generation by reusing, recycling, and recovering waste in a manner that is safe for human health and the environment. – Minimize and control the use of hazardous materials, consider less hazardous substitutes and assess risks associated with the use of pesticides.	In the ESIA 2021, it is recommended that a Waste and Hazardous Waste Management Plan in compliance with WB EHS Guidelines on waste management be developed and implemented prior to construction but it is not included in the ESIA. Different management measures are proposed in the ESMP to avoid or minimize waste such as having designated wash down areas, having good storage practices, providing clean up equipment and training (ESMP2021). In the ESIA2016 Kasama-Nakonde, presented management measures of excess materials and waste during decommissioning phase.	– Include in the updated ESMP, the production of a waste and hazardous material management plan and describe its required content to meet with the ESS3.
Pollution prevention and management	ESS3 indicates that the borrower must: – Avoid or minimize emissions of pollutants in the atmosphere, water, and soils according to the strictest national and international standards. – Identify the responsible party in case of historical pollution and undertake an assessment of risks to human health or the environment.	Air quality deterioration, soil and water contamination are potential risk of the project. The Waste and Hazardous Waste Management Plan is not developed yet, but it should include measures to avoid soil and water contamination. Measures to avoid soil mixing during excavation are proposed (ESIA2021). General mitigation measures against soil, water and air pollution are also proposed in ESIA2016 Kasama-Nakonde.	– Include in the updated ESMP, the production of a pollution prevention management plan and describe its required content to meet with the ESS3.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
	– Address potential adverse project impacts on human health and the environment considering relevant factors such as existing ambient conditions, assimilative capacity of the environment, existing and future land use, proximity to areas of importance to biodiversity, potential of cumulative impacts and impacts of climate change.	During the construction, operation and decommission phases, risk for water contamination (by exposing groundwater and surface water to accidental spills and leaks) is assessed. Proposed mitigation measures include: -"*Install silt barriers (e.g., fencing) when working in steep riparian areas and along wetlands to minimize potential sediments being transported to aquatic habitats*" -"*Construct a designated, signposted, concrete wash down bay that is fully contained for all excess concrete and concrete wash down (e.g., plastic lined)" (p.6-16)"* "*Moreover, the excavation of pits for the towers' foundations could expose groundwater (…) Thus, any contaminated groundwater observed during excavation should be pumped out of the pits*." (6-17). Air quality: "*Some greenhouse gas (GHG) emissions will occur during the construction phase. Emissions during the construction phase will derive from (1) the use of fossil fuels to power construction equipment and transport vehicles and (2) to land-use changes caused by wayleave clearance*" (p. 6-20) . Those emission cannot be avoided (p. 6-20). "*Other GHG emissions will be related to land-use changes caused by clearance of standing woody biomass in the wayleave."* But this shouldn't be significant (p. 6-20 ESIA).	

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Management of pesticides	Where projects involve recourse to pest management measures, the Borrower will give preference to integrated pest management (IPM) or integrated vector management (IVM) approaches using combined or multiple tactics. In the procurement of any pesticide the Borrower will assess the nature and degree of associated risks, taking into account the proposed use and the intended users. The Borrower will not use any pesticides or pesticide products or formulations unless such use is in compliance with the EHSGs.	According to ESIA 2021, pesticide should not be used during the project as mechanical methods are favoured to control vegetation in the wayleave during the operation phase.	– Ensure that a section of the Waste and hazardous material management plan will be dedicated to pesticides in case herbicides are finally used to control vegetation in the line's right-of-way or within the substation's open areas.
ESS4: Community Health and Safety			
Community health and safety	Risks and impacts of the project on the health and safety of the affected communities, including those who may be vulnerable, must be assessed (including in terms of infrastructure and equipment design and safety, safety of services, traffic and road safety, ecosystem services, community exposure to health issues, management and safety of hazardous materials and emergency preparedness and response).	Risk assessment on safety and public health has been done in ESIA, 2021. Potential risk and impact include increased risk of STDs, increase risk of abuse and child labor, increase risk of accident due to traffic, increase stress due to nuisance, risk of electrocution by equipment. Ultimately, it is acknowledged in both ESIA that the project could have a positive impact on communities' health by power supply to health facilities.	– N/A
Risk Hazard Assessment	A Risk Hazard Assessment (RHA) will be conducted for projects having the potential to generate emergency events. Based on the results of the RHA, an Emergency Response Plan (ERP) will be prepared in coordination with the relevant local authorities and affected communities. The ERP will include controls proportionate to the nature and scale of the hazard, identification of and secure access to emergency equipment, notification procedures for emergency responder, channels for notification of communities, training program for emergency responders including drills, coordinator for ERP implementation and measures for restoration and cleanup of the environment following any major accident.	There's no mention of a Risk Hazard Assessment (RHA) or of a specific Emergency Response Plan (ERP) in the ESIA 2021, ESIA2016 and ESMP 2021. However, it is suggested that an Emergency Measures plan and an Emergency Response and Preparedness Plan shall be formulated and implemented.	– Include in the updated ESMP, the production of an Emergency response plan and describe its required content to meet with the ESS4.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Community exposure to health issues	The Borrower will avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable and noncommunicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. The Borrower will take measures to avoid or minimize transmission of communicable diseases that may be associated with the influx of temporary or permanent project labor.	The ESMP2021 and ESIA2016 suggests the development of a Community Health and Safety Plan to mitigate community exposure to diseases (not done yet). The GV action plan does include awareness programs on HIV/AIDS for all workers and community members.	– Include in the updated ESMP, the production of a Community Health and Safety Management Plan and describe its required content to meet with the ESS4.
Security personnel	When the Borrower retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by these security arrangements to those within and outside the project site.	The risk posed by security arrangements, to those within and outside the project site, is not assessed in the ESIA.	– Verify with ZESCO if they have specific procedure or contractual clauses when hiring/using security personnel and make reference to these documents in the ESIA and ESMP. – Assess potential risks posed by security arrangements if applicable. – Include a grievance mechanism compliant with WB requirements including the grievance resolution for any impact of security personnel that may impair livelihood and safety of surrounding communities.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement				
Community and Stakeholder Engagement	The project promoter will engage with affected communities, including host communities, through the process of stakeholder engagement described in ESS10. Relevant information on alternative project designs will be disclosed to affected communities and PAPs. Information related to the project will also be disclosed throughout the project phases. The consultation and participation process is an ongoing, organized, and iterative process. It is documented in the resettlement plan and in monitoring reports. The plans show how affected households and communities (including host communities) are involved throughout the process of resettlement planning, implementation, and monitoring.	The preliminary Resettlement Action Plan was produced in 2017 and updated in 2021. Public consultations for the RAP process were initiated between 2013-2017 and continued in 2019 for the update of the RAP. Public consultations covered a wide range of rightsholders and stakeholders. The consultation process was largely managed by ZESCO and the consultants. Meetings were held with local authorities (Regional, District and Traditional) as well as representatives of potentially impacted communities. A record of meetings and the issues and concerns raised is appended to the 2021 updated RAP. The records from the preliminary as well as revised RAP indicate that disclosure on the project intentions were organized. The degree to which the preliminary RAP was disclosed is set out in Section 11.1.16 of the updated RAP. The updated RAP indicates that compensation sign off is the individual process that ZESCO uses to disclose intent to compensate (see Section 12 of updated RAP). Signed compensation agreements have been supplied by ZESCO.	ZESCO indicated that community meetings were held in the project areas during the ESIA. Impacted stakeholders were engaged when valuation took place and then the results of valuation were disclosed. This was also used as an opportunity to counsel PAPs on the cut off and on use of compensation as well as project status. It is not clear how those impacted have been included in RAP monitoring. ZESCO indicated that monitoring for this section, other than a visit to observe clearance of the RoW, had not yet been undertaken as such there was no stakeholder engagement.	– Kasama-Nakonde: Disclosure of RAP to all those within the proposed project wayleave to be demonstrated. – Role of PAPs and other relevant stakeholders in Monitoring to be demonstrated for the RCAP implementation.

[1] Findings and comments regarding the Kasama-Nakonde section (and associated actions to fill the gaps) may be updated as more clarity is obtained on potential gaps during the RCAP Audit.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Avoid and Minimize Displacement	The project promoter will demonstrate that involuntary land acquisition or restrictions on land use are limited to direct project requirements for clearly specified project purposes within a clearly specified period of time. Alternatives considered for the project design shall avoid or minimize land acquisition or land use restriction.	Since 2013, ZESCO has carried out a set of alternative analyses with the aim to reduce environmental and social impacts. The 2019 transmission line was different from the 2017 version where sections were revised to avoid impacts. The 2017 ESIA had consulted stakeholders to present several alternatives and achieve social acceptability of the Project. In addition, since 2017, the alignment has been refined to further reduce environmental and social impacts. In addition, the format of land acquisition applied by ZESCO involves an easement that allows for most primary livelihood activities within the wayleave to continue. This greatly reduces the impact of land acquisition and loss of livelihood opportunities.	Alternatives analysis for the Kasama-Nakonde section is presented in the ESIA (ZESCO, 2016) and the RCAP (ZESCO, 2017). Two alternatives were identified and assessed. Alternative 2 was chosen notably because it affects less built-up areas, and avoids the Kasama Airport and the Luchewe Flood Plain (waterlogged areas). No quantitative assessment is provided. The final selected alternative was optimised, where possible, to avoid displacement. In addition, the format of land acquisition applied by ZESCO involves an easement that allows for most primary livelihood activities within the wayleave to continue. This greatly reduces the impact of land acquisition and loss of livelihood opportunities.	– NA

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Resettlement Planning Tools	The project promoter will prepare a plan proportionate to the risks and impacts associated with the project: – For project causing physical displacement, the plan will set out the additional measures relevant to relocation of affected persons; – For projects involving economic displacement with significant impacts on livelihoods or income generation, the plan will set out the additional measures relating to livelihoods improvement or restoration; and – For projects that may impose changes in land use that restrict access to resources in legally designated parks or protected areas or other common property resources on which local people may depend for livelihood purposes, the plan will establish a participatory process for determining appropriate restrictions on use and set out the mitigation measures to address adverse impacts on livelihoods that may result from such restrictions.	RAPs have been prepared. The preliminary and updated RAPS respond to the risk profile of the project.	Further Gap Analysis and RCAP audit will allow assessing the compliance of the RAP from planning through to implementation.	– Given the status of the updated RAP and its date a new RAP for the Pensulo Kasama section is envisaged.
Forced Eviction	The project promoter will not resort to forced evictions of affected persons. The exercise of eminent domain, compulsory acquisition or similar powers by a Borrower will not be considered to be forced eviction providing it complies with the requirements of national law and the provisions of the ESS5 and is conducted in a manner consistent with basic principles of due process.	Forced eviction is not planned in the RAP.	For the Kasama-Nakonde section, forced eviction has not – as far as can be established – been used by the developer to acquire land access. No legal applications for eviction have been applied for or processed. This was confirmed with interviews with ZESCO staff and local stakeholders, although they indicated they were still negotiating with a small number of households over compensation for the line.	– NA

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Socioeconomic Survey	Where land acquisition or restrictions on land use are unavoidable, the Borrower will, as part of the ESA, conduct a census to identify the persons who will be affected by the project, to establish an inventory of land and assets to be affected, to determine who will be eligible for compensation and assistance, and to discourage ineligible persons, such as opportunistic settlers, from claiming benefits. The social assessment will also address the claims of communities or groups who, for valid reasons, may not be present in the project area during the time of the census, such as seasonal resource users. The census will determine the status of PAPs.	Typically, three aspects apply to this element. The first is a census that identifies all those eligible as being subject to loss of assets and or rights. This is typically derived from the process of conducting an inventory of lass as well as a socio-economic baseline survey. Final figures from the valuation reports show that 285 households will be impacted by at least the loss of a primary structure, a secondary structure, a fruit tree, an exotic planted tree (timber), or a piece of titled land and 5 associations will lose a structure or a piece of land. As per the update RAP this is a 100% coverage of those impacted. Of the 285 there were 175 households identified as potentially physically displaced. The inventory of loss was developed as a supplement to data generated for previous land acquisition exercises. Between Pensulo and Kasama a wayleave of 35 m on one side where it parallels the existing 330-kV Pensulo-Kasama line and, in some cases, 50 m of new wayleave in locations where the ZTIP Project is not paired with the 330-kV Pensulo – Kasama was examined and impacts enumerated. Between Kasama and Nakonde a wayleave of 10 m on one side where it parallels the ICBC Project was examined, and impacts enumerated. A total of 1 654 ha was included in the assessment.	Initially only census of affected houses and parcels were shared. No other assets, such as economic trees, were identified. ZESCO indicated that a socio-economic survey of households had been undertaken in 2016 while the inventory of loss was being developed. A report that summarises the findings is available. There are some 480 project affected households, the bulk of which are impacted through loss of structures. Data on affected households are available although there are some details that would typically be used for a socio-economic description that are not included. Data on individual members that better determine vulnerability profiles, food security, details on income sources, network linkages, etc. should be better covered.	– The inventory of loss for the Pensulo - Kasama wayleave as well as the socio-economic survey can not be assumed to be valid. These will need to be redone and an additional RAP developed. – An audit of the land take and compensation process for Kasama Nakonde will be developed. This will compare what was compensated, and to be compensated, with what is envisaged as finally required. – A validation survey must be used to expand the coverage of the socio-economic survey for the Kasama Nakonde line.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Socioeconomic Survey (con't)		The socio-economic baseline covered 177 households as per the update RAP. It is not clear how the 177 households relate to the 285 affected in total. There may be a bias towards survey of those who are potentially physically displaced but this will be clarified in discussion with the ZESCO resettlement team. ZESCO in interviews indicated that they were not sure what the basis of the selection of households was but would check on this and revert. It should be noted that it is not an outright requirement of ESS5 to have 100% coverage for the baseline (unlike the census and inventory of loss) but where a sample is selected the reasons should be made clear. The method for selection should also be clear. While payment of compensation for assets within the Kasama Nakonde stretch appear to have been largely completed – save for trees and permanent acquisition of land for pylons, the same does not hold true for Pensulo Kasama. Given the date of the asset inventory and the potential status of the cut-off date for the Pensulo Kasama wayleave, it will be difficult to justify an assumption that this inventory and census still hold. As such the need to redo this and to generate a further updated RAP is envisaged.		

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Cut-Off Date (Establishment and Validity)	The project promoter will establish a cut-off date for eligibility. Information regarding the cut-off date will be well documented and will be disseminated throughout the project area at regular intervals in written and (as appropriate) non-written forms and in relevant local languages. This will include posted warnings that persons settling in the project area after the cut-off date may be subject to removal.	A cut-off date was declared on 19 December 2019. This activity was undertaken by ZESCO. The date of completion of the census and assets inventory of parties affected by the Project. The published cut-off makes it clear that parties occupying or any fixed assets established in the defined project area after the cut-off date are not eligible for compensation and/or resettlement assistance. It is not clear how the date was made evident in the impacted area and what was used to demarcate the area that falls within the wayleave and as such is subject to development moratorium. It is not clear how the Pensulo Kasama wayleave moratorium area has been respected. The ZESCO team indicated that the right of way is not demarcated as such there is no physical delineation of the land to which the cut off and development moratorium apply. The potential for incursion into this area is high and has been identified as a risk by the team.	No information to date is available in the RCAP and it not clear – other than a statement that "The completion of the census marked the cut-off date for eligibility for compensation." how this was developed. However, it was established in interviews with ZESCO that the cut-off date was disclosed in community meetings that were held prior to the valuation exercise and with traditional and district leaders. It was also discussed with households when the valuation report was disclosed. These households were given copies of the cut off declaration. However, the ZESCO team indicated that the right of way is not demarcated as such there is no physical delineation of the land to which the cut off and development moratorium apply. The potential for incursion into this area is high and has been identified as a risk by the team. This was further confirmed in interviews during the field mission where multiple stakeholders indicated that the lack of demarcation of the wayleave compensated was a major project risk and that encroachment had almost certainly occurred (confirmed by satellite imageries).	– Given the date of the cut off it may be that the wayleave area defined by the cut off has not be respected and enforced. As such it is likely that the updated RAP for this section may have to re-establish a cut-off date and new development moratorium.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Eligibility Criteria	Affected persons may be classified as persons: a) Who have formal legal rights to land or assets; b) Who do not have formal legal rights to land or assets, but have a claim to land or assets that is recognized or recognizable under national law; or c) Who have no recognizable legal right or claim to the land or assets they occupy or use. The census will establish the status of the affected persons.	The updated RAP indicates that the census has established the criteria for eligibility. Table 4-1 sets out the impacts expected by acts of project development and how this triggers displacement and who is eligible. This has been linked to the inventory of loss and as such eligibility is defined. There is no indication that those who have no recognizable legal right or claim to the land or assets they occupy or use have been excluded from the eligibility matrix but this will be confirmed with the ZESCO resettlement team.	As for the updated RAP. Section 5 sets out eligibility that is compliant with the ESS5. ZESCO indicated that although there may be some informal land users/tenants who use land on a negotiated basis with the individual household who has primary holder of lands rights, this is not common. Where this happens the primary holder of the asset will have been compensated. Given that this largely applies to crops and crop lands that will continue to be used in the easement, the need to further consider these for compensation – other than for construction damage – is not applicable.	– None envisaged but to be confirmed with ZESCO

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Asset Valuation	The valuation is based on the replacement cost, which is a sufficient compensation to replace assets, plus necessary transaction costs associated with asset replacement. Where functioning markets exist, replacement cost is the market.	Valuation methodology for structures as per the updated RAP Section 3-2 states replacement value but this needs to be checked with the ZESCO team. Notable is that the land under communal tenure is not valued for compensation purposes. The land is deemed to be a common asset held by traditional leaders. The privately owned (titled) land is also not valued but a unform easement compensation value of 20 000 ZMK per ha is proposed to be paid asper Sectiop 8.3.1 of the RAP. It is not clear how the permanent land take for pylons will be considered for compensation. This will be checked with the ZESCO team. The precise methods used for checking that the rates provided for trees (Ministry of Agriculture Forestry Department) and crops were at replacement value at the time of payment needs to be clarified. It is not clear whether inflation was taken into consideration to allow for the period between the compensation schedule being drawn up and monies being made over. This will be checked with the ZESCO team.	Section 6 of the RCAP states that valuation will be carried out, but it is not clear how or when this was done, it is not clear what assets that households in the section that have been compensated for. Indications are that it was done only for structures, but this will be confirmed with ZESCO. This was confirmed by ZESCO. Compensation will be paid for structures and trees with economic value. Compensation has been calculated and, in most cases, paid over for structures. There are some outstanding instances in which owners could not be located or where compensation has been contested. Trees are being valued and the process will continue once the rainy season has passed. Where land is acquired and is communal land then compensation is not paid. Where land is titled or has been converted from agricultural to residential and as such has incurred a cost of conversion – paid to the traditional authority - then either land is replaced in kind and costs are incurred by the developer or a compensation amount equivalent to the costs of the transaction to acquire new land are paid.	– Market studies for the RAP update should be completed and compensation defined through these studies. – Clarity on the issue of inflationary adjustments is needed. ZESCO has indicated that the values as determined in 2019 by the valuation team were adjusted for inflation in 2022 for those that still needed to be paid but indicated that additional adjustment may be needed for inflation in the cases where payment still needs to be made. – Clarity on how permanent land take for pylons will be calculated for compensation. This is allowed for the commitments made in the updated RAP but its not explicit as to how this will be carried out. A protocol for valuation of this land will be provided by ZESCO.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Asset Valuation (con't)			During the field mission it was established, in consultation with ZESCO, that sometimes land was paid for even though it was Agricultural and under customary tenure. This happened on a case-by-case basis and was particularly triggered where an individual/household had a full parcel that was completely absorbed under the wayleave. The decision as to when to pay compensation was left to the discretion of the wayleave officer.	– In terms of the rates paid for trees ZESCO stated that they reviewed the rates provided by the Ministry of Agriculture and the Department of Forestry. ZESCO indicated that they have capacity to undertake these reviews. The approach that is used by Ministry of Agriculture and the Department of Forestry is, according to ZESCO, aligned with replacement value and good practise. Interviews with District Agricultural officers indicated that they largely use current market research to determine rates for trees. It was noted that capacity across districts is not equivalent, and this may lead to slightly different approaches being adopted that could lead to inconsistency among values being applied. ZESCO should set out a detailed methodology and have all districts apply this. – A definitive document that covers policy for the compensation of land parcels, both for loss of rights to use land and when orphan land should be compensated in full, needs to be developed by ZESCO. Leaving these decisions up to wayleave officers will lead to inconsistent application. It is also a burden of responsibility on the officers that should not be in effect.
Access to site	The project promoter will take possession of acquired land and related assets only after compensation in accordance with this ESS has been made available and, where applicable, displaced people have been resettled and moving allowance have been provided to the displaced persons in addition to compensation.	Access to site has not yet been triggered – to be confirmed by ZESCO.	Access to site has not yet – as far as can be established – been triggered.	

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	Kasama-Nakonde section (RCAP, 2016)[1]	
Type of Compensation (in-kind or cash)	The ESS5 requires the project promoter to offer the choice of replacement property of equal or higher value, with security of tenure, equivalent or better characteristics, and advantage of location, or cash compensation at replacement cost. Compensation in kind should be considered in lieu of cash.	Section 8.1 of the updated RAP indicates that no in kind compensation is under consideration. The rationale is given as follows: *The Project will involve few physical displacements of people along the 603-km line, and those that will be displaced will move a few meters from the wayleave. With 174 houses to move, there is less than one impacted house to move per 4 km of line. Given the large study area and the low number of houses, hiring a construction Contractor to build new houses would be difficult and may lead to long delays.* *In this framework, there is little justification to provide "house for house" compensation, except to vulnerable persons that cannot re-build their house, this situation would be dealt with on a case by case approach with vulnerable people. It should be highlighted that during the Consultant meetings with communities and PAPs, there were no complaints regarding the compensation package that ZESCO usually offers*. It should be noted that in kind is not a fixed requirement of the ESS but is a stated preference. Where in kind is not offered, particularly for replacement housing, then the onus, in terms of responsible risk management, rests with the developer to ensure that support and monitoring is in place. This is acknowledged in the rationale as set lout above. It is not clear how this case-by-case monitoring has been put into effect for the Kasama Nakonde wayleave and will be clarified with the ZESCO team. While the issue of security of tenure is not anticipated as being a challenge the degree to which this security has not been compromised required monitoring.	Only cash is mentioned. This will be confirmed with ZESCO	– Confirmation required from ZESCO that the case by case consideration of vulnerability and it implied monitoring protocols have been put into effect. Records as to where this has been done to be provided. An overview of the process followed for Kasama Nakonde must inform that way in which this will be articulated for the Pensulo Kasam wayleave. – ZESCO confirmed that all compensation paid is in cash. They indicate that this is preferred by households. They have argued that there are instances in which replacement dwelling structures should be considered but that this needs the Department of Social Welfare to participate in the process of defining eligibility on a case-by-case basis and then counselling the household. From field discussion it appears as if the Department of Social Welfare has been engaged but only for the Kahama District. While it gave counselling and financial training, it does not appear as if the issue of replacement housing for those deemed vulnerable was investigated.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Livelihood Restoration	For projects involving economic displacement with significant impacts on livelihoods or income generation, the plan will set out the additional measures relating to livelihood improvement or restoration. Livelihood restoration and improvement programs will commence in a timely fashion in order to ensure that affected persons are sufficiently prepared to take advantage of alternative livelihood opportunities as the need to do so arises.	The updated RAP indicates that most households are subsistence farmers. Some also conduct a secondary activity as a source of livelihood but there are neither businesses nor other economic activities impacted by land access restrictions. Given the nature of the easement the impact on livelihoods is anticipated to be low. Section 8.3.2. states *that the Project will not lead to an economic displacement where the livelihood of PAPs will be impacted. In fact, PAPs will be allowed to continue their agricultural activities in the wayleaves during and after works. During construction, agriculture could be damaged, however, people will be fully compensated for the value of the impacted crops. Households will only be moved a few meters outside of the wayleave and the distance between the house and the field will not be significantly impacted. In this framework, designing a livelihood restoration plan, or providing assistance to farmers, is not required.*	Not considered although relocation assistance is mentioned.	– The level of satisfaction with risk management associated with the no livelihood restoration and limited assistance approach will need to be verified in the mooted audit of the Kasama Nakonde wayleave and if needed adjusted for the Pensulo Kasama wayleave.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Gender Aspects	The consultation process should ensure that women's perspectives are obtained, and their interests factored into all aspects of resettlement planning and implementation. Addressing livelihood impacts may require intra-household analysis in cases where women's and men's livelihoods are affected differently. Women's and men's preferences in terms of compensation mechanisms, such as replacement land or alternative access to natural resources rather than in cash, should be explored. A comprehensive planning process includes identification of: (a) women's means of income generation and livelihoods, including nonformal activities such as gathering natural resources, or trading and bartering services and wares; (b) women's social and economic networks, including extended family ties; and (c) women's ownership of affected assets, including land and crops, to appropriately compensate them.	The RAP was compiled with the assistance of a gender specialist. The ESIA and ESMP include a Gender-Based Violence (GBV) Action Plan to ensure women are not disadvantaged during compensation negotiation. Gender disaggregation, where relevant, is largely considered in the analysis of the socio-economic baseline and vulnerability characteristics. Section 14.3 of GRM focal points and capacity building is explicitly ensuring gender-based access and equity for grievance redress. Appended records of consultation appear to show effective participation by women in the consultation process. The monitoring protocol (Section 15) explicitly allows for vulnerability and linked gender issues to be given a focus.	Not considered. Gender is defined within vulnerability but there is no indication of how this has been managed as an issue within resettlement. ZESCO indicated that they were aware of the gender requirements and tried to ensure that both spouses were present when valuation was done and when the disclosure document was signed.	– Confirmation from ZESCO that recommendation as per the ESIA/ESMP for the GBV Action Plan have been in effect during compensation negotiation have been followed. – Confirmation from ZESCO that monitoring following the protocols for gender inclusion and oversight as per the Monitoring Plan have been in effect. – ZESCO indicated that they encourage the spouse to be the witness to the disclosure of the compensation forms but this is not mandatory

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	Kasama-Nakonde section (RCAP, 2016)[1]	
Vulnerable Groups/ Persons	The consultation and planning processes shall take into consideration affected disadvantaged or vulnerable individuals or groups. The project promoter has to put special efforts to include those who are particularly vulnerable to hardship because of physical or economic displacement. The World Bank refers to '' disadvantaged or vulnerable'' to those who may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits. This will take into account in particular considerations relating to age, including the elderly and minors.	Section 3.3.3set out an overview of vulnerability. Assistance for those deemed vulnerable with replacing dwellings, where required, is a commitment in the RAP (Table 4-2 and Section 7-1, Table 8-1, Section 8.1, Section 8.2.2., Section 9). The Monitoring Framework as per Section 15 commits to a vulnerability focus.	As with gender although vulnerability is mentioned and acknowledged but no indication as to how this has been managed is provided. The site visit established that the Department of Social Welfare was involved in providing assistance to households, including vulnerable, in terms of counselling and financial training. However this was limited to the Kasama District only. Degree to which replacement housing has been requested and provided for those deemed vulnerable is not known. ZESCO confirmed that this has not yet been monitored in the case of the Kasama-Nakonde stretch and this was confirmed in interviews on the field.	– Monitoring records that indicate how vulnerability has been considered to be examined with ZESCO. – Report on degree to which replacement housing has been requested and provided for those deemed vulnerable to be provided by ZESCO. – The RAP audit will sample households and cross-check vulnerability status and potential in kind options selection requirements.
Grievance Mechanism	The project promoter will ensure that a grievance mechanism for the project is in place, as early as possible in project development to address specific concerns about compensation, relocation, or livelihood restoration measures raised by displaced persons (or others) in a timely fashion. Where possible, such grievance mechanisms will utilize existing formal or informal grievance mechanisms suitable for project purposes, supplemented as needed with project-specific arrangements designed to resolve disputes in an impartial manner.	In particular, the efficacy of the monitoring of the GRM as per Section 14.2.1 has taken place to be discussed with ZESCO and if available records of such monitoring undertaken by the envisaged NGO. The status of the Focal Point process (Section 14.3) of the GRM to be discussed with ZESCO.	A Grievance mechanism is provided in Section 7 and the degree to which this has been managed will be discussed with ZESCO. GM is in place and there are grievances logged (in a spreadsheet provided) and set out as resolved but there are incomplete records. ZESCO indicated that the Chief Social Officer manages the Grievance records. ZESCO stated that the incomplete records are for an 8 km stretch from Kasama Substation to the Mpika Road Section. These relate to the need to pay compensation for land that has been converted from Communal Agricultural to Residential.	– The 8 km stretch will be specifically targeted during PAP and community engagement as part of the RCAP Audit. – ZESCO to improve monitoring with PAPs and affected communities.

Themes	World Bank environmental and social standards	Findings and comments		Actions to fill the gap
		Pensulo-Kasama section (RAP, 2021)	**Kasama-Nakonde section (RCAP, 2016)[1]**	
Monitoring and Evaluation	The project promoter will establish procedures to monitor and evaluate the implementation of the plan. The extent of monitoring activities will be proportionate to the project's risks and impacts. For all projects with significant involuntary resettlement impacts, the project promoter will retain competent resettlement professionals to monitor the implementation of resettlement plans, design corrective actions as necessary, provide advice on compliance with this ESS, and produce periodic monitoring reports. Affected persons will be consulted during the monitoring process. Periodic monitoring reports will be prepared and affected persons will be informed about monitoring results in a timely manner.	Section 15 sets out a comprehensive plan for monitoring with performance indicators to be measured.	The RCAP states that "*For effective implementation of the monitoring and evaluation of the RCAP, the Environmental Coordinator (ECO) will maintain the baseline survey data prior to the resettlement impacts as a reference for the process. The resettlement and associated changes will be noted in order to properly identify and mitigate negative changes related to the process. The ECO will submit reports to the Project Manager for further action. Monitoring and evaluation of the resettled PAPs will continue for a period of two (2) years*.". The degree to which this has been implemented will be discussed with ZESCO. While the Department of Social Welfare made visits to households to assist in financial literacy training, it did not follow up to establish the efficacy of the training or to establish whether money had been used appropriately. Provision of monitoring reports and records from ZESCO with corrective actions approach detailed as per findings is not available as monitoring, although planned, has not happened.	– Develop and implement a detailed monitoring program to ensure proper livelihood restoration.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources			
Biodiversity management and mitigation hierarchy	Where the environmental and social assessment has identified potential risks and impacts on biodiversity or habitats, the Borrower will manage those risks and impacts in accordance with the mitigation hierarchy and GIIP.	The ESIA does apply the mitigation hierarchy, identifying avoidance, minimization and compensation measures to reduce residual impacts on biodiversity. These are also detailed in a Biodiversity Management and Monitoring Plan (BMMP) that escribed key risks and impacts on biodiversity and the mitigation strategy that applies to each risk.	– N/A
Habitat classification	Habitats are categorized as modified, natural and critical habitats and a differentiated risk management approach is required based on habitat sensitivity and values.	Natural, modified and critical habitats were characterized in the 2021 ESIA, notably by carrying out walkover surveys of key areas. However, the characterization is based on definitions in the operational policy OP 4.04 Natural Habitat. Although definitions for natural and modified habitat have not changed significantly between OP 4.04 and ESS6, the definition of Critical habitat has significantly changed, and is no longer only applied to natural habitat and based on protection status. Characterization and mapping of modified, natural and critical habitat should be updated and extended to the new portion of the project; 12 km stretch from Nakonde substation to the Nakonde-Isoka 66 kV line.	– Update mapping of modified and natural habitat, ensuring all project components are covered. – Complete a Critical Habitat Assessment in accordance with ESS6
Protection of modified and natural habitats	In modified habitats that include significant biodiversity value, the borrower will avoid or minimize impacts on such biodiversity and implement mitigation measures as appropriate. In natural habitats, the borrower will seek to avoid adverse impacts in accordance with the mitigation hierarchy. It must be demonstrated that there are no technically and financially feasible alternatives and that the project achieves no net loss and, where feasible, a net gain in biodiversity over the long term. When residual impacts remain, mitigation measures may include biodiversity offsets adhering to the principle of “like-for-like” or better.	The protection of biodiversity values is considered in the 2021 ESIA and BMMP and the mitigation hierarchy is applied. Compensation measures are proposed to reach no net loss of natural habitat, however there is not effort to reach net gain of biodiversity over the long term, as required by ESS6. Also, there is no mention of adhering to the like-for-like principle.	Review proposed compensation plan to ensure the project achieves no net loss and, where feasible, a net gain in biodiversity over the long term. Review proposed compensation to ensure like-for-like principle is applied.
Biodiversity Management	The project’s mitigation strategy will be described in a Biodiversity Management Plan.	A detailed Biodiversity Management and Management Plan has been developed in 2021 and described key risks and impacts on biodiversity and the mitigation strategy that applies to each risk.	– Update BMMP once the habitat mapping is updated, and the critical habitat assessment is completed, to ensure the mitigation hierarchy is applied adequately to natural and critical habitats.
Critical habitat	Critical habitats are defined as areas with high biodiversity importance or value, including: (a) habitat of significant importance to critically endangered or endangered species as listed in the IUCN Red List of threatened species or equivalent national	Critical Natural Habitats have been described in the 2021 ESIA using definitions in the OP 4.04 Natural Habitat. However, the definition of Critical habitat in ESS6 has significantly changed.	– Complete a Critical Habitat Assessment in accordance with ESS6.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
	approaches; (b) habitat of significant importance to endemic or restricted-range species; (c) habitat supporting globally or nationally significant concentrations of migratory or congregatory species; (d) highly threatened or unique ecosystems; and (e) ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described abode in (a) to (d). In critical habitats, no measurable net reduction or negative change in biodiversity value is caused and the mitigation strategy is designed to achieve net gains of those biodiversity values.	A critical habitat assessment following ESS6 guidelines should be completed.	
Legally protected and internationally recognized areas of high biodiversity value	Where the project occurs within or has the potential to adversely affect an area that is legally protected, designated for protection, or regionally or internationally recognized,16 the Borrower will ensure that any activities undertaken are consistent with the area's legal protection status and management objectives. The Borrower will also identify and assess potential project-related adverse impacts and apply the mitigation hierarchy so as to prevent or mitigate adverse impacts from projects that could compromise the integrity, conservation objectives or biodiversity importance of such an area.	The project crosses five forest reserves along its length. Forestry Departments were consulted to ensure activities are consisted with management objectives. Habitats and impacts on forest reserves are described in detail in the 2021 ESIA and BMMP.	– N/A
Legally protected and internationally recognized areas of high biodiversity value	27. The Borrower will meet the requirements of paragraphs 13 through 25 of this ESS, as applicable. In addition, the Borrower will: (a) Demonstrate that the proposed development in such areas is legally permitted; (b) Act in a manner consistent with any government recognized management plans for such areas; (c) Consult and involve protected area sponsors and managers, project-affected parties including Indigenous Peoples, and other interested parties on planning, designing, implementing, monitoring, and evaluating the proposed project, as appropriate; and (d) Implement additional programs, as appropriate, to promote and enhance the conservation aims. and effective management of the area.	National and Regional Forestry Department were consulted in 2019 to discuss the project and its impacts. Compensation plans aim to involve the Forest Department and local communities. Reforestation schemes will be established following discussions and negotiations with the Forestry Department. All forest reserve crossed are lacking Management Plans. The BMMP includes a measure to contribute to the development of management plans for the affected forest reserve, which can be considered as additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area.	– N/A
Invasive Alien Species	The Borrower will implement measures to avoid the potential for accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbor alien species.	The ESIA and BMMP includes measures to limit introduction and propagation of Invasive Alien Species (IAS), as well as IAS monitoring measures.	– N/A
ESS7: Indigenous Peoples (IP)/Sub-Saharan African Historically Underserved Traditional Local Communities			
N/A			
ESS8: Cultural Heritage			

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Risks and impacts on cultural heritage	ESS8 requires that direct, indirect and cumulative risks and impacts on cultural heritage be assessed and identified and that measures to address impacts on cultural heritage in accordance with the mitigation hierarchy be implemented.	Risk associated with cultural and archeological heritage have been assessed. The assessment considered potential destruction or disturbance of archaeological sites and objects or of sacred sites. Mitigation measures to reduce the impact on cultural sites that are at risk by the project will be derived from appropriate authorities' assessment (NHCC).	– Ensure the inclusion of a Cultural Heritage Management Plan in the ESMP which includes minimally a chance finding procedure.
Characterization of tangible and intangible cultural heritage	According to ESS8, cultural heritage includes: – Tangible cultural heritage which includes movable and immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, religious, aesthetic, or other cultural significance. – Intangible cultural heritage, which includes practices, representations, expressions, knowledge, kills that communities and groups recognize as part of their cultural heritage, as transmitted from generation to generation. – ESS8 applies to cultural heritage regardless of whether or not it has been legally protected or previously identified or disturbed. If the environmental and social assessment determines that the project may, at any time during the project life cycle, have significant potential risks and impacts on cultural heritage, the Borrower will engage cultural heritage experts to assist in the identification, valuation assessment and protection of cultural heritage.	In the ESIA baseline**,** the extended study area has been inventoried for potential archeological and cultural sites. Several important sites have been identified like caves (with painting), burial sites, memorial monument, sacred natural areas (ESIA2021). However, only the Mwela Rock Art site is close enough to the line to raise concern. A heritage assessment will be made by the National Heritage Conservation Commission (NHCC) to determine impacts and associated mitigation measures for this site (not available yet).	– Revise the cultural heritage sections in e the ESIA to distinguish between tangible and cultural heritage, conduct specific impact assessment and propose specific mitigation measures. This distinction should be reflected in the associated management plan.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Stakeholder consultation and identification of cultural heritage	The Borrower will identify, in accordance with ESS10, stakeholders that are relevant for the cultural heritage that is known to exist or is likely to be encountered during the project life cycle . Stakeholders will include, as relevant: (a) project affected parties, including individuals and communities within the country who use or have used the cultural heritage within living memory; and (b) other interested parties, which may include national or local regulatory authorities that are entrusted with the protection of cultural heritage and nongovernmental organizations and cultural heritage experts, including national and international cultural heritage organizations. The Borrower will carry out meaningful consultations3 with stakeholders in accordance with ESS10 in order to identify cultural heritage that may be affected by the potential project; consider the significance of the cultural heritage affected by the project; assess the potential risks and impacts; and explore avoidance and mitigation options.	In the baseline of the ESIA, stakeholders were identified in relation with the cultural sites inventoried within the study area. In 2021, only one archeological site is expected to be impacted by the project. At the ESIA stage, concerns were raised during stakeholders' consultations about the importance of protecting artefacts, fossils or graves that could be found in the northern and Muchinga provinces. Those concerns were assessed in the ESIA. The National Heritage Conservation Commission (NHCC) was consulted at the ESIA stage.	– Ensure covering heritage aspects in any complementary stakeholder engagement to be completed in the course of the ESIA update.
Cultural Heritage Management Plan	The Borrower will develop a Cultural Heritage Management Plan if adverse impact on cultural heritage is expected, including a chance finds procedure to be followed if previously unknown cultural heritage is encountered during project activities. It will set out hos chance finds associate with the project will be manage and will include a requirement to notify relevant authorities. The chance finds procedure will be implemented during project activities such as excavations, demolition, movement of earth, flooding and other changes in the physical environment.	No cultural Heritage Management Plan was developed until today. However, mitigation measures for cultural and heritage sites will be developed as part of the NHCC Mwela Rock Art Site assessment. A chance find procedures should be developed (prior to construction) and implemented (during construction). Chance finds procedures are regulated in Zambia and include the obligation of reporting any findings to relevant authorities (NHCC) for assessment of the situation and recommendation on development.	– Ensure the inclusion of a Cultural Heritage Management Plan in the ESMP which includes minimally a chance finding procedure.
ESS9: Financial Intermediaries (FI)			
N/A			
ESS10: Stakeholder Engagement and Information Disclosure			
Stakeholder identification and analysis	The Borrower will identify the different stakeholders, both project-affected parties and other interested parties. Individuals or groups that are affected or likely to be affected by the project will be identified as 'project affected parties' and other individuals or groups that may have an interest in the project will be identified as 'other interested parties'. The Borrower will identify those project-affected parties (individuals or groups) who, because of their particular circumstances, may be disadvantaged or vulnerable.	Stakeholders' groups engaged in the development of the ESIA and RAP are described in the ESIA2021 (e.g., ministries, local authorities, project affected communities, NGOS, etc.). However, they are not specifically identified as requested by the ESS10.	– Update the stakeholder's list and conduct section specific stakeholder engagement in the areas where the project has underwent alignment modifications.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Stakeholder Engagement Plan	The Borrower will develop and implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts. A draft of the SEP will be disclosed as early as possible, and before project appraisal. The Borrower will seek the views of stakeholders on the SEP, including on the identification of stakeholders and the proposals for future engagement. The SEP will describe the timing and methods of engagement with stakeholders throughout the life cycle of the project, the range and timing of information to be communicated as well as the type of information to be sought from them. The SEP will describe the measures that will be used to remove obstacles to participation, and how the views of differently affected groups will be captured. Where applicable, the SEP will include differentiated measures to allow the effective participation of those identified as disadvantaged or vulnerable.	A framework for the SEP during implementation phase is presented in chapter 4 of the ESMP2021. However, it needs to be completed and adapted by relevant authorities to become operational. The framework provides room for adaptations based on stakeholders' discussions. It is mentioned that the SEP for project preparation and construction needs to reflect World Bank requirements (identify stakeholders, planning engagement with consideration for vulnerable groups, provide strategy for disclosure of information). The official SEP has not yet been generated.	– Update the proposed SEP presented in the ESMP to include any additional actions or the results of the complementary stakeholder engagements completed during the update of the ESIA.
Information disclosure	The Borrower will disclose project information as early as possible to allow stakeholders to understand the risks and impacts of the project, and potential opportunities. The information disclosed will include: – The purpose, nature and scale of the project; – The duration of proposed project activities; – Potential risks and impacts of the project on local communities, and the proposals for mitigating these; – The proposed stakeholder engagement process; – The time and venue of any proposed public consultation meetings; – The process and means by which grievances can be raised and will be addressed. The information will be disclosed in relevant local languages and in a manner that is accessible and culturally appropriate, taking into account any specific needs of groups that may be differentially or disproportionally affected by the projects.	It is mentioned that the SEP shall provide a strategy for disclosure of information in accordance with the World Bank requirement as mentioned in the ESS8 and that information will be provided in a transparent, accessible, understandable and culturally appropriate format. The official SEP has not yet been generated.	– Update the proposed SEP presented in the ESMP to include any additional actions or the results of the complementary stakeholder engagements completed during the update of the ESIA.

Themes	World Bank environmental and social standards	Findings and comments	Actions to fill the gap
Meaningful consultation	The Borrower will undertake a process of meaningful consultation in a manner that provides stakeholders with opportunities to express their views on project risks, impacts, and mitigation measures, and allows the Borrower to consider and respond to them. Meaningful consultation is a two-way process that: – Begins early in the project planning process to gather initial views on the project proposal and inform project design; – Encourages stakeholders feedback, particularly as a way of informing project design; – Continues on an ongoing basis; – Is based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful, and easily accessible information in a timeframe that enable meaningful consultations with stakeholders in a culturally appropriate format, in relevant local languages; – Considers and responds to feedback; – Supports active and inclusive engagement; – Is free of external manipulation, interference, coercion, discrimination, and intimidation; and – Is documented and disclosed by the Borrower.	Project Affected People (PAP) and relevant stakeholders were consulted to identify environmental and social issues and concerns prior to the ESIA. Impacts assessment considered the results of stakeholder's consultation. The SEP framework presented in the ESMP mentioned that meaningful consultations will be undertake in accordance with the world bank requirements. The official SEP has not yet been generated.	– Update the proposed SEP presented in the ESMP to include any additional actions or the results of the complementary stakeholder engagements completed during the update of the ESIA.
Grievance mechanism	Concerns and grievances of project-affected parties related to the environmental and social performance of the project will be addressed through a grievance mechanism that will be proportionate to the potential risks and impacts of the project. The grievance mechanism is expected to address concerns promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all project-affected parties, at no cost and without retribution. The mechanism, process or procedure will not prevent access to judicial or administrative remedies. The Borrower will inform the project-affected parties about the grievance process during community engagement activities and will make publicly available a record documenting the responses to all grievances received. The mechanism will also allow for anonymous complaints to be raised and addressed.	A grievances redress mechanism (GRM) framework is presented in the ESMP. The framework provided shows sufficient detail to allow for measures to be covenanted in the contract agreement. The objective of the GRM is to ensure grievances from communities and external stakeholders are responded to and managed appropriately The GRM framework is designed to be accessible as the focal point should be a respected representative of the project area and it should be close to the community.	– N/A

APPENDIX

2-4 RESULTS OF GAP ANALYSIS WITH MOE SOCIAL SAFEGUARDS

Appendix 2-4 Compliance with Social Safeguard Standards from the MoE

National Social Safeguard Standards requirements	Do the ESIA and ESMP comply with the SSF? Findings and comments	Proposed actions to fill the gap
Social Safeguard Standard 1: Labour and Working Conditions		
The Developer should • promote fair treatment, decent working conditions and the health and well-being of workers • prevent the use of all forms of forced labour and child labour. • support the principles of freedom of association and collective bargaining of project workers • provide project workers with accessible means to raise workplace concerns.	The risk of non-adherence to labour standards is highlighted is the ESIA and the ESMP includes measures related to working conditions. However, ensuring principles of freedom of association and collective bargaining of project workers is not mentioned despite that the construction sector ranks near the bottom of all employment sectors in terms of unionized employees. The gender specific aspects of PPE are also absent. The ESMP highlight how “special selection criteria” should be used in order to eliminate bidders with a poor track record in health & safety, environment, and social and gender (incl GBV/SEAH). This is mainly based on self-assessment which can be difficult to verify and might therefore not be very effective.	Integrate requirements related to freedom of association and collective bargaining in the ESMP update and development of the Worker and Labor management Plan. The Worker and Labor Management Plan should ensure compliance in respect to Workers Compensation Fund Control Board (WCFCB), the National Health Insurance Management Authority (NHIMA) and the National Pension Scheme Authority (NAPSA). Ensure that a Letter of Clearance from Ministry of Labour and Social Security (MLSS) is included in the evaluation and qualification criteria of the procurement documents and consider additional verification methods of HSESG performance. Ensure that the PPE requirements in the Occupational Health, Safety and Security Management Plan to be developed, include an obligation to provide PPE suitable for female workers (diverse range of body shapes and sizes).
Social Safeguard Standard 2: Non-discrimination and Equal Opportunity		
The Developer should • promote the fair treatment, non-discrimination, and equal opportunity of project workers. • create employment opportunities for Zambians and targeted citizens. • ensure that recruitment practices are transparent and free from corruption and political • interference. • create a conducive work environment free from sexism, gender bias and harassment, • ensure that policies and practices respond to the needs of different groups in the workplace.	The ESIA captures concerns raised by women during public consultations regarding gender discrimination in employment and their wish to have equal chances of finding a job during construction. However, detailed impact description and proposed mitigation measures are only superficially addressed. During pre-construction and construction, the phase for which most employment opportunities will be created, the proposed mitigation measure is to “encourage” recruitment of female workers. During the operation phase there will be a target of 30% female workers. The ESMP is silent on employment of other groups such as youth and persons with disabilities and how to ensure that the workplace is inclusive and accommodates different needs.	Update the ESMP and the Worker and Labor Management Plan to include employment quotas for targeted citizens (women, youth and PWD) as per SSS1. Participation of targeted citizens is also expressed in the Citizen Economic Empowerment Act and the Persons with Disabilities Act. *Employment quotas:* • At least 30% of the total workforce will be women • At least 30% of the total workforce will be youth (persons aged 19 to 35 years) • At least 5% of the total workforce will be PWD Other measures to support the recruitment of these groups, to be incorporated in the ESMP and the Worker and Labor Management Plan, is to assist the contractor in identifying targeted citizens for skilled positons through engagement with NGOs, universities and training institutions, and industry associations as part of stakeholder engagement.

Social Safeguard Standard 3: SEAH		
The Developer should • identify risk of SEAH and undertake measures to prevent or minimise harm. • be survivor-centred and evidence-based in SEAH mitigation and response. • build on local knowledge and structures in identifying local-level risks and measures.	The ESIA and ESMP includes a detailed GBV Framework based on the World Bank Good Practice Note on GBV and public consultations. Since the SSS3 is informed by the same GPN (although the updated version from 2022), the ESIA and ESMP comply in large with the SSS3 requirements. Only minor changes are expected, such as updating the GBV Framework to reflect recent developments in Zambia such as the more active role of traditional leaders in combating GBV and the work done by Gender Division in identifying GBV service providers. It should be noted that the ESIA and ESMP calls for caution in involving traditional leaders (due to the risk of GBV cases by-passing statutory law). The ESMP GBV Action Plan Framework also provides detailed guidance on the different sections that should be included in the Code of Conduct which largely aligns with the SSS3 CoC, except that key definitions related to GBV and SEAH are missing.	Update the Code of Conduct as per SSS3. Define key terms such as sexual exploitation, and sexual harassment and clarify that the CoC also applies outside working hours. Further, as part of the SEAH Action Plan and CoC, include definition and management of inappropriate relationships (where one party has real or perceived influence over the other's condition of employment). The ESMP and Gender Action Plan should also incorporate measures from the SSS3 on how to identify GBV service providers in each district, using the GRZ's GBV Dashboard and how to engage with traditional leaders as per the Traditional Leaders Engagement Strategy on GBV https://www.gender.gov.zm/?page_id=1616 https://pdf.usaid.gov/pdf_docs/PA00SX81.pdf
Social Safeguard Standard 4: Community Protection and Empowerment		
The Developer should • increase sustainability and maximize the positive impact of the project on local businesses in the project affected communities. • anticipate and avoid adverse impacts on the health and safety of project-affected communities • prevent social conflict, violation of social norms, and the undermining of trust in traditional leaders and institutions. • avoid or minimize community exposure to HIV/AIDS and other diseases, and to prevent • increased use of alcohol and drugs. • prevent negative impacts on women and girls' sexual and reproductive health and rights, such as unwanted or unsupported pregnancies and unsafe abortions. • avoid school dropout and child labour.	The ESIA and ESMP captures the risks and mitigation measures related to the safety of the community and is largely compliant with the SSS4. The area that could be stronger emphasized in the ESIA and ESMP is how to promote local content opportunities. According to SSS4, the Developer should identify goods and services which could be provided by the community, including women, youth and PWD. The ESMP includes a HIV/AIDS awareness programme on HIV/AIDS and STDs. The SSS4 also includes an awareness programme but it is broader, including other social issues that may affect the community.	In line with the World Bank requirements, include in the updated ESMP, the production of a Community Health and Safety Management Plan. Ensure that the measures highlighted in the SSS3 are incorporated in this plan. Further, the possibility of including local content requirements should be considered when developing the bidding documents. Rather than having an awareness programme which is limited to HIV/AIDS and STD (as proposed in the ESMP), consider to make broader to include other social issues. As proposed in the SSS4, establish a Workplace and Community Health Programme focused on project-related communicable diseases (e.g. HIV/AIDS and STDs) as well as SEAH and the CoC, Sexual and Reproductive Health and Rights (SRHR), and alcohol abuse. This programme may also include training in financial literacy and joint decision making in households, and encourage workers to form saving groups among themselves or in the community. (Rationale: higher disposable income can lead to increased alcohol consumption, risky sexual behaviours and GBV in the households). The SSF provides detailed guidance on training and capacity building in the workplace and community beyond the Workplace and Community Health Programme (see table 5 on page 32).

Social Safeguard Standard 5: Resettlement		
The Developers should • avoid forced eviction and minimise involuntary resettlement by exploring project design alternatives • mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions • ensure that resettlement schemes are economically productive, socially secure and environmentally sustainable for persons settled voluntarily or involuntarily. • improve living conditions of persons who are physically displaced, through provision of • adequate housing, access to services and facilities, and security of tenure. • ensure that the perspectives of women, youth and PWD are obtained and their interests • factored into all aspects of resettlement planning and implementation. • ensure that resettlement is planned and implemented after appropriate disclosure of • information, meaningful consultation, and the informed participation of those affected.	Please refer to the detailed findings and comments captured in Table 5.2 above. At large, the RAP is in compliance with the SSS5. However, further clarification is needed on the measures put in place to address women's concerns raised in the consultation meetings (e.g.husbands running away with money if paid in cash). According to the ESMP GBV Action Plan, ZESCO is responsible for compensation payment and shall, according to its internal procedure on resettlement, ensure women are involved in compensation negotiations and sign-offs. However, ZESCO's Consent for Compensation/ Disclosure form, included in the RAP (Figure 8.1), does not seem to reflect this since there is only provision for one person to sign. According to SSS4, documentation of ownership or occupancy and compensation payments should be issued in the names of both spouses or single heads of households as relevant. Further, the launch of resettlement and compensation processes, can lead to GBV by increasing conflicts in households and communities. It can trigger a sense of urgency and prompt people to alter land boundaries, engage in property grabbing, and exclude people from accessing land. This risk, which may happen after the completion of the resettlement is completed, is not detailed in the ESIA and ESMP. The ESMP, ESIA and RAP is also silent on how resettlement may affect women in polygamous marriages different from monogamous marriages	Clarify with ZESCO how the Compensation/Disclosure form, included in the RAP (Figure 8.1) has been administered and to what extend women have been involved. Update the ESMP Gender Acton Plan to include additional risks associated with the launching of resettlement and compensation processes and the specific risks for women in polygamous marriages.
Social Safeguard Standard 6: Stakeholder Engagement		
The Developers should: • establish a systematic and inclusive approach to stakeholder engagement throughout the project life cycle. • take stakeholders' views on issues that could potentially affect them into account in project • design and social and gender performance. • involve stakeholders in the community in championing the participation of women, youth and • PWD and supporting the monitoring of the project. • ensure that appropriate project information is disclosed to stakeholders in a timely, • understandable and accessible manner.	As identified in the gap analysis in table 5.2, stakeholders' groups engaged in the development of the ESIA and RAP are described in the ESIA2021 (e.g., ministries, local authorities, project affected communities, NGOs, etc.). However, they are not specifically identified, which is a requirement in ESS10 as well as SSS6. A list of potential stakeholders is provided in Appendix I of the SSF. The framework for the Stakeholder Engagement Plan is presented in chapter 4 of the ESMP2021. However, it needs to be completed and adapted by relevant authorities to become operational. Further, the SEP needs to provide more details on the engagement with women and vulnerable groups. According to the SSS6, separate consultations should be conducted with women, youth and PWD and other groups identified as vulnerable to capture suggestions and concerns. This was done as part of the ESIA, and should continue during the construction and operation phase.	Update the stakeholder's list and conduct section specific stakeholder engagement in the areas where the project has underwent alignment modifications. Ensure that separate consultations with women and vulnerable groups are conducted as per SSS6. Update the proposed SEP presented in the ESMP. The SSS6 refers to the Word Bank Template for the development of the SEP which provides detailed guidance.It is also recommended that the Gender Guidelines for Traditional Leaders, adopted by House of Chief in 2021, are used when updating the SEP. This will facilitate constructive stakeholder engagement with traditional leaders related to the social and gender risks of the project as well as the importance of promoting the participation of women and other targeted citizens in employment. https://www.land-links.org/wp-content/uploads/2021/12/Gender-Guildlines-Print-version-1.pdf https://pubdocs.worldbank.org/en/909361530209278896/ESF-Template-ESS10-SEP-June-2018.pdf

APPENDIX

3-1 *ZTIP PENSULO - NAKONDE CORNER POINTS COORDINATES*

SC 330kV Pensulo - Mpika WGS 1984 ZONE 36				
Structure Number	X Easting (m)	Y Northing (m)	Centerline Z Elevation (m)	Line Angle (deg)
PM-001	222321.22	8558075.99	1563.59	7.71
PM-003	222529.37	8558325.47	1564.96	39.22
PM-004	222895.21	8558396.22	1565.30	37.90
PM-018	228004.02	8555798.43	1599.44	-56.54
PM-020	228516.94	8556089.66	1608.60	65.57
PM-027	230842.63	8554400.88	1587.64	-35.70
PM-053	241018.79	8554349.65	1639.83	-76.93
PM-082	243645.07	8565405.94	1563.16	31.13
PM-132	257656.68	8579666.52	1560.48	-2.03
PM-142	260372.53	8582633.54	1538.04	3.39
PM-157	264663.64	8586797.76	1500.78	-1.37
PM-210	279600.53	8602001.56	1520.91	15.23
PM-211	279887.98	8602169.37	1529.08	-41.57
PM-217	280528.29	8604122.01	1530.56	-0.05
PM-226	281613.78	8607441.77	1498.50	-0.05
PM-234	282589.62	8610435.33	1462.06	-0.07
PM-238	283072.66	8611922.90	1466.70	-0.02
PM-241	283400.16	8612932.55	1488.63	-0.08
PM-255	285144.68	8618335.88	1495.95	0.01
PM-266	286493.13	8622510.67	1464.73	0.01
PM-274	287442.77	8625449.13	1443.08	-0.02
PM-285	288779.47	8629589.18	1458.21	-0.04
PM-291	289509.54	8631855.80	1430.20	-0.03
PM-295	290025.51	8633460.10	1437.15	-0.01
PM-305	291153.90	8636970.14	1491.48	27.34
PM-315	293917.00	8639718.00	1469.17	-46.60
PM-324	293824.96	8643376.02	1442.08	27.39
PM-338	296396.02	8648659.20	1418.67	-0.08
PM-353	298971.94	8653971.11	1379.50	-0.02
PM-366	301045.67	8658250.86	1360.66	-0.09
PM-377	302729.53	8661740.63	1351.84	54.77
PM-399	311441.71	8663193.92	1397.96	-40.07
PM-405	312961.41	8664976.05	1395.06	0.18
PM-415	315602.37	8668053.28	1375.20	-0.87
PM-424	317721.18	8670599.52	1393.47	0.22
PM-435	320391.87	8673784.30	1379.18	-13.95
PM-443	321828.72	8676726.58	1397.79	-0.01
PM-457	324179.12	8681540.89	1339.58	0.09
PM-461	324782.57	8682772.00	1368.15	0.04
PM-470	326388.71	8686043.01	1343.74	-28.96
PM-472	326357.26	8686684.65	1366.07	-22.30
PM-473	326291.63	8686824.74	1365.93	54.27
PM-474	326425.24	8687064.13	1369.31	83.23

SC 330kV Mpika - Kasama WGS 1984 ZONE 36				
Structure Number	**X Easting (m)**	**Y Northing (m)**	**Centerline Z Elevation (m)**	**Line Angle (deg)**
MK-001	326464.46	8687118.68	1370.36	-29.74
MK-008	323987.97	8687030.01	1332.90	44.57
MK-012	322822.63	8688098.62	1329.87	27.69
MK-093	311809.96	8718710.40	1336.24	1.03
MK-106	310140.70	8723626.75	1314.92	5.01
MK-197	301447.15	8759160.17	1330.31	-18.24
MK-267	287153.59	8782043.24	1228.47	67.35
MK-296	293548.00	8791053.00	1204.73	-55.76
MK-304	292520.99	8793815.09	1242.98	34.11
MK-335	295344.58	8805387.20	1240.45	-13.85
MK-347	295333.32	8810124.91	1215.69	19.61
MK-354	296296.06	8812847.38	1221.31	21.86
MK-367	299493.68	8816482.61	1224.60	-25.53
MK-383	301224.00	8822595.00	1236.27	-5.26
MK-399	302379.00	8828799.00	1235.73	-0.02
MK-405	302808.98	8831112.54	1235.93	-59.43
MK-408	302024.95	8831796.35	1231.98	50.29
MK-421	302146.39	8836817.02	1239.09	-6.95
MK-448	301158.25	8846966.58	1239.60	10.13
MK-450	301207.34	8847580.33	1246.88	-58.17
MK-451	301019.27	8847718.98	1244.67	44.83
MK-475	299559.00	8857178.00	1266.27	65.68
MK-483	301945.87	8858733.87	1264.87	-52.62
MK-497	302354.45	8864189.95	1288.73	-49.58
MK-509	298434.17	8868069.42	1324.40	26.69
MK-510	298322.95	8868399.66	1326.76	6.36

SC 330kV Kasama - Nakonde Arc 1950 Zambia				
Corner Number	**X**	**Y**	**H**	**Corner**
XKN2/ZTKN1	8869046.29	298122.59	1325.35	-55.54
XKN3/ZTKN2	8869148.46	298208.01	1327.36	-33.53
XKN4/ZTKN3	8869197.99	298378.39	1328.93	-89.60
XKN5/ZTKN1	8868458.08	298593.54	1320.54	28.60
KN6/TKN17	8864069.05	303014.80	1293.82	62.40
KN7/TKN22	8864643.70	304795.35	1308.67	57.51
KN8/TKN37	8870654.42	306322.80	1378.73	-40.05
KN9/TKN53	8874184.38	311244.31	1378.89	5.58
KN9+1/TKN172	8907212.15	348422.13	1266.09	-13.07
KN9+2/TKN177	8908186.28	350216.47	1271.43	33.24
KN9+3/TKN181	8909365.28	350845.80	1261.66	-20.17
KN9+4/TKN196	8913446.14	355439.44	1255.34	44.12
KN9+5/TKN202	8915836.06	355614.03	1229.19	-65.03
KN10/TKN214	8917499.48	360002.10	1257.02	17.05
KN11/TKN259	8928890.94	374658.92	1284.54	63.38
KN12/TKN264	8930985.39	374232.93	1286.17	-75.11
KN13/TKN295	8936447.26	385282.50	1330.62	45.28
KN14/TKN336	8952616.84	390609.36	1323.67	-55.17
KN14+1/TKN339	8952932.77	391677.60	1302.14	43.18
KN14+2/TKN343	8954160.13	392392.51	1286.13	-62.50
KN14+3/TKN351	8954001.18	395365.21	1282.34	19.14
KN15/TKN394	8958928.10	412345.86	1272.03	-0.12
KN15+1/TKN411	8960799.82	418881.11	1241.59	37.17
KN15+2/TKN430	8966865.69	423407.49	1262.58	-24.38
KN15+3/TKN452	8971195.24	431339.22	1271.54	-25.18
KN15+4/TKN474	8971710.45	440201.60	1315.26	-41.21
KN15+5/TKN506	8963650.38	450505.15	1331.10	42.17
KN15+6/TKN514	8963884.99	453664.45	1393.08	0.32
KN15+7/TKN521	8964116.67	456432.66	1468.88	-4.47

DC 330kV Nakonde - Border Arc 1950 Zambia				
Structure Number	**X Easting (m)**	**Y Northing (m)**	**Centerline Z Elevation (m)**	**Line Angle (deg)**
ZT2/NT3	456432.658	8964190.235	1465.6916	-61.124
ZT3/NT4	456225.892	8964566.532	1466.858	-27.2839
ZT4/NT7	456204.132	8965520.307	1473.565	17.4518
ZT5/NT17	454985.759	8969046.521	1465.46	-12.422
ZT6/NT23	454708.515	8971535.73	1458.79	-36.2102
ZT7/NT33	456849.527	8975244.528	1544.515	-8.4137
ZT8/NT36	8976129.135	457558.413	1553.547	14.2929
CB1/NT38	457869.058	8976819.484	1594.045	

132 (66)kV Nakonde - Isoka Arc 1950 Zambia				
NO.	**X**	**Y**	**H**	**Line Angle (deg)**
KN15/KIN2	8964094.39	456783.24	1485.44	20.4651
KN16/ KIN8	8964266.68	458781.79	1500.33	-0.37
KN17/KIN35	8964898.07	467168.58	1621.78	61.48
NI2/KIN37	8964375.20	467501.72	1608.78	37.43
NI3/KIN41	8963958.53	468660.71	1585.10	30.46
NI4/KIN42	8963981.65	468779.68	1588.30	

PROPOSED NEW NAKONDE SUBSTATION COORDINATES: Arc 1950

ID	Northings	Eastings	Elevation
A	8964263.9	456428.671	1461.727
B	8964277.768	456928.973	1488.998
C	8963280.874	456849.28	1451.237
D	8963266.984	456349.001	1434.222

KASAMA SUBSTATION BOUNDARY COORDINATES Arc 1950 Zambia

ID	Northings	Eastings
A	8869099.296	297932.644
B	8869297.917	298266.043
C	8868682.105	298004.282
D	8868818.008	298403.921

MPIKA SUBSTATION BOUNDARY COORDINATES ARC 1950

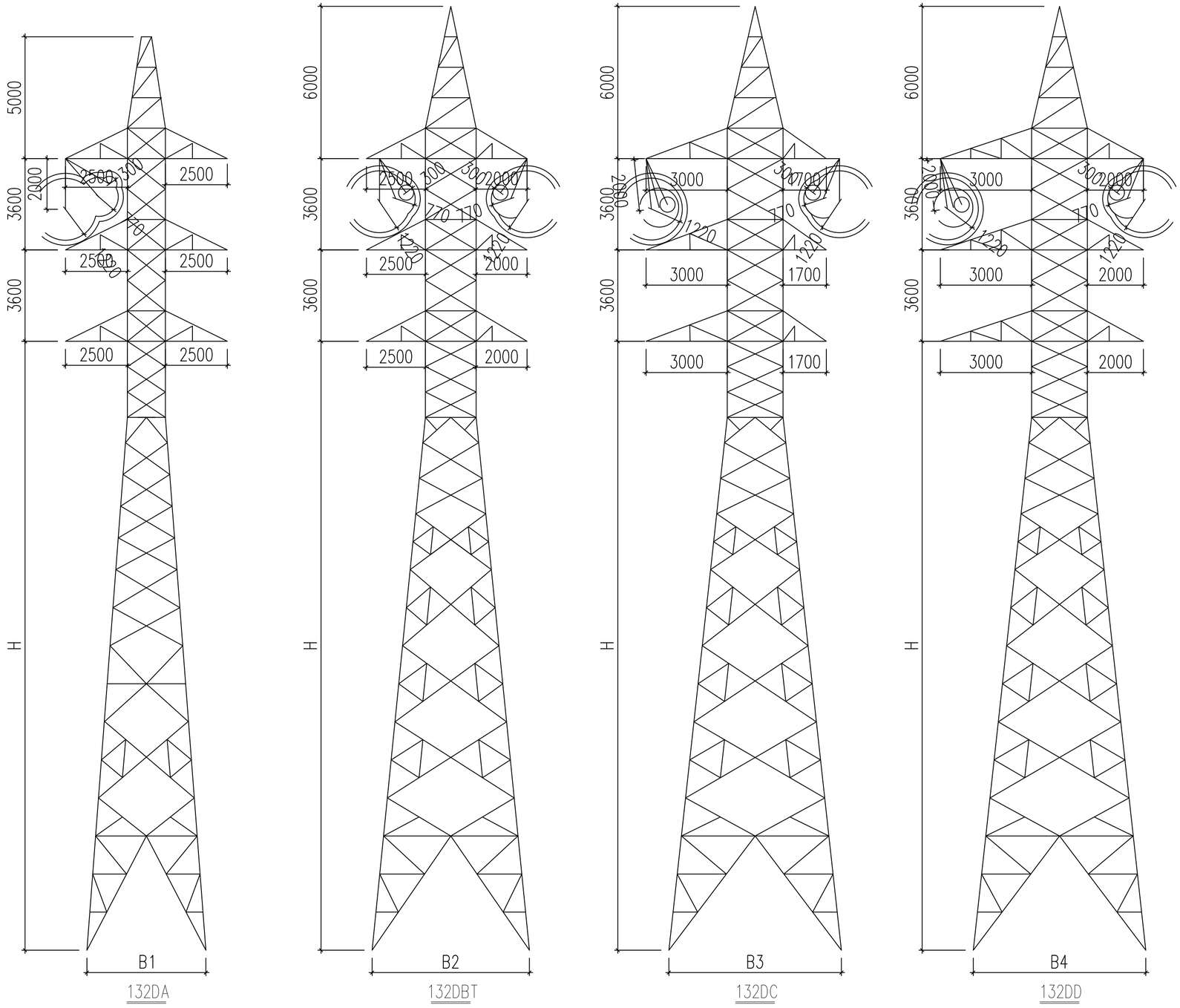
ID	Northings	Eastings
A	8687548.02	326639.007
B	8687377.082	327000.591
C	8686917.459	326783.232
D	8687088.28	326421.638

PENSULO SUBSTATION BOUNDARY COORDINATES WGS 1984 ZONE 36L

ID	Northings	Eastings
A	8558122	222251
B	8557945	222120
C	8557743	222396
D	8557916	222524

APPENDIX

3-2 CONCEPTUAL DESIGN DRAWINGS



Note: The controlled dimensions are determined according to the bidding documents, shield angle and electric clearance; the dimensions in the brackets and member arrangement will be optimized in the period of working drawing design.

GROUNDING HOLES

Designation & Uses of Towers					
Tower Type	Tower Name	Height Rang (m)	Wind Span (m)	Weight Span (m)	Deviation Angle (°)
Suspension Tower	132DA	18~27	360	450	0°
Tension Tower	132DBT	18~24	350	450	0° ~30°
	132DC	18~24	350	450	30° ~60°
Tension tower/ dead end tower	132DD	18~30	350	450	60°~90°/ 0~90°DE

EMPLOYER: ZESCO LIMITED

CONTRACTOR: TBEA CO., LTD

REV.	DATE	NOTES
0		First issue for approval

☐ APPROVED ☐ APPROVED AS CORRECTED STAMP(EMPLOYER):
☐ REVISED AND RESUBMIT ☐ NOT APPROVED
DATE: ..... SIGNATURE: .....

PROJECT NAME: KASAMA–NAKONDE, KASAMA–MPOROKOSO AND KASAMA–KAYAMBI TRANSMISSION LINES AND SUBSTATIONS

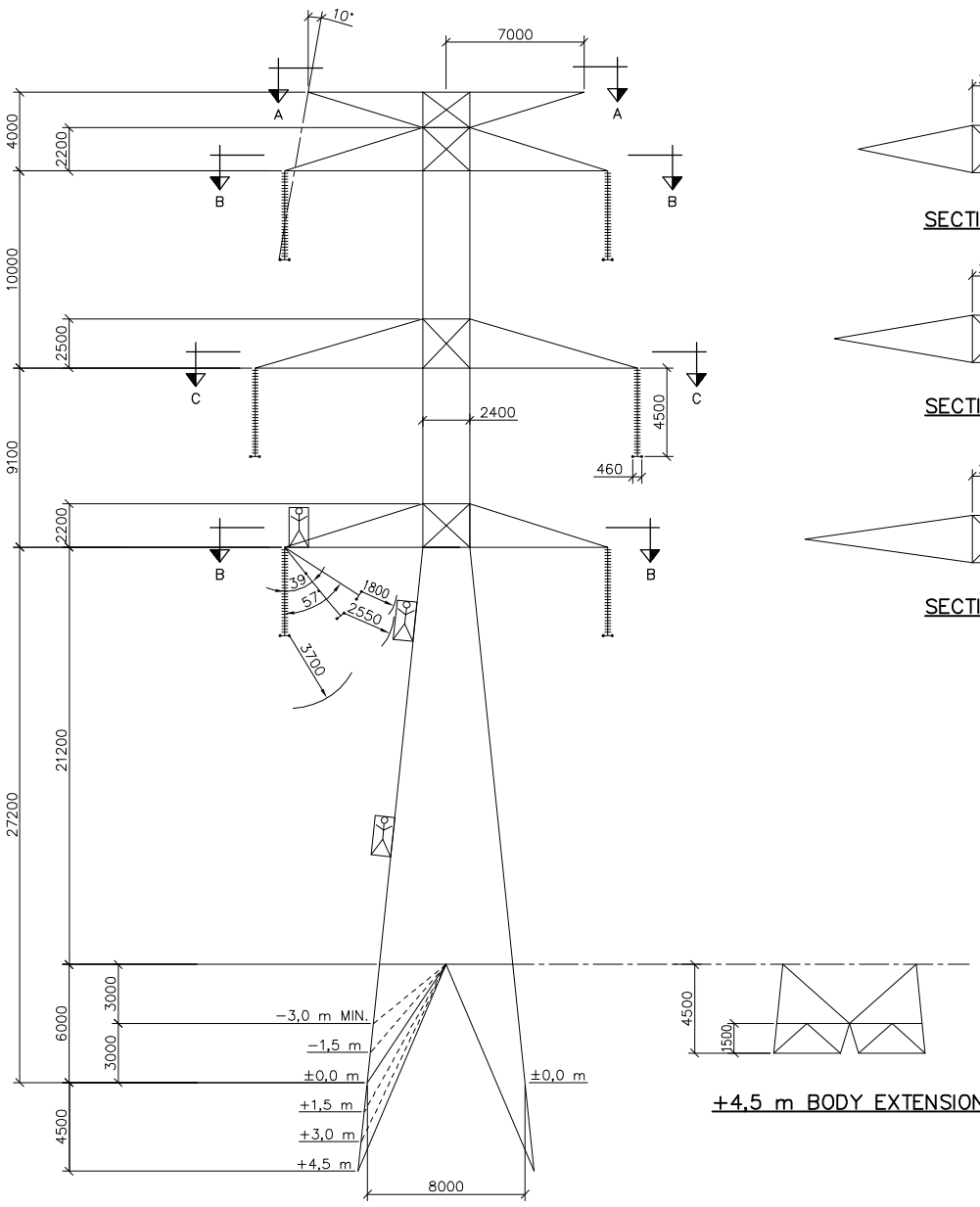
NAKONDE STEP DOWN / ISOKA–NAKONDE 132–66kV LINE PROJECT

DOC. STATUS: FILE FOR APPROVAL ☐ INTERMEDIATE FILE ☐ PRELIMINARY DESIGN ☑ WORKING DRAWING ☐ AS BUILD

DESIGNED
CHECKED
REVIEWED
APPROVED

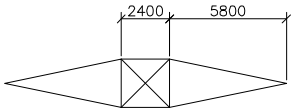
TITLE: TOWER GENERAL DRAWINGS

DATE 14/05/2019 SCALE DRWG No. S0544C–A01–09

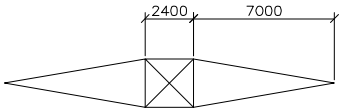


TRANSVERSE FACE

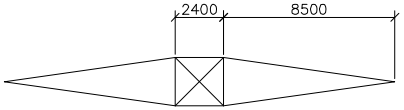
+4.5 m BODY EXTENSION



SECTION A–A



SECTION B–B



SECTION C–C

NOTES:

1: ALL DIMENTIONS SHOWN ARE IN MILLIMETERS.
2: ALL DIMENSIONS ARE TYPICAL. FINAL DIMENSIONS SHALL BE DETERMIND BY TENDERERS FOLLOWING THE REQUIREMENTS OF THE TECHNICAL SPECIFICATION.
3: MINIMUM APPROACH DISTANCE UNDER LIVE WORKING = 2.9 m

THIS DRAWING SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. IT IS FOR GUIDANCE ONLY AS TO THE SCOPE OF WORK INVOLVED.

SCALE 1:250

0 2 4 6 8 10 12 m

FEASIBILITY STUDY, CONCEPTUAL DESIGN AND TENDER DOCUMENTS OF TANZANIA-ZAMBIA POWER INTERCONNECTION STUDY

FEASIBILITY DESIGN REPORT
TANZANIA-ZAMBIA INTERCONNECTION PROJECT

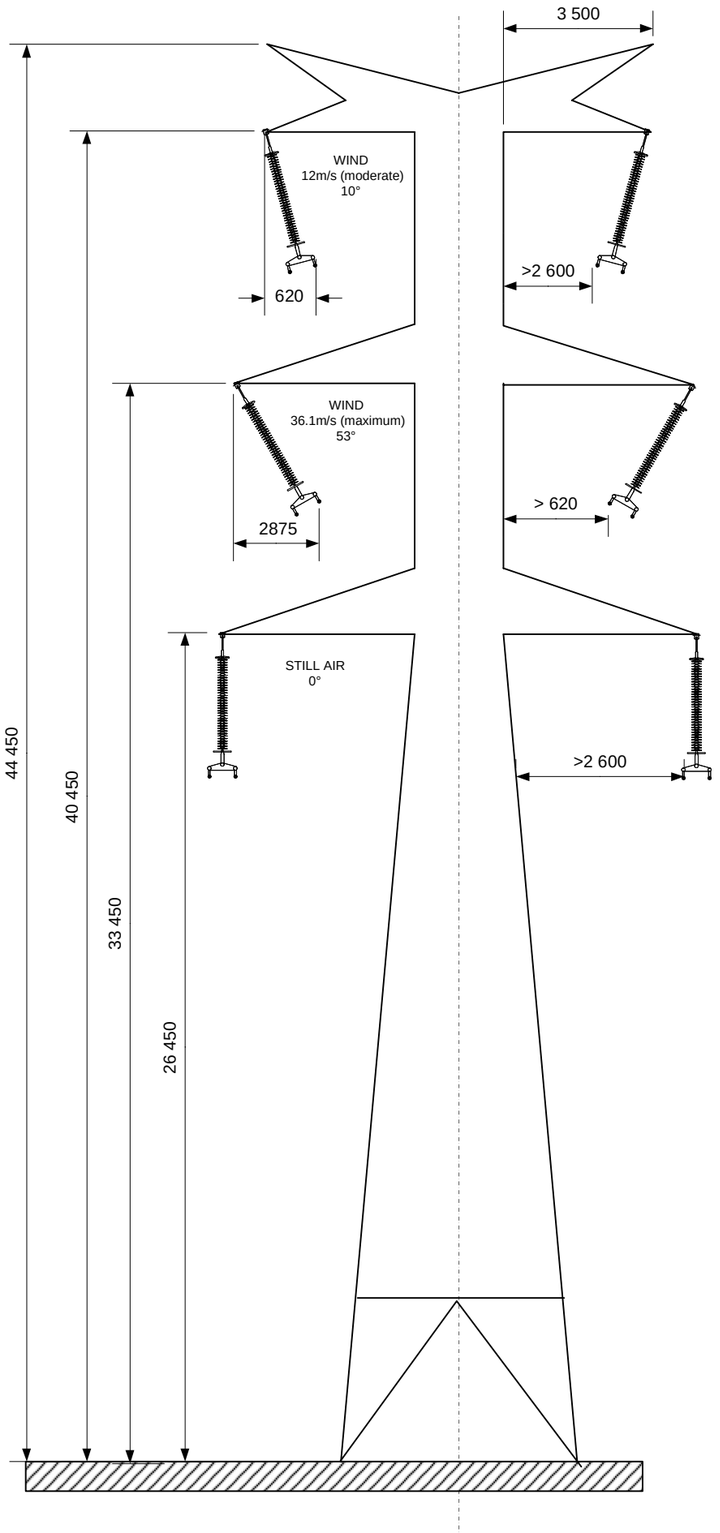
400 kV - DOUBLE CIRCUIT
SUSPENSION TYPE (0°- 2°)
TOWER OUTLINE

AECOM

Date : Juin 2017
Drawing No: 60309266-LINE-200
Rev. A

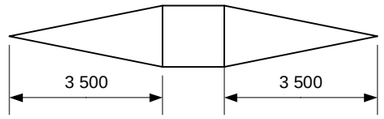
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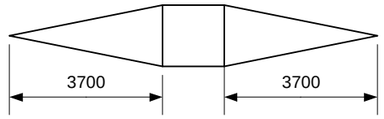


Conductor	ACSR Bluejay
Voltage	330 kV
Clearance to Ground	8.1 m
Basic Span	375 m
Max Sag	14.75 m
String length	3.60 m

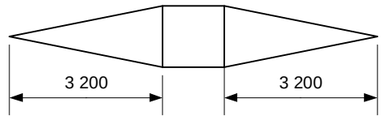
UPPER CROSSARM



MIDDLE CROSSARM



BOTTOM CROSSARM



330kV D/C Suspension
Tower 0° - 2°(A3)

ZAMBIA TANZANIA INTERCONNECTOR
330kV Overhead Line
Kasama-Nakonde

TITLE:

DOUBLE CIRCUIT TOWER OUTLINE

Drawn:	MA
Checked:	MS
Approved:	DM
Date:	12/2020

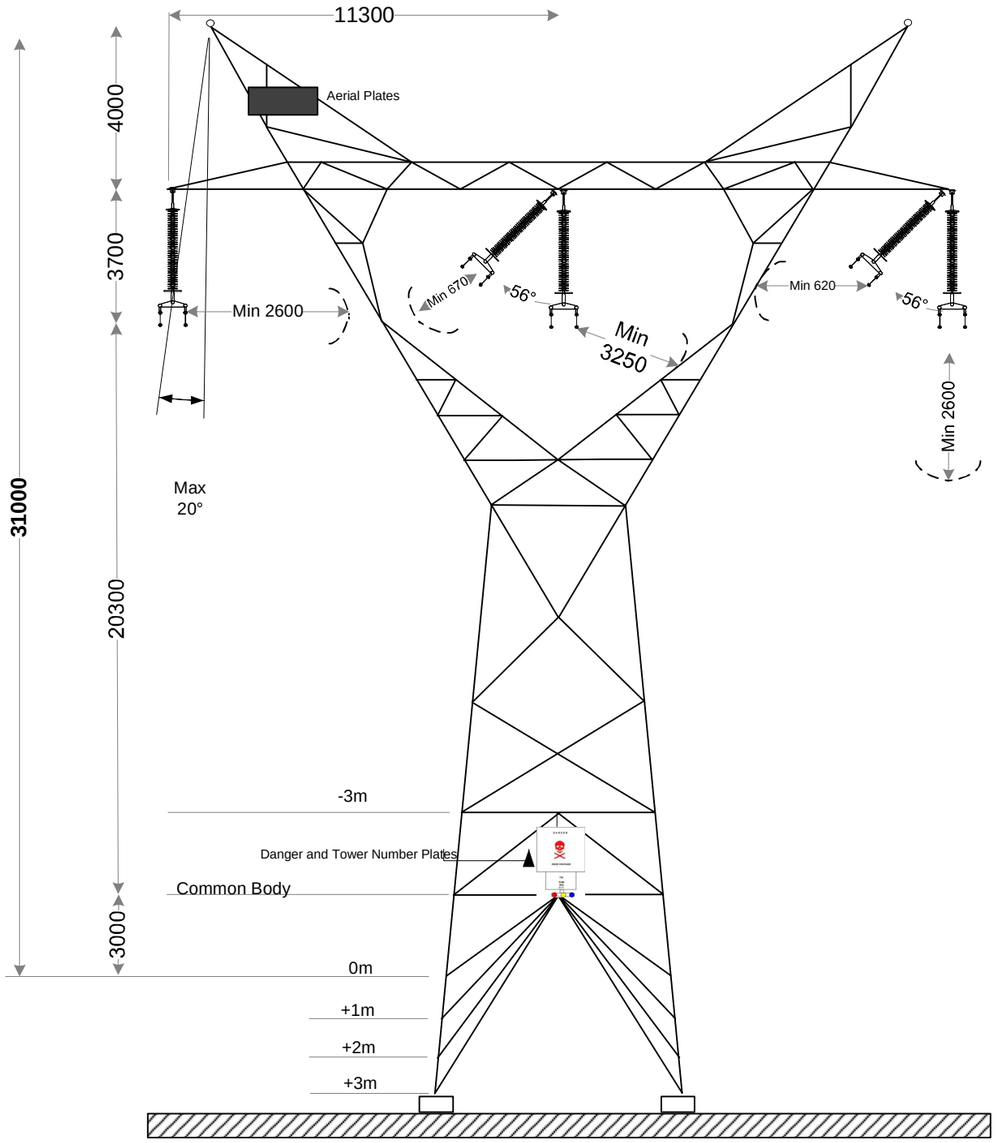
Drawing No.

XXXX

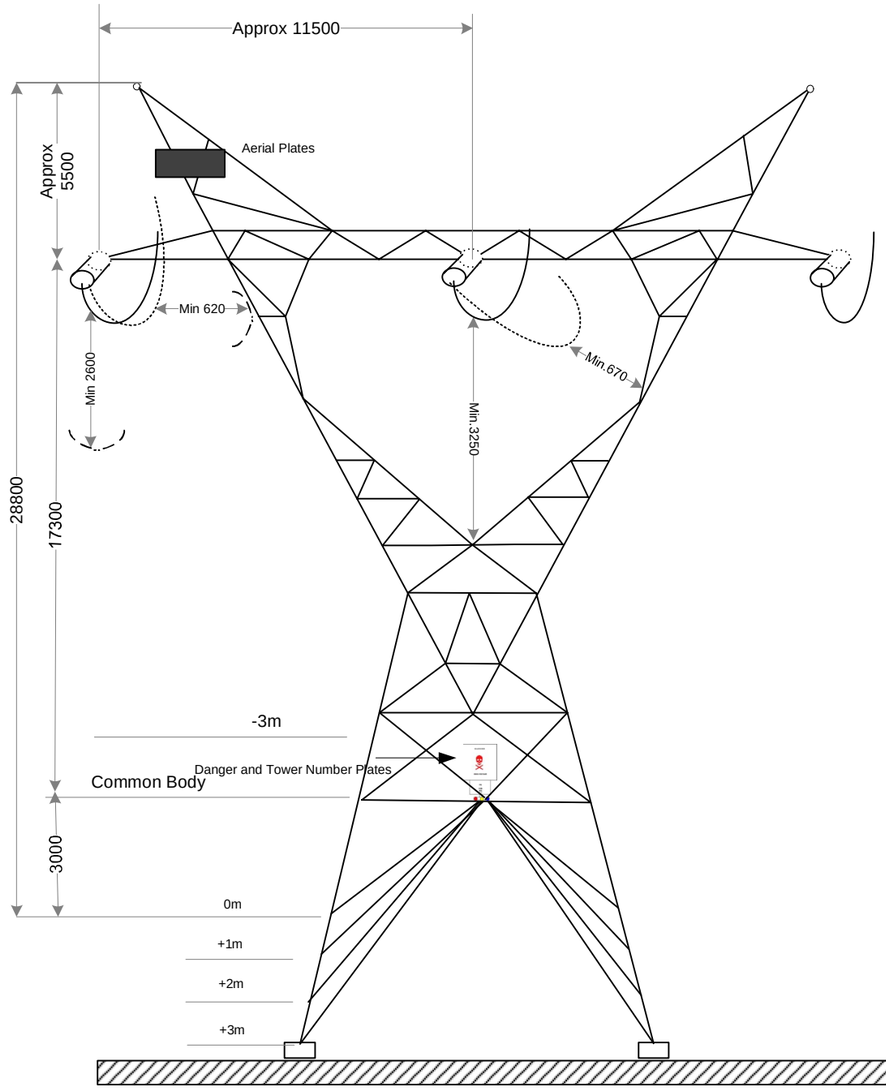
ZESCO

A3

330kV S/C Suspension Tower 0° - 2°(A3)



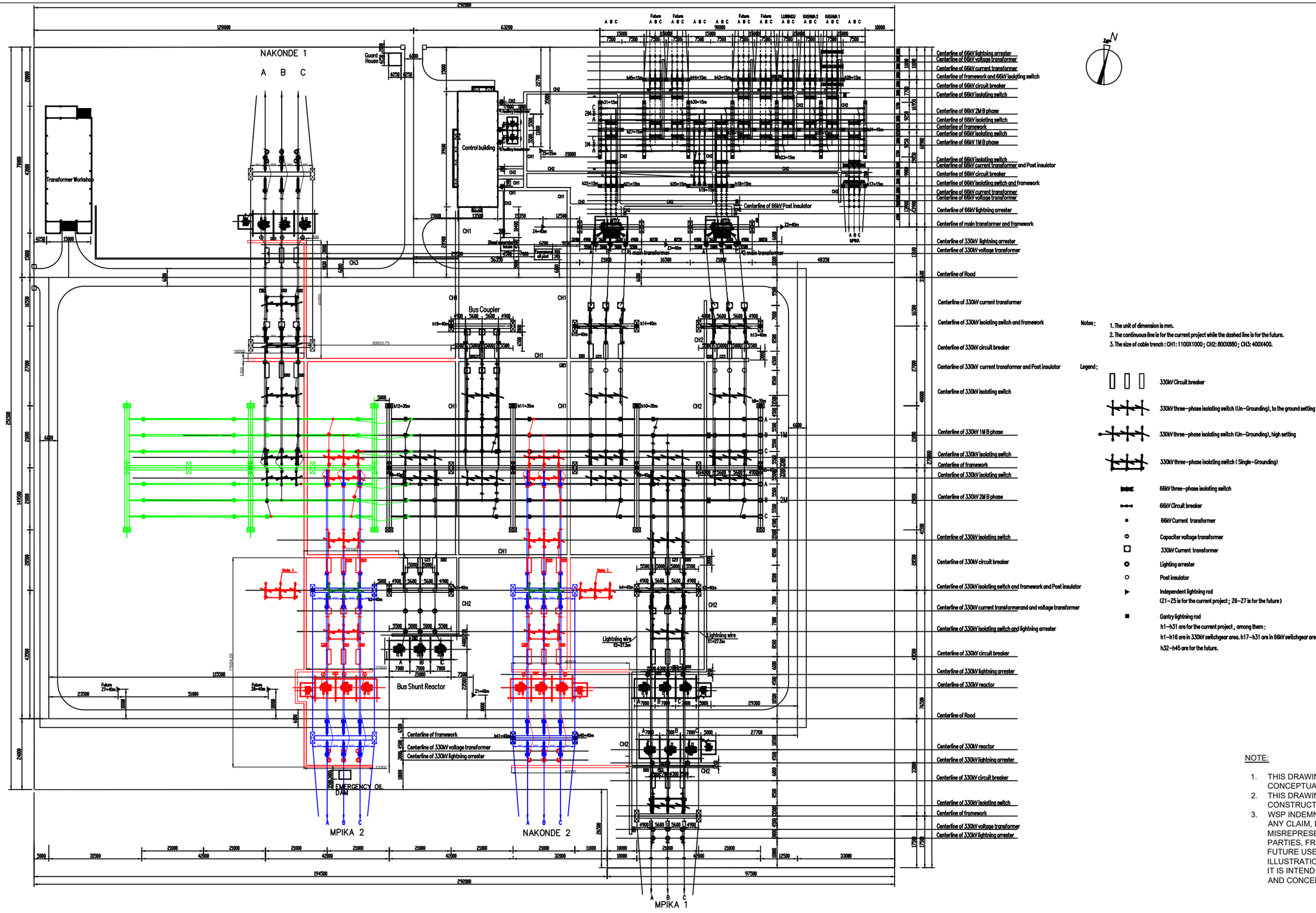
330kV S/C Tension Tower 10° - 30° - 60°



ZAMBIA TANZANIA INTERCONNECTOR 330kV Overhead Line Pensulo-Mpika – Kasama	wsp	TITLE: SINGLE CIRCUIT TOWER OUTLINE	Drawn: MA Checked: MS Approved: DM Date: 12/2020	Drawing No. XXXX	ZESCO

APPENDIX

3-3 SUBSTATION CONFIGURATION DRAWINGS



Notes:

1. The unit of dimension is mm.
2. The continuous line is for the current project while the dashed line is for the future.
3. The size of cable trench : CH1: 1100X1000 ; CH2: 800X880 ; CH3: 400X400.

Legend:

- 330kV Circuit breaker
- 330kV three-phase isolating switch (Un-Grounding), to the ground setting
- 330kV three-phase isolating switch (Un-Grounding), high setting
- 330kV three-phase isolating switch (Single-Grounding)
- 66kV three-phase isolating switch
- 66kV Circuit breaker
- 66kV Current transformer
- Capaciter voltage transformer
- 330kV Current transformer
- Lightning arrester
- Post insulator
- Independent lightning rod (Z1-Z5 is for the current project ; Z6-Z7 is for the future)
- Gantry lightning rod

h1-h31 are for the current project , among them :
h1-h16 are in 330kV switchgear area. h17-h31 are in 66kV switchgear area.
h32-h45 are for the future.

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2	02/09/2020	AG	CHANGES AS PER ZESCO COMMENTS	MH	DB
1	22/07/2020	AG	ZESCO COMMENTS	MH	DB
0	23/06/2020	AG	FIRST DRAFT	MH	DB

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PROJECT: SAPP - ZTIP Phase 2

TITLE: KASAMA GA - PROPOSED LAYOUT

SCALE :	CHECKED:	APPROVED:
1:1250	MH	DB
DESIGN: AG	DRAWN: AG	DATE: 02/09/2020
PROJECT No: 48100008	DRAWING No: 48100008-KASAMA-GA	REV: 2

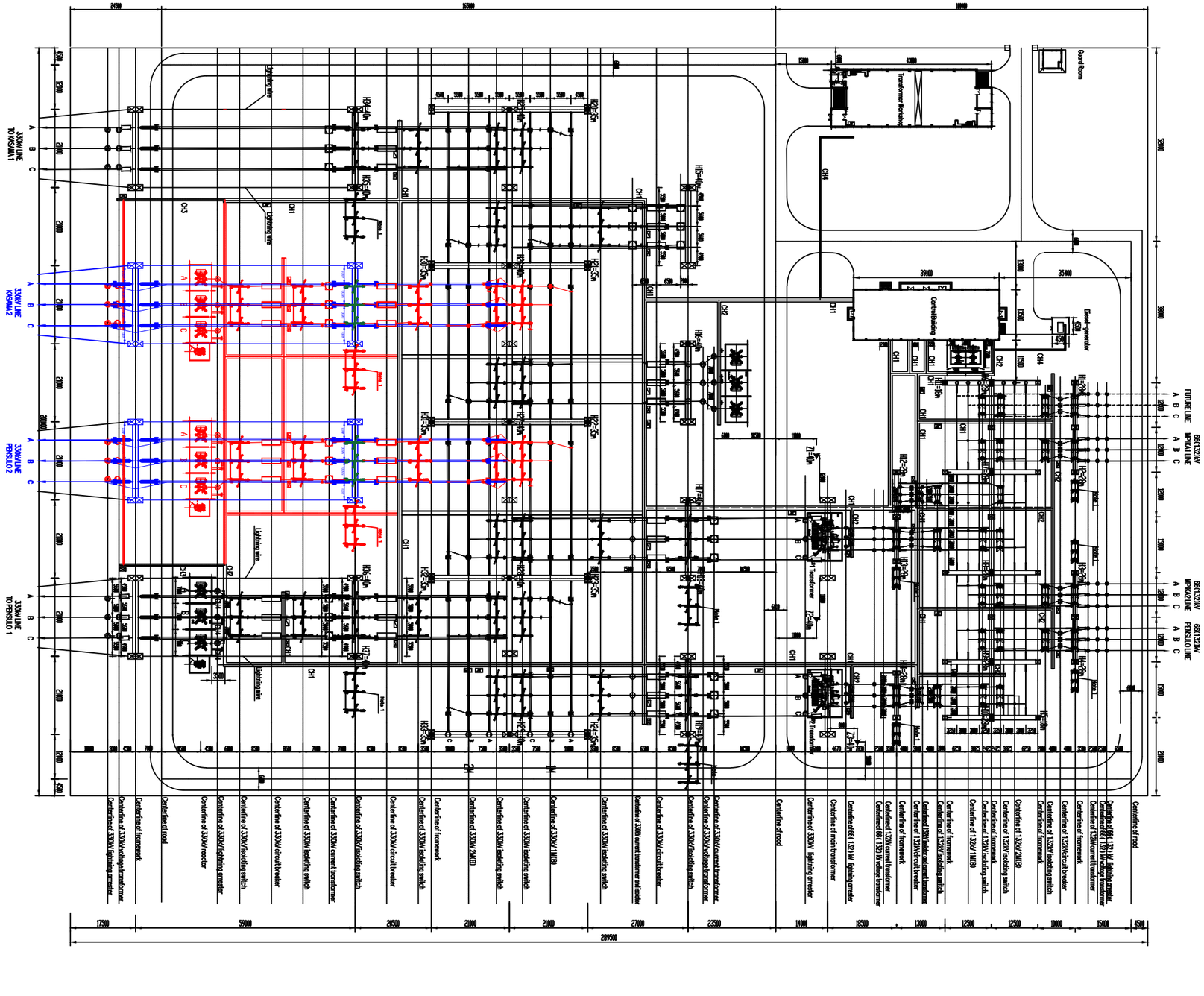
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PLOT DATE: 2020/09/02 13:29:12



N

Note1 :

This isolating switch(Single-Grounding) is under the 330kV framework.Please see each section drawing for its position.

Introduction :

1.The continuous line is for the current project while the dotted line is for the future.

2. Dimensions is mm.

3. The size of cable trench:
CH1:1100x1000
CH2:800x880
CH3:600x600
CH4:400x400

Illustration :

- 330kV Circuit breaker
- 330kV three-phase isolating switch (Un-Grounding), to the ground setting
- 330kV three-phase isolating switch (Un-Grounding), high setting
- 330kV three-phase isolating switch (Single-Grounding)
- 132kV Circuit breaker
- 132kV three-phase isolating switch (Un-Grounding), to the ground setting
- 132kV three-phase isolating switch (Un-Grounding), high setting
- 132kV three-phase isolating switch (Single-Grounding)
- Capaciter voltage transformer
- 330kV Current voltage transformer
- 132kV Current voltage transformer
- Lighting arrester
- Post insulator
- Independent lighting rod , a total of 3, 40 metres high.
- Gantry lighting rod , a total of35 , 2 of them 18metres high,12 of them 28metres high,9 of them 35metres high , 16 of them 40metres high
- XW1 Terminal box, 15 pcs.
  Maintenance power box, 9 pcs.
- Bus CVT Terminal box , 4 pcs.
- Control box of circuit breaker, 7 pcs.
- Control cabinet for maintransformer, a total of 2
- Terminal box for shunt reactor,a total of 8

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1	13/07/2020	AG	ZESCO COMMENTS	MH	DB
0	12/06/2020	AG	FIRST DRAFT	MH	DB

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PROJECT: SAPP - ZTIP Phase 2

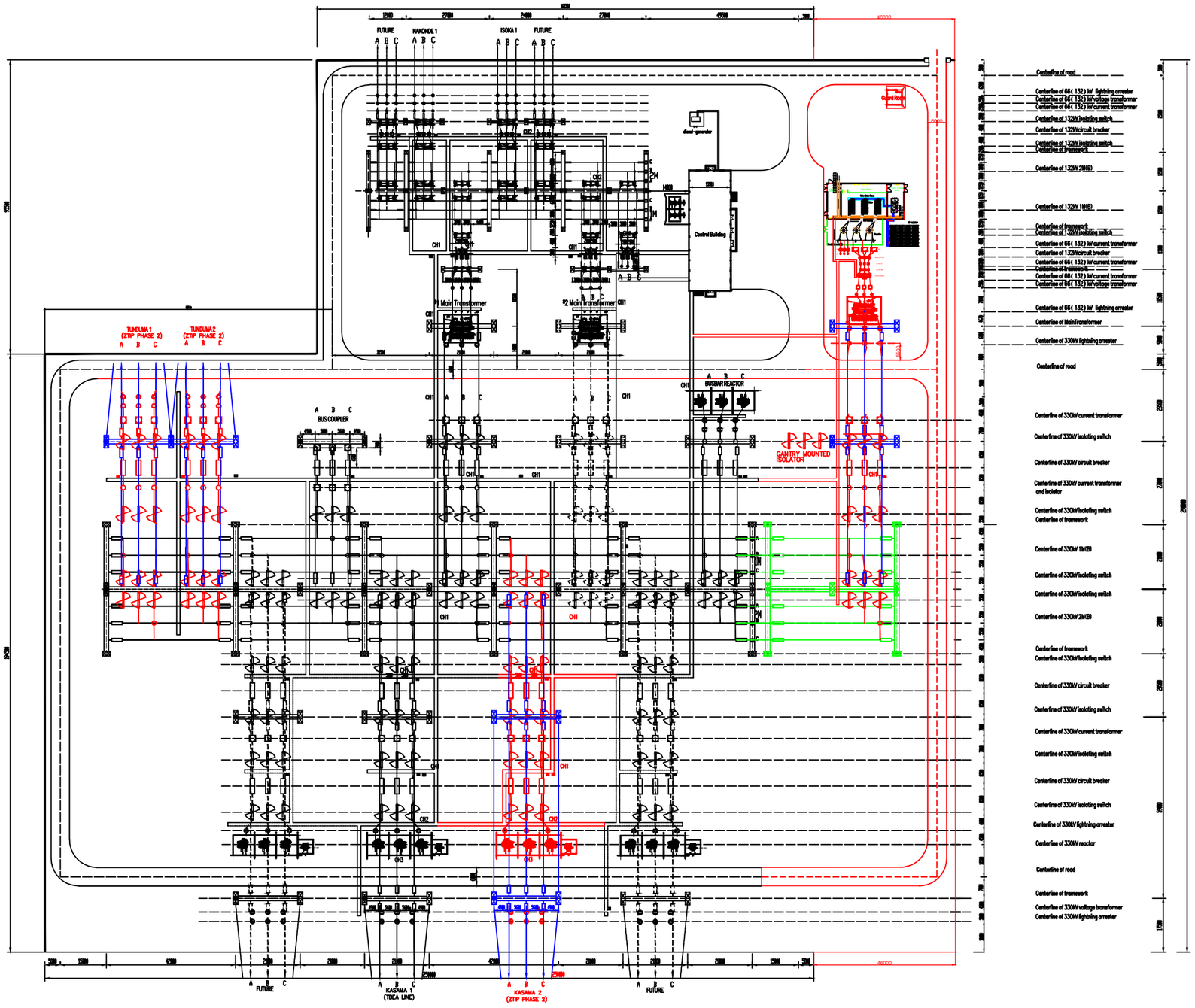
TITLE: MPIKA GA - PROPOSED LAYOUT

SCALE :	CHECKED:	APPROVED:
1:1250	MH	DB
DESIGN: AG	DRAWN: AG	DATE: 02/09/2020
PROJECT No: 48100008	DRAWING No: 48100008-MPIKA-GA	REV: 2

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PLOT DATE: 2020/09/02 13:33:38



ZTIP PHASE 2 NOTES:

1. ZTIP PHASE 2 WORKS ARE AS FOLLOWS:
   - 1.1. GREEN REPRESENTS BUSBAR EXTENSION
   - 1.2. BLUE IS STRINGER BEAM AND COLUMN FOR BAYS
   - 1.3. RED IS EQUIPMENT, CONDUCTOR AND CABLE TRENCHES
2. SCOPE OF WORKS IS AS FOLLOWS:
   - 2.1. 1 X TUNDUMA 1 330 kV FEEDER BAY
   - 2.2. 1 X TUNDUMA 2 330 kV FEEDER BAY
   - 2.3. 1 X KASAMA 2 330 kV FEEDER BAY WITH 30 MVAR LINE REACTOR
   - 2.4. SPACE ALLOCATED FOR +250/-120 MVAR SVC OR STATCOM (+/- 250 MVAR) WITH ASSOCIATED 330 kV BUSBAR EXTENSION
   - 2.5. SUBSTATION YARD EXTENDED INCLUDING ALL CIVIL WORKS (ROADWAY AND DRAINAGE)
   - 2.6. GUARD HOUSE RELOCATED TO NEW POSITION NEAR NEW ACCESS GATE POSITION AS PROPOSED

The size of cable trench:
CH1:1100x1000
CH2:800x880
CH3:600x600
CH4:400x400

Illustration :

- 330kV Circuit breaker
- 330kV three-phase disconnecter switch
- 132kV three-phase disconnecter switch
- 132kV Circuit breaker
- Capaciter voltage transformer
- Current voltage transformer
- Lighting arrester
- Post insulator
- XW1 Terminal box, 11 pcs.
- Maintenance power box, 6 pcs.
- Control cabinet for maintransformer, 1pcs

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2	02/09/2020	AG	FINAL CHANGES AS PER ZESCO COMMENTS	MH	DB
1	29/07/2020	AG	ZESCO COMMENTS ADDRESSED	MH	DB
0	29/06/2020	AG	FIRST DRAFT	MH	DB

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PROJECT: SAPP - ZTIP Phase 2

TITLE: NAKONDE GA - PROPOSED LAYOUT

SCALE :	CHECKED:	APPROVED:
1:1500	MH	DB
DESIGN: AG	DRAWN: AG	DATE: 02/09/2020
PROJECT No: 48100008	DRAWING No: 48100008-NAKONDE-GA	REV: 2

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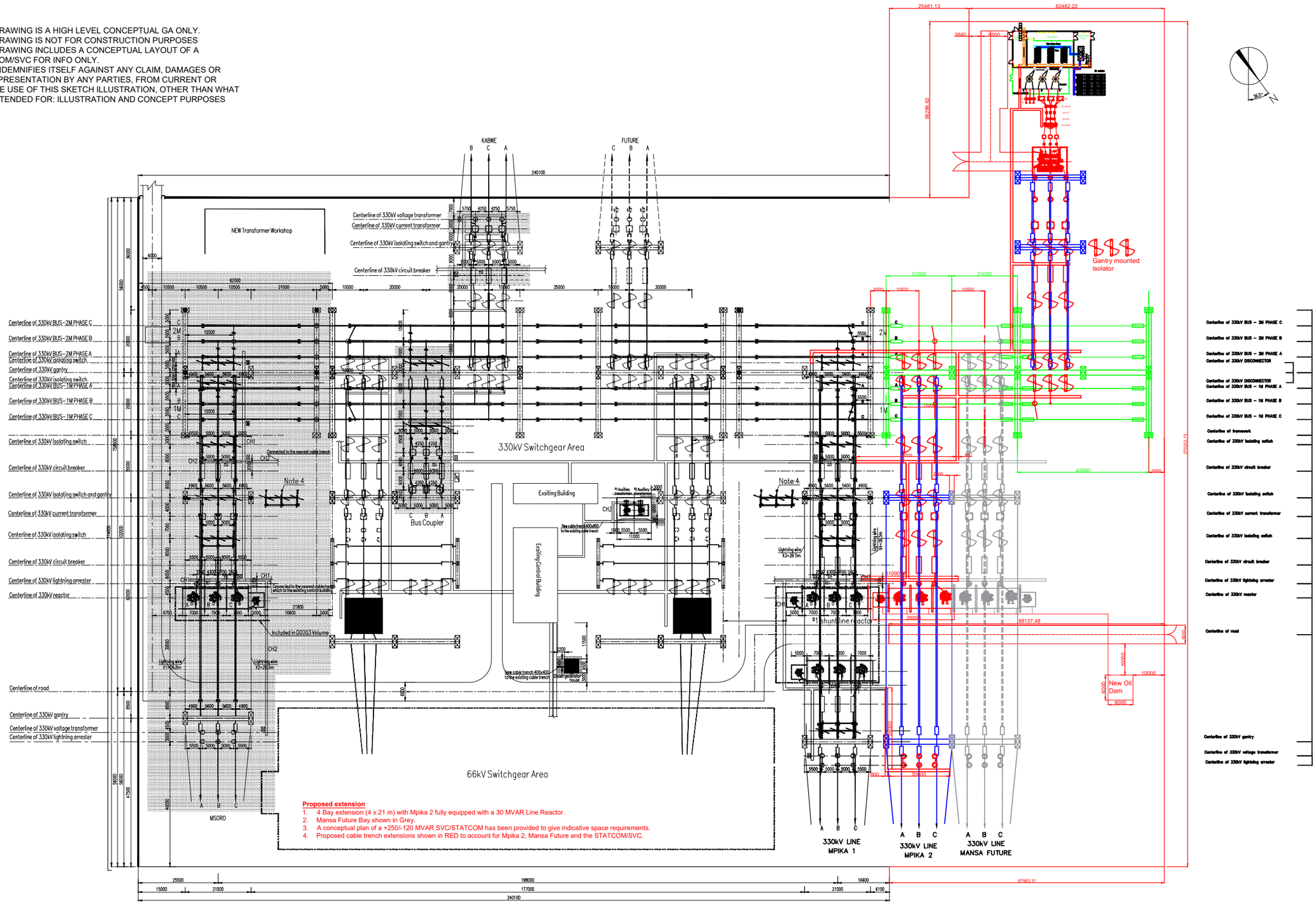
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Proposed extension

1. 4 Bay extension (4 x 21 m) with Mpika 2 fully equipped with a 30 MVAR Line Reactor.
2. Mansa Future Bay shown in Grey.
3. A conceptual plan of a +250/-120 MVAR SVC/STATCOM has been provided to give indicative space requirements.
4. Proposed cable trench extensions shown in RED to account for Mpika 2, Mansa Future and the STATCOM/SVC.

REV	DATE	BY	DESCRIPTION	CHK	APD
1	02/09/2020	AG	FINAL CHANGES AS PER ZESCO COMMENTS	MH	AG
0	31/07/2020	AG	FIRST DRAFT	MH	AG

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PROJECT: SAPP - ZTIP Phase 2

TITLE: PENSULO GA - PROPOSED LAYOUT

SCALE :	CHECKED:	APPROVED:
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DESIGN: AG	DRAWN: AG	DATE: 02/09/2020
PROJECT No: 48100008	DRAWING No: 48100008-PEN-GA	REV: 1

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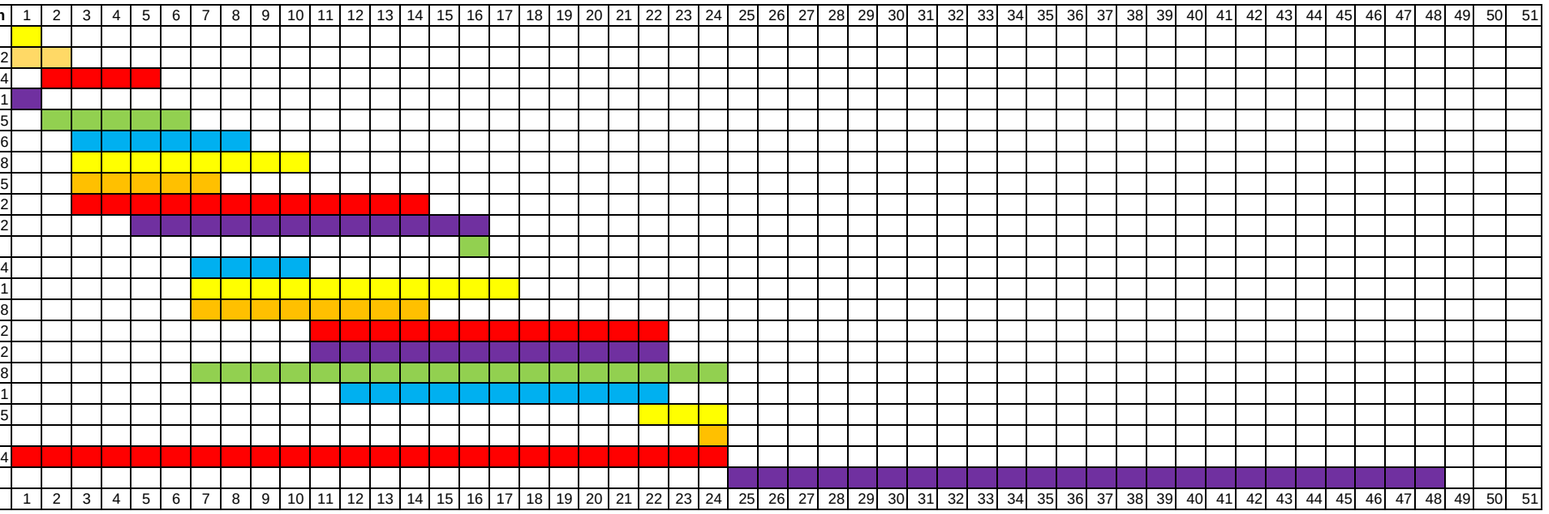
APPENDIX

3-4 DETAILS OF THE CONSTRUCTION SCHEDULE

Schedule Per Lot or Package 1 to 4

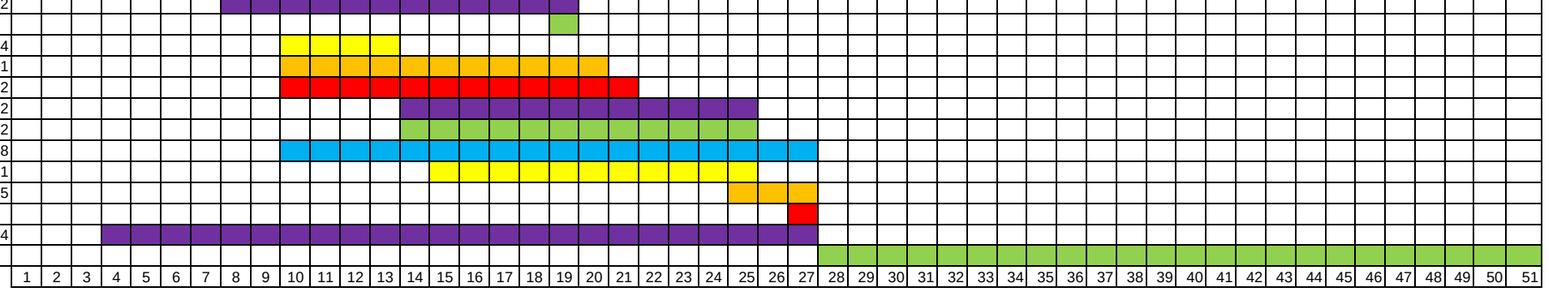
Lots 1-2 (Pensulo-Kasama)

Milestone	Project Months Duration
Effective Date of Contract and Start-up Meeting	
Mobilisation of Contractor	2
Detailed Survey	4
Preparation of Project Schedule	1
Preparation of Plans and Profiles	5
Detailed Design of substation terminal equipment	6
Review and Approval of Contractors Documents	8
Soil Investigations	5
Manufacture of Equipment	12
Supply of Equipment	12
Completion of Supply at Site	
Approval of Foundation List	4
Foundation Construction Stub Setting	11
Civil Works for Substation equipment	8
Installation & Erection of Substation Equipment	12
Tower Erection	12
Supervision of Installation & Erection	18
Stringing and Sagging	11
Site Test and Commissioning	2,5
Completion of Pre-commissioning	
Summary of Contract	24
DLP	



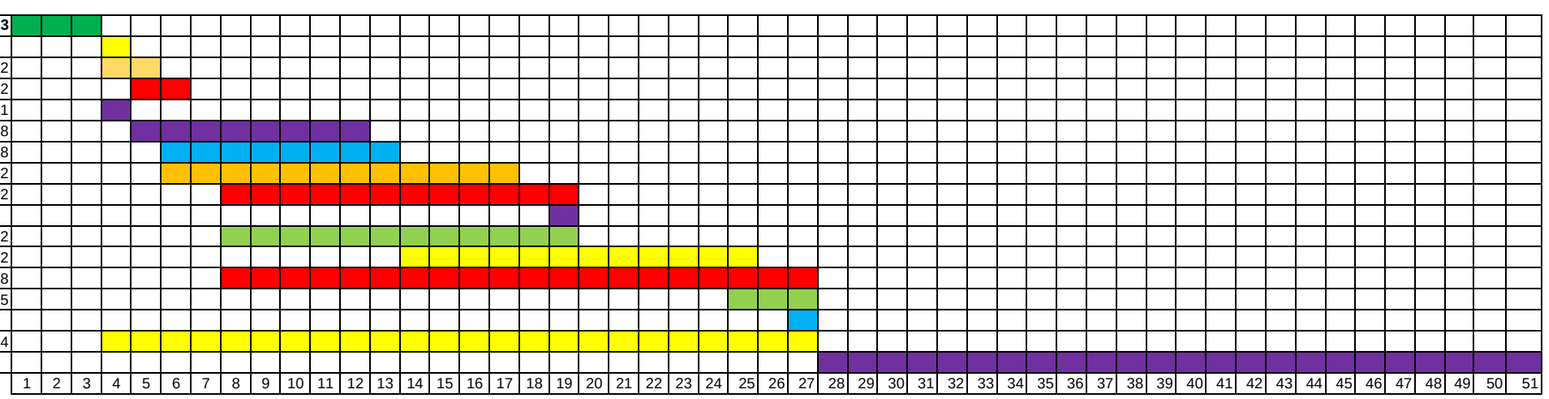
Lot 3 (Kasama-Nakonde)

Development of tender documents/update of design/tender management	**3**
Effective Date of Contract and Start-up Meeting	
Mobilisation of Contractor	2
Detailed Survey & Design	4
Preparation of Project Schedule	1
Preparation of Plans and Profiles	5
Detailed Design of substation equipment	8
Review and Approval of Contractors Documents	10
Soil Investigations	5
Manufacture of Equipment	12
Supply of Equipment	12
Completion of Supply at Site	
Approval of Foundation List	4
Foundation Construction Stub Setting	11
Civil Works for Substation equipment (Earth works, foundations & buildings)	12
Erection & Installation of Substation Equipment	12
Tower Erection	12
Supervision of Erection & Installation	18
Stringing and Sagging	11
Site Test and Commissioning	2,5
Completion of Pre-commissioning	
Summary of Contract	24
DLP	



Lot 4 (Pensulo and Nakonde DVSDs)

Development of tender documents/update of design/tender management	**3**
Effective Date of Contract and Start-up Meeting	
Mobilisation of Contractor	2
Detailed Survey and soil investigations	2
Preparation of Project Schedule	1
Detailed Design	8
Review and Approval of Contractors Documents	8
Manufacture of Equipment	12
Supply of Equipment	12
Completion of Supply at Site	
Civil Works (Earth works, foundations & Buildings)	12
Erection and installation of Equipment	12
Supervision of Erection & Installation	18
Site Test and Commissioning	2,5
Completion of Pre-commissioning	
Summary of Contract	24
DLP	



APPENDIX

5-1 NOISE SAMPLING RESULTS

NOISE SAMPLING FORM

Name of sampling point: Mpika Substation

Equipment.....

Date: 25.05.24 **Start Time:** 16:35 **End time:** 18:35

GPS Coordinates	
X	-11,8709036
Y	31,4090822

Interval (S)	Noise Readings (dBA)	Interval (S)	Noise Readings (dBA)	Interval (S)	Noise Readings (dBA)	Interval (S)	Noise Readings (dBA)	Interval (S)	Noise Readings (dBA)	Interval (S)	Noise Readings (dBA)
30	87,6	1230	77,5	2430	56,4	3630	56,5	4820	54,6	6020	54,0
60	72,7	1260	78,9	2460	67,1	3660	57,9	4850	54,4	6050	55,4
90	79,4	1290	57,3	2490	54,9	3690	57,2	4880	60,3	6080	55,0
120	73,9	1320	72,7	2520	52,5	3720	58,0	4910	52,4	6110	54,3
150	68,1	1350	54,0	2550	62,0	3750	54,7	4940	65,1	6140	56,0
180	55,8	1380	65,7	2580	54,2	3780	55,2	4970	61,5	6170	59,0
210	71,3	1410	59,7	2610	53,9	3810	53,7	5000	54,4	6200	59,0
240	69,4	1440	53,3	2640	52,5	3840	53,8	5030	69,2	6230	55,8
270	68,2	1470	85,2	2670	52,6	3870	59,9	5060	69,5	6260	54,3
300	65,0	1500	71,4	2700	62,6	3900	53,6	5090	56,0	6290	55,1
330	59,9	1530	80,7	2730	54,2	3930	58,9	5120	56,5	6320	54,6
360	55,8	1560	65,0	2760	53,9	3960	54,1	5150	58,2	6350	55,7
390	53,1	1590	53,1	2790	52,5	3990	59,8	5180	55,2	6380	53,8
420	54,5	1620	50,0	2820	52,6	4020	53,1	5210	54,1	6410	54,4
450	63,0	1650	59,1	2850	62,6	4050	53,0	5240	55,3	6440	54,7
480	60,0	1680	52,6	2880	71,2	4080	54,7	5270	56,0	6470	54,4
510	65,7	1710	51,7	2910	55,1	4110	54,2	5300	62,0	6500	54,6
540	75,4	1740	51,6	2940	53,1	4140	53,2	5330	61,5	6530	54,0
570	67,3	1770	53,6	2970	75,9	4170	53,6	5360	53,1	6560	63,1
600	57,3	1800	69,1	3000	69,0	4200	53,0	5390	56,1	6590	57,1
630	52,7	1830	65,0	3030	56,2	4230	53,4	5420	63,6	6620	54,8
660	68,8	1860	55,4	3060	53,1	4260	54,3	5450	55,7	6650	61,1
690	76,3	1890	53,9	3090	54,1	4290	53,1	5480	55,5	6680	59,9
720	77,2	1920	63,6	3120	53,4	4310	55,8	5510	60,9	6710	55,1
750	54,4	1950	56,1	3150	56,9	4340	57,3	5540	54,2	6740	54,8
780	61,8	1980	57,5	3180	53,2	4370	55,4	5570	54,6	6770	54,5
810	65,5	2010	51,7	3210	66,3	4400	54,4	5600	56,4	6800	62,2
840	52,4	2040	65,9	3240	56,9	4430	53,1	5630	54,4	6830	58,4
870	51,6	2070	52,3	3270	53,2	4460	55,1	5660	64,1	6860	54,5
900	60,6	2100	64,4	3300	54,1	4490	53,2	5690	55,1	6890	57,8
930	51,6	2130	56,0	3330	53,9	4520	65,9	5720	59,1	6920	54,2
960	65,1	2160	67,5	3360	55,1	4550	58,0	5750	55,6	6950	54,7
990	65,2	2190	65,9	3390	55,3	4580	53,1	5780	57,0	6980	54,6
1020	53,0	2220	52,3	3420	54,6	4610	65,0	5810	58,5	7010	55,0
1050	52,4	2250	64,4	3450	55,1	4640	54,7	5840	53,2	7050	54,8
1080	53,8	2280	56,0	3480	55,4	4670	59,0	5870	55,7	7080	54,9
1110	53,3	2310	67,5	3510	57,1	4700	55,1	5900	58,1	7110	54,4
1140	57,8	2340	55,7	3540	52,8	4730	53,7	5930	55,3	7140	55,7
1170	70,5	2370	54,9	3570	67,1	4760	53,6	5960	51,0	7170	55,2
1200	74,4	2400	69,6	3600	54,8	4790	55,1	5990	69,2	7200	53,3

Main sources of noise: Wind

Weather condition: Windy

Sampled by: Aldrin Sinkala

APPENDIX

5-2 *BIOLOGICAL BASELINE METHODOLOGY*

BIOLOGICAL BASELINE CHARACTERIZATION DETAILED METHODOLOGY

BIOLOGICAL ENVIRONMENT

FLORA AND HABITAT

The characterization of habitat types and flora communities inside the project area is based on several field investigations and on flora occurrence data from the Global Biological Information Facility (GBIF, 2024) in the last 20 years (2004-2024).

Vegetation surveys were conducted during three different campaigns. A first one was held in September 201 5and June 2016. Then in September 2019, a walkover survey was held specifically in forest reserves crossed by the line, Finally, in October-November 2019, a third rapid flora field survey was completed. Survey sites were selected to provide a representative overview of flora communities inside the different habitat types found within the study area, based on satellite imagery analysis. Selection of survey sites also considered:

- the land outlay, including consideration of prominent features in the landscape such as dambos or swamps, human settlements, riparian zones and escarpments;
- the presence of various plant communities in the area including grasslands, woodlands, forests, woodlots and plantations;
- protected areas or forest reserves, whether set aside for conservation and protection of plants, wildlife, heritage, watersheds and ecosystem;
- values utilization potential of woodlands and forests, and other ecosystems for various purposes by local people and other users.

FIELD SURVEYS 2015-2016

In the 2015 and 2016 campaign, a total of 33 transects with 2 sample plots of 20 m x 20 m or 400 m^2 each were surveyed along the length of the proposed route of the transmission line. Several plots, especially those that fell in Forest Reserves were expanded to 20 m x 30 m or 600 m^2 to facilitate assessment of woody vegetation that was equal to or more than 5 cm in diameter at breast height. Information about the sampling plot and plot constituents was recorded on a Vegetation Survey Sheet. The survey was extended outside the plot until species listed became redundant. All plant specimens that could not be identified during the field survey were tagged and later identified in the Forest Herbarium (NDO) in Kitwe. Phiri's (2006) Checklist of Vascular Plants of Zambia was the main reference for the names of flora taxa. Coordinates of the plots surveyed in 2015 and 2016 are provided in the Table below.

Table 1 Coordinate of Flora Surveys Sites Conducted in 2015-2016

Location	Coordinates	
Kapele Forest Reserve	32,36299868950	-10,29390015290
Ituntwe Forest reserve	32,07419570060	-10,72960928550
Forest	30,79538248830	-13,16090584070
Colline	31,31933107470	-12,07035405310
Woodland	31,38208925340	-11,99727771140
Floodplain	31,05619995930	-12,51350204730
Riverine Forest	29,11559388620	-14,32220785790

Floor 16
1600 René-Lévesque Blvd. West
Montréal, Quebec H3H 1P9
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Location	Coordinates	
Forest	28,89519619950	-14,46156473970
Riverine forest	31,59271910250	-11,54866870290
Nakonde Forest Reserve	32,69898304030	-9,36415970141
Miombo - Forest Reserve	31,58876704510	-11,55907449020
Miombo - Forest Reserve	31,63580660090	-11,51556455160
Forest	29,82594040660	-13,91088220300
Forest	32,66177228020	-9,29669956920
Woodland	31,09440117180	-12,41890190460
Wetland1	32,51962492490	-9,26741229687
Floodplain	31,68767443530	-9,79586412683
Forest reserve - Spotted woodland	31,20353768040	-10,09921007950
Kasama forest reserve - Open woodla	31,19788399050	-10,14566226510
Forest reserve - Open woodland	31,18959597660	-10,11738077320
Riverine forest1	31,19534927460	-10,11162311340
Riverine forest2	32,24582340340	-9,36510732091
Wetland2	32,25742684640	-9,36043366865
Spotted woodland2	31,79483807490	-9,71688413199
Floodplain-Wetland	31,79410706990	-9,72009608104
Spotted woodland1	31,87359908780	-9,64299251812
Wetland3	31,41134920220	-9,93886044976
Spotted woodland3	31,96069815970	-9,51356106347
Miombo	31,73973344820	-11,20578170270
Lavushi Manda1	31,08966700000	-12,29640100000
Miombo	30,40426600000	-13,06896800000
Wetland	30,74626900000	-13,08263900000
Lavushi Manda2	31,08966700000	-12,29640100000

WALKOVER SURVEY OF FOREST RESERVES

Additionally, a walkover survey to characterize habitats within forest reserves traversed by or adjacent to the proposed transmission line was conducted in September 2019. This survey aimed to assess and verify land use conditions and habitat type and quality within the forest reserve. Survey sheets and photos from these surveys are available in Appendix 5-1.

RAPID FLORA FIELD SURVEYS 2019

Flora surveys were carried out from October 29 to November 4, 2019. Selection of survey sites was done using existing vegetation maps such as VECEA (2019) and previous habitat mapping carried out by WSP for the ESIA using satellite imagery. Twenty-nine (29) main sampling plots were subjectively placed along the line route based on existing environmental conditions such as presence of wetlands, riparian zones, rock outcrops, woodlands, and disturbed areas. The location and habitat types of survey sites are described in Table 2.

Table 2 Location of Flora Survey Sites

STATION ID (PLOT NO.)	ASSOCIATED HABITAT	DATE	EASTING (M) UTM 36S, WGS84	NORTHING (M) UTM 36S, WGS84
F1	Woodland	29/10/2019	240403.787	8554363.922
F2	Grassland x	29/10/2019	241434.852	8555191.375

STATION ID (PLOT NO.)	ASSOCIATED HABITAT	DATE	EASTING (M) UTM 36S, WGS84	NORTHING (M) UTM 36S, WGS84
F3	Woodland	29/10/2019	268598.324	8590806.872
F4	Woodland	29/10/2019	282517,885	8610192.450
F5	Woodland	29/10/2019	289673.579	8632397.032
F6	Woodland	30/10/2019	291269,926	8637073,252
F7	Dambo/grassland	30/10/2019	307974,277	8662549.114
F8	Riverine forest	30/10/2019	323130.081	8687788.685
F9	Grassland x	30/10/2019	316326.551	8705987.813
F10	Woodland	30/10/2019	310913.908	8721838.856
F11	Dambo	30/10/2019	308239.039	8731920.631
F12	Woodland	31/10/2019	298478.387	8763893.440
F13	Dambo	31/10/2019	298607.313	8765184.737
F14	Riverine forest	31/10/2019	290933.032	8787532.860
F15	Woodland	31/10/2019	301791.881	8825467.317
F16	Woodland	1/11/2019	302027.472	8835629.627
F17	Woodland	1/11/2019	302073.613	8860818.464
F18	Woodland	1/11/2019	305082.345	8865399.456
F19	Riverine forest	1/11/2019	306348.619	8870097.201
F20	Riverine forest	1/11/2019	319025.420	8880670.044
F21	Escarpment woodland	2/11/2019	320459.376	8895586.763
F22	Riverine forest	2/11/2019	355862.415	8917226.424
F23	Woodland	2/11/2019	374380.030	8930264.659
F24	Woodland	2/11/2019	374326.620	8931792.855
F25	Grassland	2/11/2019	378270.725	8933710.107
F26	Wooded dry dambo	2/11/2019	438132.273	8971320.146
F27	Riverine forest	3/11/2019	430108.485	8970213.726
F28	Wooded wetland	3/11/2019	392264.951	8953848.494
F29	Wooded dry dambo	4/11/2019	324815.873	8885211.152

The selected sites were surveyed for vegetation structure, composition, density, and conservation value. A 20 m main sampling plot for collection of vegetation information was established at all main survey sites, and in some cases, sub-plots were assigned between main plots to collect additional information which may not have been collected. All flora species within the plot were identified in the field or were collected to be identified at the Forest Herbarium (NDO) in Kitwe. For woody vegetation, especially for shrubs and trees with heights of more than 1.5 m, diameter was taken at 1.3 m or breast height and expressed in cm. Estimates of total height for each tree, in m, were also carried out.

Visual assessment of vegetation cover was carried out for ground vegetation, shrub cover, and canopy cover, and expressed in percentage for both individual species and total species, in each cover category.

Disturbances within the vegetation were accounted for using visual assessment of physical signs of disturbance such as fire scars on tree trunks and open grass spaces, coppicing at waist height for trees previously cut for field preparation and branch cutting for trees felled for harvesting caterpillars, etc.

The information was recorded on a vegetation survey sheet specifically designed to capture vegetation cover indices and density, such as percent cover using Braun Blanquet. Photos and additional observations were recorded using the Fulcrum app. All completed survey sheets are available in Appendix 5-1.

BIRDS

Bird occurrence data was obtained from either field survey conducted in November 2019, GBIF 2024 and the Southern African Bird Atlas Project 2 (SABAP 2) to ascertain which species could occur within the Project area. SABAP 2 is a citizen science project that maps the distribution of birds across several southern African countries, including Zambia. The SABAP 2 survey protocol records the presence of as many bird species as possible within a 5-minute x 5-minute area called a pentad. A total of 19 pentads were surveyed in and around the study area between 2007 and 2019. A total of 38 bird surveys lasting a minimum of two hours each were completed across these pentads, through which the proposed transmission line alignment traverses.

Other avifaunal datasets that were consulted are:

- Location and description of the Important Bird Areas (IBAs) within the study area obtained from BirdLife International, accessed on September 24, 2019;
- The most recent and comprehensive summary of southern African bird biology (Hockey et *al.,* 2005);
- The power line - bird mortality incident database of the Eskom/Endangered Wildlife Trust Strategic Partnership (1996 to 2013) was consulted to determine which of the species occurring in the study area are typically impacted from interaction with power lines, and the extent of the impact;
- Southern Ground Hornbill occupancy data for the study area, obtained from Dr. Lucy Kemp, co-chair of the IUCN SSC Hornbill Specialist Group (October 4, 2019);
- Migratory flyway descriptions as detailed in a series of factsheets published by BirdLife International (2014) and in an overview published by the United Nations Environment Programme (UNEP) and the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS);
- Luangwa Valley and its importance as a migratory staging area for White Sork (Gerkmann et *al.*, 2008);

SURVEY METHODOLOGY

The following data collection protocols were employed during the rapid field survey, conducted from October 30 to November 12, 2019, in order to 1) ground truth the information gleaned from secondary data sources during the ESIA update, 2) collect primary bird occurrence data, and 3) delineate migratory flyways both within the proposed powerline corridor and its immediate surroundings.

Given the sheer number of species and the limited amount of time available for the field survey, it was necessary to prioritize the species most relevant to the Project and its associated impacts. Avifaunal surveys and assessments should always place significant focus on Red List species, since the impacts associated with development are likely to be more biologically significant for these species, however, the impact on non-Red List species should also be considered.

Priority species were defined in terms of i) global and/or regional (species that are considered to be threatened within Zambia) status, ii) uniqueness or endemism, iii) susceptibility to powerline associated impacts, and iv) relative use of the habitats within the proposed development area, e.g., migratory species. The list of priority species is available in Appendix 5-5.

SAMPLE COUNTS OF PRIORITY SPECIES AND SMALL TERRESTRIAL SPECIES

Species occurrence was established using fixed point counts, in conjunction with walked transects. Prior to the commencement of the field surveys, 66 point-count locations were established along the proposed powerline alignment. Following a ground truthing of the habitat types contained within the confines of the powerline alignment, the ability to access the various points and the severity of existing disturbances in the immediate surroundings, the number of point counts were reduced to 45 (Table 2-3).

Point count locations were representative of avifaunal habitat types, i.e., mature Miombo woodland, regenerating Miombo woodland, riverine forests, dambos, rivers and watercourses, lakes, inselbergs and subsistence agriculture (Maps 5-11 to 5-13). Point count surveys were conducted over a period of ten consecutive days. Where possible, the point counts were conducted when conditions were optimal, i.e., when birds are most active and vocal, preferably in the early mornings or late afternoons, however,

this was not always possible given the number of point counts that needed to be conducted and the time taken to travel between these points.

Observers conducted a short walk transect surrounding the point count location and recorded all species seen or heard within fixed detection bands of 50 m, 51 - 100 m and > 100 m over an average of 60-minutes. Point count variables were captured electronically, using ArcGIS Survey 123 and on hard copy data sheets.

While the emphasis of the field surveys is on the priority species identified, it is also necessary to monitor the occurrence of small terrestrial species. This is to further understand the general displacement effects of powerline developments and, particularly, the possible cumulative impacts of widespread powerline development on the broader avifaunal community, rather than fulfilling any immediate and localized conservation requirement.

Table 3 Point Count Locations Visited during the Rapid Field Survey Period

ID NUMBER	LATITUDE	LONGITUDE	ELEVATION	DATE	TIME (START)	TIME (END)	SURVEY TIME	HABITAT
A-1	13° 1'47.93"S	30°26'56.70"E	1,568 m	31.10.19	06:43:00	07:37:00	00:54:00	Mixed: Watercourse, Wetland, Woodland
A-2	13° 2'29.60"S	30°28'58.83"E	1,605 m	31.10.19	08:26:00	09:23:00	00:57:00	Regenerating Miombo Woodland
A-3	13° 2'57.67"S	30°29'56.35"E	1,612 m	31.10.19	09:40:00	10:34:00	00:54:00	Miombo Woodland
A-4	13° 3'48.98"S	30°31'12.05"E	1,592 m	31.10.19	15:53:00	16:50:00	00:57:00	Mixed: Regenerating Miombo Woodland, Subsistence Agriculture
A-5	13° 3'56.16"S	30°31'25.90"E	1,585 m	31.10.19	16:59:00	18:13:00	01:14:00	Dambo
A-6	13° 3'39.59"S	30°33'40.22"E	1,618 m	01.11.19	06:46:00	07:45:00	00:59:00	Mixed: Mature Woodland, Watercourse, Dambo
A-7	13° 4'25.00"S	30°35'33.97"E	1,606 m	01.11.19	08:12:00	08:59:00	00:47:00	Mixed: Woodland, Subsistence agriculture
A-8	13° 3'31.21"S	30°36'58.83"E	1,623 m	01.11.19	09:54:00	11:35:00	01:41:00	Mixed: Dambo, Riverine Forest, Mungwi Forest Reserve
A-9	13° 1'36.01"S	30°38'11.94"E	1,603 m	01.11.19	12:05:00	12:51:00	00:46:00	Miombo Woodland
A-11	12°54'44.71"S	30°41'30.30"E	1,543 m	01.11.19	15:58:00	16:52:00	00:54:00	Regenerating Miombo Woodland
A-12	12°44'16.03"S	30°52'13.90"E	1,513 m	02.11.19	08:04:00	09:16:00	01:12:00	Regenerating Miombo Woodland

ID NUMBER	LATITUDE	LONGITUDE	ELEVATION	DATE	TIME (START)	TIME (END)	SURVEY TIME	HABITAT
A-14	12°38'11.32"S	30°58'26.41"E	1,536 m	02.11.19	11:17:00	12:04:00	00:47:00	Regenerating Miombo Woodland
A-15	12°34'1.98"S	30°59'51.26"E	1,482 m	02.11.19	12:47:00	13:52:00	01:05:00	Miombo Woodland
A-17	12°23'42.30"S	31° 3'19.61"E	1,452 m	02.11.19	15:08:00	15:55:00	00:47:00	Mixed: Miombo Woodland, Dambo
A-18	12°19'24.84"S	31° 4'48.10"E	1,495 m	03.11.19	06:42:00	07:54:00	01:12:00	Miombo Woodland
A-19	12°17'23.37"S	31° 5'48.20"E	1,448 m	03.11.19	08:11:00	09:27:00	01:16:00	Mixed: Miombo Woodland, Dambo
A-20	12°12'17.90"S	31° 9'2.98"E	1,464 m	03.11.19	10:15:00	11:21:00	01:06:00	Mixed: Miombo Woodland, Inselberg
A-21	12°11'5.97"S	31°11'41.09"E	1,415 m	03.11.19	12:33:00	13:17:00	00:44:00	Dambo
A-22	12° 5'34.05"S	31°14'33.90"E	1,361 m	03.11.19	14:19:00	15:24:00	01:05:00	Mixed: Watercourse, Dambo
A-24	11°52'55.98"S	31°24'50.51"E	1,354 m	03.11.19	16:40:00	17:05:00	00:25:00	Mixed: Watercourse, Dambo
A-24	11°52'55.98"S	31°24'50.51"E	1,354 m	04.11.19	06:36:00	07:22:00	00:46:00	Mixed: Watercourse, Dambo
A-26	11°50'44.10"S	31°23'19.01"E	1,312 m	04.11.19	08:15:00	08:59:00	00:44:00	Mixed: Watercourse, Dambo
A-27	11°47'26.34"S	31°20'32.27"E	1,381 m	04.11.19	11:12:00	12:26:00	01:14:00	Mixed: Watercourse, Dambo
A-28	11°41'56.00"S	31°18'46.46"E	1,421 m	04.11.19	13:01:00	14:19:00	01:18:00	Regenerating Miombo Woodland
A-29	11°34'0.50"S	31°16'37.79"E	1,310 m	04.11.19	15:17:00	16:06:00	00:49:00	Mixed: Watercourse, Dambo, Riverine Forest
A-30	11°29'49.92"S	31°16'6.11"E	1,307m	04.11.19	16:13:00	17:00:00	00:47:00	Mixed: Watercourse, Dambo

ID NUMBER	LATITUDE	LONGITUDE	ELEVATION	DATE	TIME (START)	TIME (END)	SURVEY TIME	HABITAT
A-31	11°25'1.03"S	31°13'44.13"E	1,360 m	05.11.19	06:13:00	06:44:00	00:31:00	Regenerating Miombo Woodland
A-32	11°19'37.23"S	31°12'42.03"E	1,338 m	05.11.19	07:12:00	08:02:00	00:50:00	Mixed: Watercourse, Dambo
A-33	11°17'52.86"S	31°10'48.23"E	1,332 m	05.11.19	08:47:00	10:28:00	01:41:00	Mature Woodland
A-36	11° 0'59.73"S	31° 3'29.89"E	1,248 m	05.11.19	12:11:00	12:54:00	00:43:00	Regenerating Miombo Woodland
A-37	10°56'52.60"S	31° 3'43.48"E	1,191 m	05.11.19	13:21:00	14:27:00	01:06:00	River: Chambeshi River
A-38	10°51'12.58"S	31° 9'58.21"E	1,202 m	06.11.19	15:35:00	16:28:00	00:53:00	River: Chambeshi River
A-39	10°41'15.48"S	31°10'35.15"E	1,234 m	06.11.19	14:10:00	14:50:00	00:40:00	Mixed: Miombo Woodland, Dambo
A-40	10°37'33.47"S	31°10'14.73"E	1,213 m	06.11.19	11:37:00	12:56:00	01:19:00	Mixed: Watercourse, Regenerating Miombo Woodland
A-41	10°31'37.90"S	31°11'31.04"E	1,245 m	06.11.19	09:40:00	11:05:00	01:25:00	Mature Woodland
A-42	10°20'42.16"S	31° 9'56.22"E	1,244 m	06.11.19	07:04:00	08:17:00	01:13:00	Mixed: Watercourse, Dambo
A-47	10°15'36.51"S	31°13'14.74"E	1,370 m	07.11.19	06:21:00	07:26:00	01:05:00	Base of Hill Slope
A-49	10°12'15.11"S	31°15'30.51"E	1,398 m	07.11.19	08:14:00	09:20:00	01:06:00	Forest Reserve
A-51	10°11'49.30"S	31°15'45.65"E	1,386 m	07.11.19	09:52:00	10:53:00	01:01:00	Mixed: Watercourse, Dambo, Riverine Forest
A-52	10° 7'1.61"S	31°20'59.23"E	1,328 m	07.11.19	12:09:00	13:11:00	01:02:00	Mixed: Watercourse, Dambo, Riverine Forest
A-55	9°56'58.19"S	31°33'0.26"E	1,325 m	08.11.19	08:09:00	09:13:00	01:04:00	Regenerating Miombo Woodland
A-57	9°47'33.62"S	31°41'8.81"E	1,234 m	08.11.19	11:26:00	12:23:00	00:57:00	Watercourse

ID NUMBER	LATITUDE	LONGITUDE	ELEVATION	DATE	TIME (START)	TIME (END)	SURVEY TIME	HABITAT
A-59	9°38'1.84"S	31°52'13.75"E	1,407 m	08.11.19	13:53:00	15:01:00	01:08:00	Mixed: Mature Woodland, Inselberg
A-62	9°18'29.32"S	32°21'49.18"E	1,261 m	09.11.19	11:01:00	12:02:00	01:01:00	Mixed: Mature Woodland, Inselberg
A-65	9°22'32.23"S	32°34'49.85"E	1,413 m	09.11.19	08:20:00	09:46:00	01:26:00	Mixed: Watercourse, Miombo Woodland
A-66	9°22'29.82"S	32°36'31.02"E	1,484 m	09.11.19	06:42:00	07:50:00	01:08:00	Mixed: Miombo Woodland, Subsistence Agriculture
Average survey time at each point count					**01:00:24**			

COUNTS OF LARGE TERRESTERIAL SPECIES AND RAPTORS

A fairly significant proportion of the survey time was spent driving to point count locations, to establish the occurrence for large terrestrial species and raptors that are particularly vulnerable to collisions with powerline infrastructure. These species are relatively easily detected from a vehicle, hence vehicle-based counts are conducted in order to determine the number of birds of relevant species in the study area. Detection of these large species is less dependent on their activity levels and calls, so these counts can be done throughout the course of the day.

Eleven vehicle-based surveys were conducted during the survey period (Table 4) and were conducted over a single route, comprised of the total length of the roads travelled during the survey period on each day, limited by the existing roadways, but as far as possible, in areas that are representative of the avifaunal habitats within proposed development area (Figure 1). All sightings of large terrestrial birds and raptors were recorded according to a set list of variables, on hard copy data sheets.

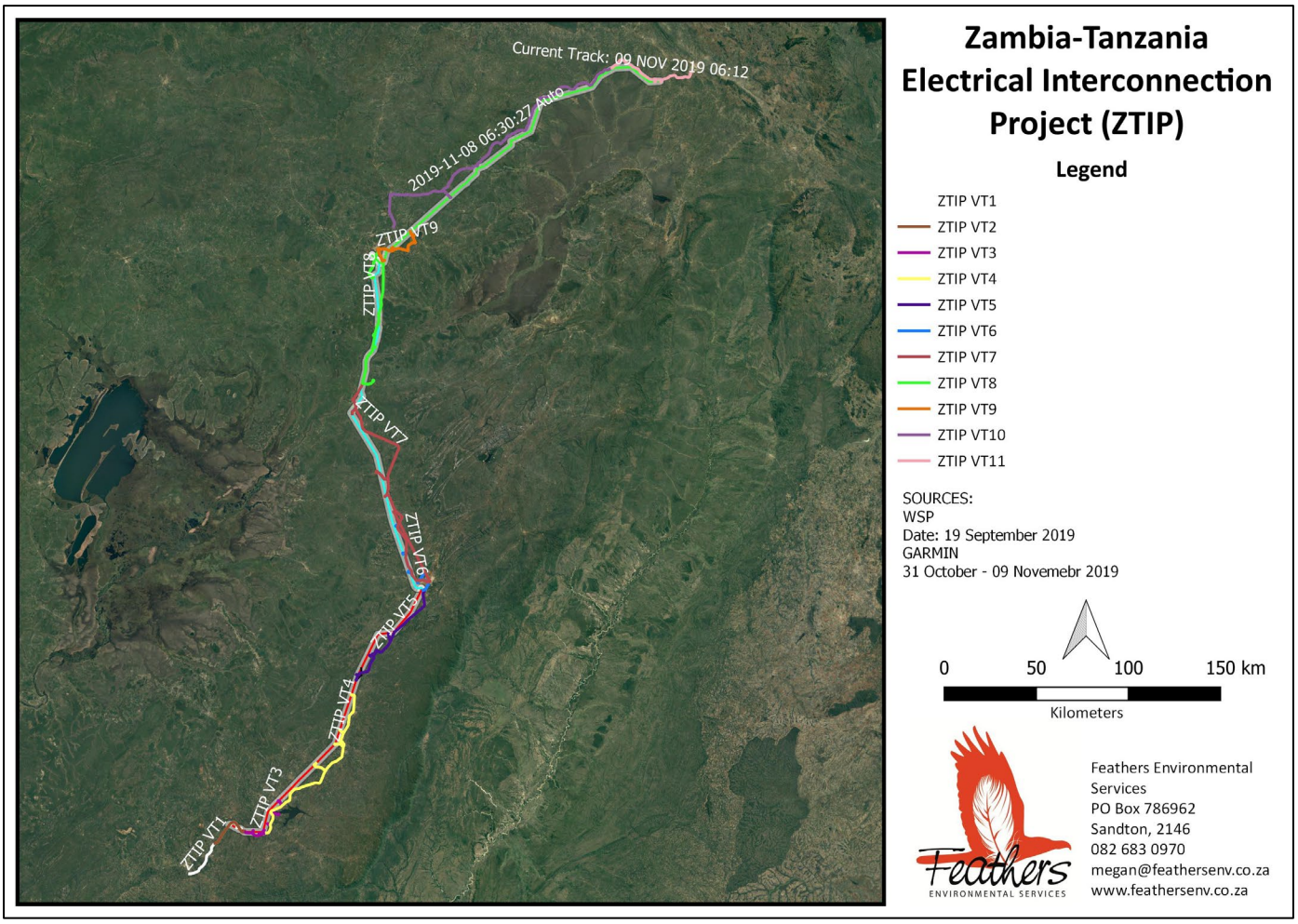


Figure 1 **Vehicle-Based Survey Locations Along the Proposed Powerline Alignment**

Table 4 **Vehicle-Based Survey Locations and Distances Covered During the Rapid Field Survey**

ID NUMBER	LOCATION	DATE	ODOMETER READING (START)	ODOMETER READING (END)	DISTANCE COVERED	TIME (START)	TIME (END)
A-VT1	Between point count 1-3	31.10.19	483.2	537.2	54.0 km	05:48:00	10:35:00
A-VT2	Between point count 4-5	31.10.19	543.3	571.6	28.3 km	15:20:00	17:52:00
A-VT3	Between point count 5-11	01.11.19	636.6	708.7	72.1 km	06:06:00	17:03:00
A-VT4	Between point count 12-17	02.11.19	938.9	1,093.5	154.6 km	06:47:00	15:23:00
A-VT5	Between point count 18-25	03.11.19	1,093.5	1,196.5	103 km	06:44:00	17:09:00
A-VT6	Between point count 25-30	04.11.19	1,286.7	1,376.6	89.9 km	06:36:00	17:02:00
A-VT7	Between point count 31-37	05.11.19	1,479.2	1,644.5	165.3 km	05:21:00	14:15:00
A-VT8	Between point count 38-42	06.11.19	1,688.5	1,814.5	126 km	06:19:00	16:41:00

ID NUMBER	LOCATION	DATE	ODOMETER READING (START)	ODOMETER READING (END)	DISTANCE COVERED	TIME (START)	TIME (END)
A-VT9	Between point count 47-52	07.11.19	1888,6	1,983.9	95.3 km	05:53:00	14:12:00
A-VT10	Between point count 55-57	08.11.19	2,045.4	2,251.4	206 km	06:30:00	19:05:00
A-VT11	Between point count 62-66	09.11.19	2,329.4	2,396.1	66.7 km	06:12:00	12:09:00

FOCAL SITE SURVEYS

Any particularly sensitive site such as breeding locations, wetlands, and large waterbodies and existing powerline infrastructure, were identified and assessed during the field survey.

Waterbodies and Wetlands

A single waterbody focal site, Lake Lusiwasi, was established to determine the diversity and density of water dependent species, which may utilize this area as a roost, migratory staging ground, or flyway, increasing the risk of collision with the proposed powerline alignment (see Map 5-13). Two surveys were conducted at this location, one in the afternoon, and another in the early morning, in order to account for birds that may have accumulated at the site in the evenings. All species observed at this focal site were recorded according to set variables. Priority species flight patterns were also recorded.

Nest Sites

Standard protocol requires that nest sites belonging to priority species be georeferenced, photographed, and evidence of breeding activity recorded according to the set categories. No priority species nest sites were observed during the survey period, however, observations of nest sites belonging to non-priority species were recorded, on hard copy data sheets, according to set variables.

PowerLine Infrastructure

Powerline infrastructure close to point count locations were surveyed for signs of bird collisions and electrocutions. Mortalities provide a better understanding of the impact of the existing operational infrastructure on the avifaunal community, based on specific habitat or topographical features (i.e., relating to the arrangement of the physical features of an area) that may contribute to a higher collision/electrocution risk. Sections of the existing powerline infrastructure that run parallel to the proposed 330 kV powerline alignment were assessed for signs of mortality, specifically at point counts 1, 3, 5, 6, 8, 11, 12, 14, 15, 17, 18, 22, 28, 31, and 38.

Incidental Sightings

Incidental sightings of Red List species (particularly those suggestive of breeding or important feeding, roosting sites, staging grounds, and migratory flyways) observed during the field survey were recorded and georeferenced. Incidental observations were carried out over the 14-day survey period.

BATS

SURVEY METHODOLOGY

Bat surveys were carried out at six different sites within the study area by trapping, using mist nets and hand nets, collecting acoustical evidence using a bat detector, and visual inspection. The sites were identified by selecting areas already known to host important bat roosts, or likely to have high bat populations or diversity. Survey sites, and the number of nets, are described in Table 5 and illustrated in Maps 5-11 to 5-13. Completed survey sheets, as well as photos of the different survey sites, are included in Appendix 5-8.

Table 5 Location of Survey Sites Visited during the Survey Campaign

Station ID	Number of Nets	Associated Habitat	Elevation (m)	Date	Period of Day	Latitude	Longitude
B1 – Kasama Forest Reserve	6 1	Between riverine woodland/Rocky outcrops Near rocky outcrops	1,400 m	November 1-2, 2019	18:00 – 21:00 hrs	-10.2061	31.2435
B2 – Dambo 40 km East of Nakonde	4 6	Between woody patches in dambos next to secondary Miombo woodlands Transition zone between dambos and Miombo woodlands	1,291 m	November 3-4, 2019	18:00 – 21:30 hrs	-9.2791	32.3974
B3 – Woodland 50 km N-W of Mpika	2 9	Powerline wayleave next to secondary Miombo woodlands Secondary Miombo woodlands	1,347 m	November 6, 8, 2019	18:00 – 21:30 hrs	-11.448	31.2434
B4 – Nachikufu Caves	2 4 4	Caves in rock outcrops Miombo woodlands Open area near Riverine woodlands	1,435 m	November 7, 9, 2019	18:00 – 22:00 hrs	-12.2320	31.1446
B5 – Kanona Forest Reserve	6	Mature Miombo woodlands	1,622 m	November 10, 2019	18:00 – 21:00 hrs	-13.0641	30.5600
B6 – Lake Lusiwasi	6	Wetlands (edges of lakes)	1,565 m	November 11, 2019	18:30 – 21:30 hrs	-12.9689	30.6515

At each site, a walkover was first carried out in potential habitats and roosts, checking for guano, evidence of roosts and feeding signs. Between 2 and 6 mist nets were then set up in areas judged as being favourable for bat activity. Nets were opened between approximately 18:00 and 21:20 hrs. The nets were checked frequently during this time and captured bats were removed to collect information on sex, age, reproductive condition and body measurements. They were identified where possible. Most bats were then released, but when identity could not be ascertained, certain specimens were preserved for further examination. At one roost site (B4 - Nachikufu caves), hand nets were employed to catch roosting bats.

Two bat detectors were deployed during the surveying. An Anabat (frequency division) detector was kept on, and recording, for the duration of the surveys at each site (approximately 4 hours each night), while an Echo Meter Touch 2 (active full spectrum) detector was used occasionally to help identify certain species. Surveys were repeated once at each site except for sites B5 and B6.

Some other potential roost sites were also surveyed briefly during the day for the presence of bats, namely Thorn Tree Guest House in Kasama and Mwela Rock Art Site, near Kasama.

ADDITIONAL DATA

Bat species within the study area have also been described using information collected from a literature review and review of existing data, including known occurrences from the Global Biological Information Facility (GBIF, 2019) and the African Chiroptera Report (ACR, 2018). Consultations with conservation NGOs, such as Kasanka Trust, have allowed further information on species and migration routes to be gathered.

During the field surveys, local people were also consulted about known bat roosts, namely Hazel Powel, co-owner of Thorn-tree Guest House, the caretaker at Mwela Rock Art site, and Benedict Mukoso, the caretaker at Nachikufu Caves.

LARGE MAMMALS

DATA COLLECTION METHODOLOGY

A rapid assessment was undertaken for terrestrial mammals, particularly large mammals, present in the Project area, and to validate the information generated from the desk review study previously undertaken in the ESIA (WSP, 2019).

Key informants were identified based on their work regarding mammals in the study area using both purposive and snowball sampling approaches. Purposive sampling was used to identify stakeholders working directly in the conservation and management of large mammals, while snowball sampling was employed to recruit other participants that were not easily identified using the purposive sampling method.

Each of the key informants consulted were asked to identify individuals they knew had information relating to the presence and distribution of large mammals in the area. Key organizations consulted include the Forestry Department (FD), the Department of National Parks and Wildlife (DNPW), and Community Resource Board (CRB).

A total of eleven interviews/consultative meetings were held between November 5-8, 2019, in the areas along the powerline from Serenje, Kanona, Kalonje, Mpika, Kasama, and Nakonde. Table 6 provides a summary of key informants interviewed/consulted.

Table 6 Key Informants Consulted during the Validation Study, November 5-8, 2019

No	Name	Designation	Organization	Date	Time	Place of meeting
1.	Paul Lee Chibuye	District Forest Officer	Serenje district FD	4.11.19	16:00hrs	FD - Serenje
2.	Alfred Mwimba	Warden - Serenje	DNPW – Kasanka Area Management Unit	4.11.19	16:30hrs	DNPW - Serenje
3.	Slyvester Kangwa	Forest Officer	Serenje district FD	5.11.19	08:00hrs	FD - Serenje
4.	Kennedy Mwansa	Senior Wildlife Police Officer	DNPW - Kanona Sector	5.11.19	10:30hrs	DNPW – Kanona Wildlife Police Camp
5.	Mwansa Chisenga	Ecologist	DNPW – Bangweulu Area Management Unit	6.11.19	08:30hrs	DNPW – Mpika
6.	Victor Makombe	Planner	DNPW - Bangweulu Area Management Unit.	6.11.19	08:30hrs	DNPW – Mpika
7.	Brian Saili	Mpumba CRB Chair	Mpumba CRB	6.11.19	14:11hrs	Landmark lodge - Mpika
8.	Samuel Zgozi	Senior Wildlife Ranger	DNPW - Nsumbu Area Management Unit	7.11.19	08:00hrs	DNPW Offices – Kasama
9.	Boyd Zulu	Senior Wildlife Police Officer	DNPW - Nsumbu Area Management Unit	7.11.19	08:30hrs	DNPW Offices - Kasama
	Kingford Mucleta	Senior Wildlife Police Officer				
	Peter Mambwe	Wildlife Police Officer				
10.	Sharon Kaunda	Forestry Officer	Provincial Forestry Department	7.11.19	10:00hrs	Provincial office - Kasama
11	Luckson Simwanza	Intelligence Officer	DNPW - Nsumbu Area Management Unit	8.11.19	08:00hrs	DNPW - Nakonde

A data collection tool (Appendix 5-10) was designed to capture information on the key aspects of the BMMP including information on species present, distribution and habitats, migratory routes, impacts and their mitigations, and monitoring and management of species.

To aid discussions, we presented maps of the Project area and explained the proposed location of the construction and establishment of the powerline. Responses to all the filled-out data forms are contained in Appendix 5-10. Presence of large mammals around Nkole Mfumu, Chilonga, Chikwanda, Kashiviya, Kashita, Kalonje, and Mpika were verified by DNPW's records of human wildlife conflicts.

ECOSYSTEM SERVICES

Ecosystem services provided within the study area are described and analyzed to determine the priority ecosystem services (PES). The PES are classified into two categories according to specific circumstances:

Type I ES will be considered priority under the following circumstances:

- Project operations are likely to result in a significant impact on the ES;
- The impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and
- The project has direct management control or significant influence over the ES.

Type II ES will be considered priority under the following circumstances:

- The project directly depends on the ES for its primary operations; and,
- The project has direct management control or significant influence over the ES.

Community (Type I) or project performance (Type II) dependence level to ES, interaction with drivers of change on ES (Type I) or with Project operations (Type II) and ES replaceability and management potential are assessed using the criteria presented in Table A. The matrix used to identify PES based on these criteria is presented in Table B.

Table A Priority ecosystem service assessment criteria

Level of Dependence on the ES – for affected communities and their well-being (Type I) or for Project performance (Type II)	
Low	A few households/communities are beneficiaries for this given ES or this ES contributes slightly to their well-being (Type I) or the Project depends slightly on ES and its performance is slightly affected by the loss. The intensity of use and the degree of dependence are low.
Medium	Benefit from the ES is important among local communities or generalised for given groups (Type I) or the ES loss could affect Project performance without compromising it (Type II). Intensities of benefit and degrees of dependence are variable.
High	Widespread or significant benefit for local communities and ES is of major importance for them (Type I). Project performance is considerably reduced by the ES loss (Type II). Benefit is high and degree of dependence is major.
Interaction with drivers of change on ES (Type I) or with Project operations (Type II)	
Low	The ES can slightly be impacted without changing significantly its availability for beneficiaries or for Project performance. The disturbance can be within the normal range of natural variations.
Medium	The ES can be altered at a point where the availability for beneficiaries or for Project performance can be reduced. However, the impact does not threaten the long-term viability of the ecosystem which provides the ES.
High	The ES can be lost, or a significant proportion of its availability could be reduced for beneficiaries or for Project performance. The long-term viability of the ecosystem which provides the ES is threatened.
Replaceability/Management potential – accessibility and efficiency of possible alternative to the ES affected	
Low	Highly specific ES, with no alternatives easily accessible or effective.
Medium	Some alternatives exist even if they are less favourable. Beneficiaries can access to the ES considering their capacity to pay or to find an effective alternative.
High	Many accessible and effective alternatives for beneficiaries.

Table B Determination matrix for identification of priority ecosystem services

LEVEL OF DEPENDENCE	INTERACTION WITH DRIVERS OF CHANGE AND PROJECT OPERATIONS	REPLACEABILITY	PES
Low	Low	Low	Not PES
		Medium	Not PES
		High	Not PES
	Medium	Low	Not PES
		Medium	Not PES
		High	Not PES
	High	Low	PES
		Medium	Not PES
		High	Not PES
Medium	Low	Low	Not PES
		Medium	Not PES
		High	Not PES
	Medium	Low	PES
		Medium	Not PES
		High	Not PES
	High	Low	PES
		Medium	PES
		High	Not PES
High	Low	Low	Not PES
		Medium	Not PES
		High	Not PES
	Medium	Low	PES
		Medium	PES
		High	Not PES
	High	Low	PES
		Medium	PES
		High	Not PES

APPENDIX

5-3 *FLORA SURVEY SHEETS*

plot1

VEGETATION SURVEY SHEET

Date : 29/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	08:32	**Time at end :**	09:20		
Habitat types (circle)	Grassland / (Woodland)	Dambos / Swamp Forest	Riverine Forest / Wetland:	Agricultural mosaic / permanent / temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy soil charcoal burning, tree cuttings				
Successional stage (circle)	Mature	(Secondary)	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 8.5	Avg: 5.3		**DBH** Max: 28.7	Avg: 16	
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 65		**Shrub layer cover (%)** 75		**Ground cover (%)** 15	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Monotes katangaensis	2	Swartzia madagascariensis	1	Commelina	1
Brachystegia microphylla	2	pterocarpus Angolensis	1	Cyperus papyrus	1
Anisophyllea boehmii	1	Ochna Schweinfurthiana	2	Actocephalus	
Brachystegia manga	3	memecylon flavovirens	1	Eugenia paivaeana	
parinari curatellifolia	1	Albizia antunesiana	1	Ampelocissus obtusata	
Burkea africanum	2	Byrsocarpus orientalis	1	Dolichos kilimandscharicu	
Albizia anthunesiana	2	Lannea edulis	1	chlorophytum pauper	
Brachystegia taxifolia	1	Vitex doniana	1	Dracaena stenoptera	
Brachystegia taxifolia	1	protea Angolensis	1		
Pombeya erythroleuca	1	Julbernardia paniculata	2		
		pterocarpus	1		
		Hymenodictyon	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

P1&2

VEGETATION SURVEY SHEET

Date : 29/10/2015			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	10:05	**Time at end :**	10:50		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic permanent temporary	Other :
	Woodland	Swamp Forest	Wetland:		
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic soils (clay) water present cultivation and burning				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 4 Avg: 3			**DBH** Max: 10.2 Avg: 8.4		
Density Stem/ha :					

Species list

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 20		**Shrub layer cover (%)**		**Ground cover (%)** 85	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Syzygium guineese	1			cyprus esculanthus	2
Syzygium cordatum	1			Crotalaria	2
Eragrostis superba	1			Hyperenia	3
				Juncas	1
				Euphorbia heterophylla	3
				Sesbania macrantha	1
				gladiolus	2
				Blossolis sp	3
				Eragrostis superba	1
				Asolepis capensis	
				Eragrostis superba	

Epiphytes

Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

Plot 3

VEGETATION SURVEY SHEET

Date : 29/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	12:19	**Time at end :**	12:45		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent / temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy Fire, cutting, charcoal				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 8.4 Avg: 8.4			**DBH** Max: 35 Avg: 8.7		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 20		**Shrub layer cover (%)** 70		**Ground cover (%)**	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Dicrocoss angolensis	1	Julbernardia paniculata	4	Gmelina buchanani	1
Brachystegia Mangs	1	Brachystegia jasoeni	1	Loudetia simplex	1
Uapaca kirkiana	2	Secundaca longipedunculata	1	Ascolepis elata,	1
Pannari Curatifolia	1	Combretum collinum	1	Xyris ledermannii	
Gmelina buchanani	1	psorospermum febrifugum	1		
		Faurea speciosa	1		
		albizia anthelmintica	1		
		asparagus setaceus	1		
		Fadogia spp	1		
		Cyphostemma juncaeum	1		
		Indigofera podocarpa			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

4

VEGETATION SURVEY SHEET

Date : 29/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	14:10	**Time at end :**	14:31		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic permanent temporary	Other :
	Woodland	Swamp Forest	Wetland:		
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam soil Fire, digging, cutting				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 6	Avg: 3.05	**DBH** Max: 28	Avg: 13.9		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 60%		**Shrub layer cover (%)** 70		**Ground cover (%)**	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Faurea speciosa	2	Brachystegia spiciformis	2	Buchnera randii	
Uapaca nitida	4	Faurea speciosa	2	Solenostemon zambesiacus	1
Cussonia spp	1	Uapaca nitida	3	Sonchus schweinfurthii	1
Brachystegia spiciformis	1	Parinari curatellifolia	1	Crotalaria grandibracteata	1
		Monotes africanus	1		
		Uapaca kirkiana	1		
		Erythrina abyssinica	1		
		Vitex monteiroi	1		
		Fadogia katangensis			

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

5

VEGETATION SURVEY SHEET

Date : 29/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	15:36	**Time at end :**	16:04		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	(Woodland)	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	clay soil / Sandy anthill, excavations activities				
Successional stage (circle)	(Mature)	Secondary	Young fallow land	Anthropic stage	

For ligneous species

Height Max: 14 Avg: 4.9 **DBH** Max: 50.2 Avg: 13

Density Stem/ha :

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 85		**Shrub layer cover (%)** 45		**Ground cover (%)** 10	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Oussonia abocensis	1	Garcinia Hyllensis	1	Cryptocaplum	3
Faurea speciosa	1	Oussonia abocensis	2		
Monotes Africanum	1	Byrsocarpus orientalis	1		
Julbernardia paniculata	4	Uvaria	1		
Pseudolachnostylis maprouneifolia	2	Ochna Shweinfurthiana	2		
Pericopsis Angolensis	1	Ochna aborata	2		
Burkea africana	1	Phyllocosmus	1		
Dalbergia nitida	1	Diospyros reticulata	1		
Monotes Shweinfurthiana	3	Ochna angolensis	1		
Afzelia quanzensis	1				
Brachystegia utilis	1				
Lannea discolor	1				
Combretum Curatellifolium	2				
Strychnos quinesii spp	1				
Strychnos spinosa	1				

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

6

VEGETATION SURVEY SHEET

Date : 30/10/2019			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	08:12	**Time at end :**	08:35		
Habitat types (circle)	Grassland / Woodland	Dambos / Swamp Forest	Riverine Forest / Wetland:	Agricultural mosaic permanent / temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy soils with Rock outcrops Tree cuttings				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 10	Avg: 4.7		**DBH** Max: 48.5	Avg: 12.6	
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 65		**Shrub layer cover (%)** 75		**Ground cover (%)** 15	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Bradystegia microphylla	2	Verosta epistiphia	1	Loudnicia simplex	4
Syzygium guineense	2	Combretum Molle	1	Loudnicia Angustifolia	4
Faurea Speciosa	1	pteracarpus Angolensis	1	Murdannia simplex	
Erythrophleum Africanum	1	Albizia antunesiana	1	Polygala limbatum	
[illegible]		Parinari Curatellifolia	1	Aeolanthus parrifolius	
Pericopsis	1	Ochna Schweinfurthiana	1	Fadogia triphylla	
		Burkea Africanum	1		
		Memecylon flavovirens	1		
		Ximenia Americana			
		Mucuna, Stans			
		Aeolanthus			
		pamfolius			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:
epiphytes on Syzygium guineense

VEGETATION SURVEY SHEET

Date : 20/10/2017		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	10:03	**Time at end :**	10:25		
Habitat types (circle)	Grassland	Dambos (grasses)	Riverine Forest	Agricultural mosaic permanent temporary	Other :
	Woodland	Swamp Forest	Wetland:		
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic soils (loam) water cultivation, tree cutting, gardening (maize, vegetables)				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 10 Avg: 6.25			**DBH** Max: 31 Avg: 18.3		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 20		**Shrub layer cover (%)** 2%		**Ground cover (%)** 40	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Dauvoya cafra	1	Erythina abyssinica	1	Phyllanthus	1
acassia polyacanth	1	mermemia pterygocaidea	1	phragmatics	4
Bridelia micrantha	2			palmosa	1
Salix subserrata	1			Chlorophytum	1
Ziziphus abyssinica	1			Bidin spilos	1
Euphorbia heterophylla	1			African lily	1
				bhumea	2
				Corellina longuelinos	2
				panicum maxima	1
				hyperemic sp.	2
				Euphorbia heterophylla	
				Merremia pterygocaulos	

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

6

VEGETATION SURVEY SHEET

Date : 30/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	12:26	**Time at end :**	12:50		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Clay soil (organic) Water presence Tree cutting, grazing area				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 12 Avg: 5.2			**DBH** Max: 37 Avg: 12.4		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 50		**Shrub layer cover (%)** 70		**Ground cover (%)** 70	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Annona senegalensis	1	Phyllanthus muller anus	1	Rhus lancipes	1
Cassia Sengueng	1	Pilostigma thonningii	1	Imperata cylindrica	2
Syconas cocoloides	1	Phyllanthus guineense	1	papyrus haitae	4
Acacia polyacantha	2	Cassia pohanthe	1	Vetyveria	2
Ficus Sycomorus	2	Grewia polycantha	1	Nelsonia canescens	
Euphorbia	1	dissolitis spp	1		
pericopsis angolensis	1	Antidesma venosum			
Pilostigma thonningii		Becium obovatum			

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

9

VEGETATION SURVEY SHEET

Date : 30/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	14:26	**Time at end :**	15;21		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam Cutting, old agricultural field				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 8.8	Avg: 3.2		**DBH** Max: 6.8	Avg: 3.4	
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 60		**Shrub layer cover (%)** 15		**Ground cover (%)**	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Julbernadia pamalta	3	diospyros viridis	1	Fadogia adorata	
protea angolensis	4	d-albezia nitida	1	Fagara macrophylla	
Syzygium macrocarpum	1	phyllanthus	1	Butbostylis	
Brachystegia utilis	2	Burkea africana	1	aphyllanthoides	
Uapaca kirkiana	1	Lannea discolor	1	Dicliptera melleri	
Burkea africana	2	Syconos acoloides	1	pentanisia schweinfurthii	
Faurea saligna	1	pappea capensis	1		
pterocarpus angolensis	1	Becium obovatum			
Monotis K-tagensis	2	Becium obovatum			
d-albezia nitida	1	Justicia			
Brachystegia glossem	3	Vernonia glaberima			
pseudolachnostylis maprouneifolia	1	Gardenia imperialis			
Swartzia madagascariensis	1	Rhus longipes			
Uapaca kirkd	1				
Cussonia arborea	-1				
Brachystegia Mangy	1				

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

10

VEGETATION SURVEY SHEET

Date : 30/10/2015			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	16:12	**Time at end :**			
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine/riparian Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy / clay digging Water present				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 6.8 Avg: 3.4			**DBH** Max: 20.6 Avg: 7.7		
Density Stem/ha :					
Species list					

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 60		**Shrub layer cover (%)** 20		**Ground cover (%)** 70	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
mauritius	1	Salix subserrata	2	phragm. fel. anthol.	3
Syzygium guineense	4			rothmania	2
Bridelia duvigneaudii	1			Paprus	1
Rhus longipes	1			polygonum	2
				commelic. benghalensis	2
				Ipomia	2
				Rhynchosia luteola hschu m var verdick	

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

VI

VEGETATION SURVEY SHEET

Date : 31/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	08:03	**Time at end :**	08:37		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent / temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam minor human disturbance, little fire effect				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species					
Height Max: 5.8	Avg: 4.2	**DBH** Max: 12	Avg: 3.6		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 80		**Shrub layer cover (%)** 50		**Ground cover (%)** 70	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Ximenia plossi	1	Brachystegia gossweileri	3	desmodium	1
Brachystegia gossweileri	3	monotes kerstingii	3	aloe spp	1
Julbernardia pellegrinii	2	rothmannia engleriana	1	dermatis brachiata	1
Daphne Bequaerti	2	Burkea africana	1	leucas	1
Uapaca nitida	2	Faurea Saligna	1	Ectadiopsis	
Protea Angolensis	1	Ochna schweinfurthiana	1	Oblongifolia	
Faurea Saligna	1	Terminalia sericea	1		
Pseudolachnostylis maprouneifolia	1	Merremia palmata	1		
Uapaca kirkiana	2	Strychnos innocua	1		
Maprounea Africana	1	Syzygium macrocarpum	1		
Annonaphyllum kaessneri	1	Crossopteryx obovata	1		
		Indigofera Livingstoniana			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

12

VEGETATION SURVEY SHEET

Date : 31/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	10:32	**Time at end :**	11:10		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent / temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam charcoal burning				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 13 Avg: 3.8			**DBH** Max: 49.5 Avg: 11.0		
Density Stem/ha : 13					

Species list

Tree strata

Canopy cover (%) 50

Species	BBS
Brachystegia Bussei	3
Monotes Katangensis	2
Pericopsis Angolensis	1
Strychnos madagascariensis	1
Pseudolachnostylis maprouneifolia	1
Flacourtia indica	1
Isoberlinia angolensis	1
Indigofera Livingstoniana	1

Shrub strata

Shrub layer cover (%) 75

Species	BBS
Faurea Saligna	1
Juxbernardia Paniculata	2
Brachystegia Bussei	3
Combretum Paniculatum	1
Uapaca Kirkiana	2
Garcinia Huillensis	1
Secundaca longepedunculata	1
Olax Obtusifolia	1
Phyllocosmus lemaireanus	1
Protea Angolensis	1
Uapaca Kirkiana	2
Combretum molle	1
Protea gilbbg	1
Hyscarpus Orientalis	1
Xylopia Stenophylla	1
Lannea Luxata	1

Herbaceous strata

Ground cover (%) 1

Species	BBS
Becium obovatum	1
Pteleopsis	1
Setaria homblei	
Gnidia chrysantha	

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

13

VEGETATION SURVEY SHEET

Date : 31/10/2019			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	11:34	**Time at end :**	12:05		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic loam cultivation, fires				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 12 Avg: 3.9			**DBH** Max: 30 Avg: 9.5		
Density Stem/ha :					
Species list					

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 2		**Shrub layer cover (%)** 10		**Ground cover (%)** 85	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Syzygium guineense	1	Protea gaba	2	Anisha sp	4
Bersama abyssinica				Cyperus sp	2
				Andiolons parply	2
				Galenia sp	2
				Carex sp	2
				Droogmansia	
				Pteropus var	
				Pteropus	
				Dissotis trothae	

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

14

VEGETATION SURVEY SHEET

Date : 31/10/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	13:20	**Time at end :**	14:00		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic soil Tree cutting				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 14 Avg: 7.9			**DBH** Max: 66 Avg: 25		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 70		**Shrub layer cover (%)** 75		**Ground cover (%)** 60	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Syzygium Cordatum	3	Syzygium cordatum	3	Crotalaria spp	2
Hohenackeria fischeri	2	Stegonotaenia araliacea	1	dissotis	3
Syzygium guineense	3	Garcinia livingstonei	1	Smilax	2
Parinari excelsa	2	Fadogia monticola	1	adenia gummifera	1
Bridelia micrantha	1	Lantana camara	1	Bracken fern	2
diplorhynchus Condylocarpon	2	Terminalia sericea	1	Lundi uncinulata	2
Vangueria madagascariensis	1	pterocarpus Angolensis	1	Hymenocardia acida	2
Protorhus speciosa	1	Combretum zeyheri	1	Aframomum angustifolium	1
magnistipula butayei	1	Lannea edulis	1	Etiosema rhodesicum	
Afzelia quanzensis	3	Hexalobus monopetalus	1	Strophanthus	
diospyros batocana	1	Albizia antunesiana	1	welwitschii	
Drogmansia		Borospermum fabrifugum	1	Asparagus	
pteropus variopteropus	1	Syzygium guineense	2	setaceus	
Bersama abyssinica		Syzygium owariense	2		
		Erythrina abyssinica	1		
		Protorhus	4		
		Bridelia grandis	3		
		Tricalysia coriacea			
		Rhus longipes			
		Clerodendrum			
		Formicarum			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

15

VEGETATION SURVEY SHEET

Date :		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	15:33	**Time at end :**	15:42		
Habitat types (circle)	Grassland / (Woodland)	Dambos / Swamp Forest	Riverine Forest / Wetland:	Agricultural mosaic permanent / temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam Fires, digging				
Successional stage (circle)	(Mature)	Secondary	Young fallow land	Anthropic stage	
For ligneous species Height Max: 22 Avg: 6.6			**DBH** Max: ~~76~~ Avg: 16.5		
Density Stem/ha :					
Species list					

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 90		**Shrub layer cover (%)** 40		**Ground cover (%)** 20	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Margaritaria Macrourus	4	Phyllocosmos lemaireanus	1	Smilax spp	1
Diplorhynchus condylocarpon	2	Tetrorchidium angustifolium	1	Afromomum angustifolium	1
Phyllanthus sp	1	Swartzia madagascariensis	1	Harungana madagascariensis	1
Mangifera Africanum		Terminalia stuhlmannii	1	Persea abyssinica	1
Pterocarpus Angolensis	1	Phyllanthus sp	1	Asparagus setaceus	1
Terminalia sericea	1	Magnistipula longifolia	1		
Garcinia Huillensis	1	Triumfetta pentandra			
Pseudolachnostylis maprouneifolia	1				
Hypaca sansibarica	1				
Parinari Curatellifolia	1				

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

16

VEGETATION SURVEY SHEET

Date : 1/11/2019			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	08:18	**Time at end :**	08:50		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	(Woodland)	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy loam Fires, tree cutting				
Successional stage (circle)	(Mature)	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 20 Avg: 9.8			**DBH** Max: 94 Avg: 22		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 90		**Shrub layer cover (%)** 80		**Ground cover (%)** 95	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Anisophyllea boehmii	1	Faurea saligna	1	Aframomum angustifolium	1
Magnistipula bangweolensis	1	Memecylon flavoviretus	1	Adenia gummifera	1
Syzygium aromaticum	1	diplorhynchus condylocarpon	1	Strophanthus	1
Baphia bequaerti	1	Phyllanthus spp	1	Tarenna (mulensis)	1
Marquesia macroura	4	albizia adianthifolia	1	Landolphia cauffa	1
Parinari auriculifera	2	Ficus spp	1		
Triumfetta delicatiana	1	Annes stuhlmannii	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

17

VEGETATION SURVEY SHEET

Date : 1st/11/2019		**Biologists:**			
Waypoints	04 24	**Photos (No):**			
Time at start:	09: 34	**Time at end :**	10:18		
Habitat types (circle)	Grassland / Woodland	Dambos / Swamp Forest	Riverine Forest / Wetland:	Agricultural mosaic / permanent / temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy tree cutting				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 16 Avg: 6.8 **Density** Stem/ha : 16 6.8			**DBH** Max: 18 Avg: 23.2		

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 40		**Shrub layer cover (%)** 85		**Ground cover (%)** 12	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
pannan Cralitifolia	1	Jatropha gossypifolia	1	Smilax spp	1
Brachystegia utilis	1	Brachystegia spiciformis	3	Sesamum angolense	1
monotes africana	1	phyllocosmos lemaireanus	1	Strophanthus eminii	1
Pseudolachnostylis maprouneifolia	1	Sobelina Angolensis	1	Eragrostis	
Syzygium mococarpum	1	Swertia madagascariensis	1	aethiopica	
Uapaca parivalii	1	Rothmania engleriana	1	cyphostemma	
Sobelina Angolensis	1	Brachystegia Manii	1	rhodesiae	
Triumfetta heliocarpa	1	Faurea Saligna	1		
		Rhus longipedis	1		
		Bphia beguaerti	1		
		uapaca Kirkiana	1		
		Hymenocardia acida	1		
		Canthium crassum	1		
		uapaca pilosa	1		
		Pericalan flavoviridis	1		
		Aeschynomene			
		rubrafamnaceae	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

18

VEGETATION SURVEY SHEET

Date : 1st November, 2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	11:38	**Time at end :**	12:20		
Habitat types (circle)	Grassland / Woodland (escarpment)	Dambos / Swamp Forest	Riverine Forest / Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	cuttings				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 8 Avg: 8.9			**DBH** Max: 11.2 Avg: 4		
Density Stem/ha : 8					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%)		**Shrub layer cover (%)** 80		**Ground cover (%)** 40	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Zanthoxylum gilletii		Brachystegia spiciformis	4	Inula glomerata	1
		Strychnos cocculoides	1	Phyllanthus retinervis	
		Ochna	1	Richardia	
		Julbernardia globiflora	2	scabra	
		Psorospermum	1	Eulophia olitelliferg	
		Lannea	1		
		Julbernardia			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

VEGETATION SURVEY SHEET

Date : 15 Nov 2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	13:57	**Time at end :**			
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest (mopane) Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy soil cutting / fire / erosion Hiker / rodent				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 20.2 Avg: 20.1			**DBH** Max: 16.7 Avg: 8.6		
Density Stem/ha :					

Species list

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 35		**Shrub layer cover (%)** 20		**Ground cover (%)** 65	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Tree fern	3	Anyllanthus	2	Pterochorus	1
Dahmani fisheri	1	Vahuraan	1	Juncus alpinoarticulatus	
muremba	3	dreadan	1	Hyparrhenia	1
Uapaca nitida	1	Pachystela brevipes		chromorum	2
Vitex mombassae	1			Bracken fern	3
Boehmeria	1			Murdannia	
albizia adianthifolia	1			simplex	
				Desmodium stolzii	
				cadabaria farinosa	

Epiphytes

Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

20

VEGETATION SURVEY SHEET

Date : 1st November, 2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	15:39	**Time at end :**	16:25		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic soil Tree cutting -water present				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 16 Avg: 11			**DBH** Max: 40 Avg: 32		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 90		**Shrub layer cover (%)** 100		**Ground cover (%)** 100	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Xylopia aethiopica	2	Pectarenthus	2	fern (lupulu)	3
Fagara macrophylla	1	Disorts	1	Gramanum	3
Uvaria with shiny	3	Rhus anchietae	2	Juncus	2
Bridelia micrantha	2			Nikolo (uf mushy)	
Sizigium guineense (lumbi)	1			Dolichos kilimandscharicus	
Sizigium Cordatum	3				
Khaya xylasica (pokun)	4				

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

21

VEGETATION SURVEY SHEET

Date : 2/11/19		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	12:23	**Time at end :**	13:20		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	-Tree cutting -Sandy loam -charcoal, forest fire				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 14 Avg: 5.6			**DBH** Max: 18 Avg: 5.5		
Density Stem/ha : 5.6					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 65		**Shrub layer cover (%)** 15		**Ground cover (%)** 20	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Pterocarpus Angolensis	1	Albizia Amara	1	Helicrasum sp	1
Brachestegia Manga	1	protea Hairy	1	Bersama abyssinica	1
Brachestegia gossweiri	1	Ucpea Kirkii	1		
Julbernardia pinnata	1	psorospermum	1		
Marquesia macroura	1	Securidaca longipendiculata			
Berlinia giorgi	1	Maerulus pelgandea			
pseudolachnostylis maprouneifolia	1	Lannea edulis	1		
Clerodendrum tangayikensis	1	Rhus longipeds	2		
		marquesia macroura	2		
		Uapaca spp	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

VEGETATION SURVEY SHEET

Date : 2/11/2015		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	14:05	**Time at end :**	14:50		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riparian Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy fire and erosion				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 18 Avg: 12.7			**DBH** Max: 35 Avg: 18.7		
Density Stem/ha :			35 18.7		

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 45		**Shrub layer cover (%)** 82		**Ground cover (%)** 60	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Syzygium guineense	2	Rothmannia fistulosa	1	Rhynchosia	2
Bridelia duvigneaudi	1	Diospyros	1	Phoenix pentacontra	2
Brachystegia spiciformis	1	Ordeal balanites	1	Phyllanthus	1
Albizia versicolor	1	Hymenocardia acida	1	Smilax	2
Vitex mombassae	1	Harungana madagascariensis	1	Juncus	2
Ziziphus abyssinica	1	Vitex mombassae	1	Andropogon	3
Phoenix reclinata	1	Hyparrhenia cymbaria	1	Desmodium	2
Acacia polyacantha	1	Combretum molle	1	Sporobolus	1
Canarium edulis		Terminalia Schimperiana	1	Hyparrhenia	1
Lantana rhodesiae		Carissa Edulis	1	Dissotis macrocarpa	
Cassia abbreviata		Albizia harveyi		Cadaba kirkii	
		Markhamia obtusifolia	1	Asparagus longicladus	
		Lippia plicata			

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

23

VEGETATION SURVEY SHEET

Date : 2/11/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	15:25	**Time at end :**	15:30		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	-Compacted loam soil -tree cutting				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 14.2 Avg: 7.2			**DBH** Max: 24 Avg: 7.7		
Density Stem/ha :					

Species list

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 50		**Shrub layer cover (%)** 65		**Ground cover (%)** 2	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Isoberlinia Angolensis	1	Brachystegia microphylla		Petenaea cymosa	
Uapaca Nitida	2	Burkea africana	1		
Uapaca Sansibarica	1	Hymenocardia acida	1		
Burkea Africana	1	Pterocarpus Angolensis			
Julbernardia Globiflora	2	dolichos			
Maranthes polyandra	1	garcinia huillensis	1		
		Parinari curatellifolia			
		Maprounea africana			
		diplorrhynchus condylocarpon	1		
		Vitex doniana	1		
		Annona senegalensis			
		Dracaena laxissima			

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

04

VEGETATION SURVEY SHEET

Date : 2nd November.		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	16:15	**Time at end :**	16:50		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	- hew cuttings, fires, charcoal - clay soil				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 8 Avg: 5.6			**DBH** Max: 13.4 Avg: 6.4		
Density Stem/ha :					

Species list

Tree strata		**Shrub strata**		**Herbaceous strata**	
Canopy cover (%) 75		**Shrub layer cover (%)** 60		**Ground cover (%)** 30	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Julbernardia paniculata	1	Flacourtia Indica	2	Sesamum angolense	1
Albizia antunesiana	2	Julbernardia	1	Smilax Kraussiana	1
Burkea Africana	1	Garcinia Huilensis	3	Fadogia fuchsioides	1
Pterocarpus Angolensis	1	Brocarpus cepposs	4		
Hyphaene coriacea	2	Strychnos macrocarpa			
Markhamia obtusifolia	1	Clerodendrum			
Ziziphus mauritiana	1	buchneri			

Epiphytes

Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

25

VEGETATION SURVEY SHEET

Date : 2/11/2019			**Biologists:**		
Waypoints			**Photos (No):**		
Time at start:	18:25	**Time at end :**	18:55		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent / temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy soil Old agricultural fields, old settlements				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	

For ligneous species

Height Max: Avg: **DBH** Max: Avg:

Density Stem/ha :

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 2		**Shrub layer cover (%)** 5		**Ground cover (%)**	
Species	**BBS**	**Species** (28)	**BBS**	**Species**	**BBS**
Markhamia obtusifolia		Clerodendron	1	Smilax	1
		Rauvolfia	2		
		Combretum Zeh	2		
		Albizia adianthifolia	1		
		Dissomna arborea	1		
		Vitex doniana	1		
		Rhus	1		
		Ouratea sp	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

26

VEGETATION SURVEY SHEET

Date : 3/11/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	10:36	**Time at end :**	10:57		
Habitat types (circle)	Grassland	Dambos	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland: (with trees)	permanent temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Fires, charcoal Sandy soil				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 18 Avg: 5.8			**DBH** Max: 20.38 Avg: 9.26		
Density Stem/ha : 9					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 40		**Shrub layer cover (%)** 80		**Ground cover (%)** 50	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Dombeya	1	Albizia thomasi	2	Barleria senensis	1
Syzygium guineense	1	Ficus cyperifolia	1	Smilax	1
Albizia amara	2	Pericopsis Angolensis	2	Cassia singueana	1
Diplorynchus condylocarpon	1	Mubanga chirindensis	1	Schrebera alata	1
Pterocarpus angolensis	2	Markamia obtusifolia	1	asparagus	1
		Albizia amara	1	phragmites mauritianus	1
		Vitex mombassae	1		
		Brideliz micrantha	1		
		Acacia Senegal	1		
		Erythrina abyssinica	2		
		Combretum	1		
		Phyllanthus	1		
		Anisotes kirkianus	1		
		Diospyros lanciodes	1		
		Tithonia abyssinica	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

VEGETATION SURVEY SHEET

Date : 3/11/2014		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	12:00hrs	**Time at end :**	12:56		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy soil, cultivation, dissing of sandy soil, tree cutting, fire				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 6.2 Avg: 4.4			**DBH** Max: 19.10 Avg: 7.57		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 40		**Shrub layer cover (%)** 60		**Ground cover (%)** 25	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Syzygium guineense	1	Erythrina abyssinica	1	Smilax	1/2
Ficus capensis	1	Ficus muricata	1	asparagus	
Isoberlinia Angolensis	1	Ficus - ancylanthus	1/2		
Phyllanthus spp	1	Bridelia micrantha	1/2		
pterocarpus angolensis	2	pterocarpus angolensis	2		
Afzelia quanzensis	1	Julbernardia globiflora	1		
Burkea africana	1	Hymenocardia acida	1		
albizia anthelmintica	1	Vitex doniana	1		
Schrebera alata	1	Afzelia quanzensis	1		
pterocarpus Angolensis	1	Strychnos cocculoides	2		
Dracaena laxissima	1	Psorospermum febrifugum			
		albizia Amara	1		
		Byrsocarpus orientalis	1		

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

28

VEGETATION SURVEY SHEET

Date : 3/11/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	13:10	**Time at end :**	13:56		
Habitat types (circle)	Grassland Woodland	Dambos Swamp Forest	Riverine Forest Wetland:	Agricultural mosaic permanent temporary	Other :
Structuring factors (soils, topography, water, human disturbances, etc.)	Organic soil Rock, cultivations, tree cutting				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max: 13 Avg: 8.9			**DBH** Max: 35 Avg: 16		
Density Stem/ha :					

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 50		**Shrub layer cover (%)** 60		**Ground cover (%)** 75	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
Strychnos cordata	1	acacia polyacantha	1	papilous	1
Anona senegalensis	1	combretum molle	1	Phragmites	1
mukanga	1	albizia harveyi	1	Hyperania	
Brachystegia dyeriana	1	pterocarpus angolensis	1	grasses (anthiopogon)	
ficus sycamorus	1	phyllanthus	1		
Vitex mombassae	1	albizia versicolor	1		
Lophira alata	1	Vanguerioppsis	1		
Ziziphus abyssinica	1				
albizia amara	1				

Epiphytes

Species	BBS

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

29

old dambo with termitalia

VEGETATION SURVEY SHEET

Date : 4/11/2019		**Biologists:**			
Waypoints		**Photos (No):**			
Time at start:	07:45	**Time at end :**			
Habitat types (circle)	Grassland	Dambos (old dambo)	Riverine Forest	Agricultural mosaic	Other :
	Woodland	Swamp Forest	Wetland:	permanent / temporary	
Structuring factors (soils, topography, water, human disturbances, etc.)	Sandy charcoal production ; dissig sand				
Successional stage (circle)	Mature	Secondary	Young fallow land	Anthropic stage	
For ligneous species **Height** Max:	14	Avg: 4.7	**DBH** Max:	17	Avg: 6.5
Density Stem/ha :	141	4.7			

Species list

Tree strata		Shrub strata		Herbaceous strata	
Canopy cover (%) 65		**Shrub layer cover (%)** 45		**Ground cover (%)** 35	
Species	**BBS**	**Species**	**BBS**	**Species**	**BBS**
albizia anhreziens	1	Secindaca longipedunculata	1	dalbergia	1
pitashoma thoningii	1	psorospermum feb 2	1	Orphan Striatus	1
Brachystegia spiciformis	1	Uapaca sansibarica	1		
Protea gilcans	1	protea micans	1		
Pterocarpus Angolensis	1	Tannea edulis	1		
Uapaca sansibarica					
Isoberlinia Angolensis	1				
Monotes Africana	1				
Dracaena laxissima	1				

Epiphytes	
Species	**BBS**

Braun-Blanquet scale	Range of cover (%)
5	75-100
4	50-75
3	25-50
2	5-25
1	<5; numerous individuals
+	<5; few individuals
r	solitary, with small cover

Additional information:

APPENDIX

5-4 FLORA SPECIES LIST

Flora Species Present and Potentially Present in the BESA

Family	Species	IUCN Red List	Endemism	Source
Acanthaceae	*Thunbergia alata*	NA		2019 Flora surveys / GBIF, 2024
Acanthaceae	*Dicliptera melleri*	NA		2019 Flora surveys
Acanthaceae	*Nelsonia canescens*	LC		2019 Flora surveys
Acanthaceae	*Justicia spp.*	NA		2019 Flora surveys
Acanthaceae	*Justicia elegantula*	NA		GBIF, 2024
Acanthaceae	*Hypoestes forskaolii*	NA		GBIF, 2024
Acanthaceae	*Lepidagathis nemorosa*	NA		GBIF, 2024
Acanthaceae	*Justicia phyllostachys*	NA		GBIF, 2024
Acanthaceae	*Justicia mollugo*	NA		GBIF, 2024
Acanthaceae	*Dyschoriste albiflora*	NA		GBIF, 2024
Acanthaceae	*Justicia betonica*	NA		GBIF, 2024
Acanthaceae	*Asystasia intrusa*	NA		GBIF, 2024
Acanthaceae	*Dicliptera pumila*	NA		GBIF, 2024
Acanthaceae	*Dicliptera carvalhoi*	NA		GBIF, 2024
Acanthaceae	*Thunbergia natalensis*	NA		GBIF, 2024
Acanthaceae	*Crabbea kaessneri*	NA		GBIF, 2024
Acteraceae	*Sonchus schweinfurthi*	NA		2019 Flora surveys
Amaranthaceae	*Amaranthus hybridus*	NA		2015-2016 Flora surveys
Amaranthaceae	*Celosia brasiana*	NA		2015-2016 Flora surveys
Amaranthaceae	*Celosia grandifolia*	NA		2015-2016 Flora surveys
Amaryllidaceae	*Scadoxus multiflorus*	NA		GBIF, 2024
Amaryllidaceae	*Boophone disticha*	NA		GBIF, 2024
Amaryllidaceae	*Crinum subcernuum*	NA		GBIF, 2024
Anacardiaceae	*Ozoroa insignis*	LC		2019 Flora surveys
Anacardiaceae	*Lannea discolour*	NA		2019 Flora surveys
Anacardiaceae	*Lannea edulis*	NA		2019 Flora surveys
Anacardiaceae	*Lannea stulmanni*	NA		2019 Flora surveys
Anacardiaceae	*Ozoroa reticulata*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Anacardiaceae	*Rhus fanshawei*	NA	Endemic	2019 Flora surveys
Anacardiaceae	*Rhus longipes*	NA		2019 Flora surveys
Anacardiaceae	*Rhus quartiniana*	NA		2019 Flora surveys
Anacardiaceae	*Lannea schweinfurthii var. stuhli*	NA		2015-2016 Flora surveys
Anacardiaceae	*Ozoroa pwentoensis*	NA		2015-2016 Flora surveys
Anacardiaceae	*Lannea edulis*	NA		GBIF, 2024
Anacardiaceae	*Lannea discolor*	LC		2015-2016 Flora surveys
Anacardiaceae	*Searsia longipes*	LC		2015-2016 Flora surveys
Anacardiaceae	*Searsia quartiniana*	LC		2015-2016 Flora surveys
Anacardiaceae	*Mangifera indica*	DD		GBIF, 2024
Anisophylleaceae	*Anisophyllea boehmii*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Annonaceae	*Annona senegalensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Annonaceae	*Artabotrys brachypetalus*	LC		2019 Flora surveys
Annonaceae	*Uvaria angolensis*	LC		2019 Flora surveys
Annonaceae	*Xylopia aethiopica*	LC		2019 Flora surveys
Annonaceae	*Annona stenophylla*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Annonaceae	*Artabotrys sp.*	NA		2015-2016 Flora surveys
Annonaceae	*Uvaria sp.*	NA		2015-2016 Flora surveys
Annonaceae	*Uvariopsis sp.*	NA		2015-2016 Flora surveys
Annonaceae	*Uvariopsis congensis*	LC		2015-2016 Flora surveys
Annonaceae	*Xylopia odoratissima*	LC		2015-2016 Flora surveys
Annonaceae	*Hexalobus menopotalus*	NA		2015-2016 Flora surveys
Apiaceae	*Pimpinella buchananii*	NA		2019 Flora surveys / GBIF, 2024
Apiaceae	*Alepidea peduncularis*	NA		2015-2016 Flora surveys / GBIF, 2024
Apiaceae	*Baumiella imbricata*	NA		2015-2016 Flora surveys
Apiaceae	*Steganotaenia araliacea*	LC		2015-2016 Flora surveys / GBIF, 2024
Apiaceae	*Heteromorpha arborescens*	LC		GBIF, 2024
Apocynaceae	*Strophanthus welwitschii*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Apocynaceae	*Landolphia kirkii*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Apocynaceae	*Rauvolfia caffra*	NA		2019 Flora surveys
Apocynaceae	*Diplolophium zambesianum*	NA		2015-2016 Flora surveys
Apocynaceae	*Strophanthus kombe*	NA		2015-2016 Flora surveys
Apocynaceae	*Strophanthus sp.*	NA		2015-2016 Flora surveys
Apocynaceae	*Strophantus spp*	NA		2015-2016 Flora surveys
Apocynaceae	*Glossostelma spathulatum*	NA		GBIF, 2024
Apocynaceae	*Cryptolepis oblongifolia*	NA		GBIF, 2024
Apocynaceae	*Pachycarpus lineolatus*	NA		GBIF, 2024
Apocynaceae	*Cynanchum viminale*	NA		GBIF, 2024
Apocynaceae	*Catharanthus roseus*	NA		GBIF, 2024
Apocynaceae	*Diplorhynchus condylocarpon*	LC		2015-2016 Flora surveys / GBIF, 2024
Apocynaceae	*Rauvolfia caffra*	LC		2015-2016 Flora surveys
Apocynaceae	*Landolphia parvifolia*	LC		GBIF, 2024
Apocynaceae	*Cascabela thevetia*	LC		GBIF, 2024
Aponogetonaceae	*Aponogeton desertorum*	LC		GBIF, 2024
Araliaceae	*Cussonia arborea*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Araliaceae	*Cussonia spicata*	NA		2019 Flora surveys
Araliaceae	*Cussonia sp.*	NA		2015-2016 Flora surveys
Araliaceae	*Cussonia corbisieri*	NA		GBIF, 2024

Family	Species	IUCN Red List	Endemism	Source
Arecaceae	*Phoenix reclinata*	LC		2019 Flora surveys
Arecaceae	*Hyphaene petersiana*	LC		2015-2016 Flora surveys
Arecaceae	*Raphia farinifera*	LC		2015-2016 Flora surveys / GBIF, 2024
Asclepiadaceae	*Ectadiopsis ablongifolia*	NA		2019 Flora surveys
Asparagaceae	*Asparagus longicladus*	NA		2019 Flora surveys
Asparagaceae	*Asparagus Setaceus*	NA		2019 Flora surveys
Asparagaceae	*Asparagus spp*	NA		2015-2016 Flora surveys
Asparagaceae	*Chlorophytum sp.*	NA		2015-2016 Flora surveys
Asparagaceae	*Chlorophytum velutinum*	NA		GBIF, 2024
Asparagaceae	*Albuca abyssinica*	NA		GBIF, 2024
Asparagaceae	*Ledebouria cordifolia*	NA		GBIF, 2024
Asparagaceae	*Eriospermum porphyrovalve*	NA		GBIF, 2024
Asparagaceae	*Ledebouria revoluta*	NA		GBIF, 2024
Asparagaceae	*Chlorophytum calyptrocarpum*	NA		GBIF, 2024
Asparagaceae	*Furcraea foetida*	NA		GBIF, 2024
Asparagaceae	*Agave sisalana*	NA		GBIF, 2024
Asparagaceae	*Agave angustifolia*	LC		GBIF, 2024
Asparagaceae	*Agave americana*	LC		GBIF, 2024
Asphodelaceae	*Aloe zebrina*	LC		2019 Flora surveys
Asphodelaceae	*Kniphofia grantii*	NA		GBIF, 2024
Asphodelaceae	*Aloe mzimbana*	NA		GBIF, 2024
Asteraceae	*Vernonia colorata*	LC		2019 Flora surveys
Asteraceae	*Dicoma angustifolia*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Asteraceae	*Inula glomerata*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Asteraceae	*Vernonia glaberima*	NA		2019 Flora surveys
Asteraceae	*Conyza spp*	NA		2015-2016 Flora surveys
Asteraceae	*Elephantropus scaber*	NA		2015-2016 Flora surveys
Asteraceae	*Helichrysum kirkii petersii*	NA		2015-2016 Flora surveys
Asteraceae	*Tagetes minima*	NA		2015-2016 Flora surveys
Asteraceae	*Crassocephalum rubens*	NA		GBIF, 2024
Asteraceae	*Galinsoga quadriradiata*	NA		GBIF, 2024
Asteraceae	*Baccharoides adoensis*	NA		GBIF, 2024
Asteraceae	*Helichrysum kirkii*	NA		GBIF, 2024
Asteraceae	*Erythrocephalum longifolium*	NA		GBIF, 2024
Asteraceae	*Tithonia diversifolia*	NA		GBIF, 2024
Asteraceae	*Centaurea praecox*	NA		GBIF, 2024
Asteraceae	*Tithonia rotundifolia*	NA		GBIF, 2024
Asteraceae	*Crassocephalum picridifolium*	LC		GBIF, 2024
Asteraceae	*Dicoma anomala*	NA		2015-2016 Flora surveys
Asteraceae	*Emilia integrifolia*	NA		2015-2016 Flora surveys
Balsaminaceae	*Impatiens assurgens*	NA		GBIF, 2024
Bignoniaceae	*Markhamia obtusifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Bignoniaceae	*Kigelia africana*	LC		GBIF, 2024
Bignoniaceae	*Tecoma stans*	LC		GBIF, 2024
Bignoniaceae	*Jacaranda mimosifolia*	VU		GBIF, 2024
Cactaceae	*Opuntia ficus-indica*	DD		GBIF, 2024
Campanulaceae	*Cyphia mazoensis*	NA		GBIF, 2024
Cannaceae	*Canna generalis*	NA		GBIF, 2024
Cannaceae	*Canna indica*	NA		GBIF, 2024
Capparaceae	*Boscia spp*	NA		2015-2016 Flora surveys
Capparidaceae	*Cadaba kirkii*	LC		2019 Flora surveys
Caryophyllaceae	*Silene burchellii*	NA		GBIF, 2024
Celastraceae	*Maytenus senegalensis*	NA		2015-2016 Flora surveys
Celastraceae	*Gymnosporia senegalensis*	LC		GBIF, 2024
Celastraceae	*Salacia rhodesiaca*	LC		GBIF, 2024
Chrysobalanaceae	*Magnistipula butayei*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Chrysobalanaceae	*Maranthes polyandra*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Chrysobalanaceae	*Parinari curatellifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Chrysobalanaceae	*Parinari capensis*	NA		2015-2016 Flora surveys / GBIF, 2024
Chrysobalanaceae	*Parinari excelsa*	LC		2015-2016 Flora surveys
Clusiaceae	*Garcinia livingstonei*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Clusiaceae	*Psorospermum febrifugum*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Clusiaceae	*Garcinia huillensis*	NA		2019 Flora surveys / 2015-2016 Flora surveys/
Clusiaceae	*Garcinia smeathmannii*	NA		GBIF, 2024
Colchicaceae	*Gloriosa superba*	LC		GBIF, 2024
Combretaceae	*Terminalia sericea*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Combretaceae	*Terminalia stenostachya*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Combretaceae	*Terminalia stulmannii*	NA		2019 Flora surveys
Combretaceae	*Combretum Spp*	NA		2015-2016 Flora surveys
Combretaceae	*Combretum adenogonium*	LC		2015-2016 Flora surveys
Combretaceae	*Combretum psidioides*	LC		2015-2016 Flora surveys
Combretaceae	*Combretum zeyheri*	LC		2015-2016 Flora surveys
Combretum	*Combretum collinum*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Combretum	*Combretum molle*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Combretum	*Combretum zeyherii*	LC		2019 Flora surveys
Commelinaceae	*Commelina benghalensis*	LC		2019 Flora surveys
Commelinaceae	*Murdannian simplex*	NA		2019 Flora surveys

Family	Species	IUCN Red List	Endemism	Source
Commelinaceae	*Commelina aspera*	NA		GBIF, 2024
Commelinaceae	*Commelina nigritana*	NA		GBIF, 2024
Commelinaceae	*Commelina neurophylla*	NA		GBIF, 2024
Commelinaceae	*Aneilema welwitschii*	NA		GBIF, 2024
Commelinaceae	*Commelina fluviatilis*	NA		GBIF, 2024
Commelinaceae	*Tradescantia spathacea*	NA		GBIF, 2024
Commelinaceae	*Commelina africana*	LC		GBIF, 2024
Commelinaceae	*Murdannia simplex*	LC		GBIF, 2024
Compositae	*Bidens pilosa*	NA		2015-2016 Flora surveys
Compositae	*Bidens sp.*	NA		2015-2016 Flora surveys
Compositae	*Blumea alata*	NA		2015-2016 Flora surveys
Compositae	*Blumea sp.*	NA		2015-2016 Flora surveys
Compositae	*Vernonia adoensis*	NA		2015-2016 Flora surveys
Compositae	*Vernonia sp.*	NA		2015-2016 Flora surveys
Connaraceae	*Rourea orientalis*	LC		2015-2016 Flora surveys / GBIF, 2024
Convolvulaceae	*Merremia pterygocaulos*	NA		2019 Flora surveys
Convolvulaceae	*Ipomoea bolusiana*	NA		GBIF, 2024
Convolvulaceae	*Ipomoea cairica*	LC		GBIF, 2024
Costaceae	*Costus spectabilis*	NA		GBIF, 2024
Crassulaceae	*Kalanchoe daigremontiana*	EN		GBIF, 2024
Cucurbitaceae	*Trochomeria macrocarpa*	NA		GBIF, 2024
Cucurbitaceae	*Trochomeria polymorpha*	NA		GBIF, 2024
Cucurbitaceae	*Cucumis hirsutus*	NA		GBIF, 2024
Cyatheaceae	*Cyathea dregei*	LC		2019 Flora surveys
Cyperaceae	*Ascolepis capensis*	LC		2019 Flora surveys
Cyperaceae	*Ascolepis elata*	LC		2019 Flora surveys
Cyperaceae	*Cyperus papyrus*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Cyperaceae	*Bulbostylis aphyllanthoides*	NA		2019 Flora surveys
Cyperaceae	*Cyperus esculantus*	NA		2019 Flora surveys
Cyperaceae	*Scleria poneoides*	NA		2019 Flora surveys
Cyperaceae	*Cyperus sp.*	NA		2015-2016 Flora surveys
Cyperaceae	*Eriocaulon sp.*	NA		2015-2016 Flora surveys
Cyperaceae	*Pycreus heterochrous*	NA		2015-2016 Flora surveys
Cyperaceae	*Cyperus niveus*	NA		GBIF, 2024
Cyperaceae	*Cyperus alatus*	NA		GBIF, 2024
Cyperaceae	*Cyperus aureobrunneus*	LC		2015-2016 Flora surveys
Dennstaedtiaceae	*Pteridium aquilinum*	NA		2015-2016 Flora surveys / GBIF, 2024
Dioscoreaceae	*Dioscorea hirtiflora*	LC		2015-2016 Flora surveys
Dioscoreaceae	*Tacca leontopetaloides*	LC		GBIF, 2024
Dipterocarpaceae	*Monotes adenophyllus*	LC		2019 Flora surveys
Dipterocarpaceae	*Monotes katangensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Dipterocarpaceae	*Monotes africanum*	NA		2019 Flora surveys
Dipterocarpaceae	*Monotes africana*	NA		2015-2016 Flora surveys
Dracaenaceae	*Dracaena Laxissima*	NA		2019 Flora surveys
Droseraceae	*Drosera sp.*	NA		2015-2016 Flora surveys
Droseraceae	*Drosera indica*	LC		GBIF, 2024
Droseraceae	*Drosera burkeana*	LC		GBIF, 2024
Droseraceae	*Drosera madagascariensis*	LC		GBIF, 2024
Droseraceae	*Drosera affinis*	LC		GBIF, 2024
Droseraceae	*Drosera elongata*	DD		GBIF, 2024
Ebenaceae	*Diospyros batocana*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Ebenaceae	*Diospyros mespiliformis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Ebenaceae	*Diospyros virgate*	NA		2019 Flora surveys
Ebenaceae	*Diospyros mweroensis*	NA	Near-endemic	2015-2016 Flora surveys
Ebenaceae	*Diospyros lycioides*	LC		2015-2016 Flora surveys
Ebenaceae	*Euclea crispa*	LC		GBIF, 2024
Ephorbiaceae	*Maprounea africana*	LC		2015-2016 Flora surveys
Ericaceae	*Agarista salicifolia*	LC		GBIF, 2024
Euphorbiaceae	*Euphorbia ingens*	LC		2019 Flora surveys
Euphorbiaceae	*Hymenocardia acida*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Euphorbiaceae	*Uapaca kirkiana*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Euphorbiaceae	*Uapaca nitida*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Euphorbiaceae	*Uapaca sansibarica*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Euphorbiaceae	*Euphorbia cyparissioides*	NA	Endemic	2019 Flora surveys / GBIF, 2024
Euphorbiaceae	*Euphorbia jubata*	NA	Endemic	2019 Flora surveys / GBIF, 2024
Euphorbiaceae	*Uapaca pilosa*	NA		2019 Flora surveys / GBIF, 2024
Euphorbiaceae	*Bridelia duvigneaudi*	NA		2019 Flora surveys
Euphorbiaceae	*Euphorbia cooperi var usanguer*	NA	Endemic	2019 Flora surveys
Euphorbiaceae	*Euphorbia perplexa var kasama*	NA	Endemic	2019 Flora surveys
Euphorbiaceae	*Euphorbia speciosa*	NA	Endemic	2019 Flora surveys
Euphorbiaceae	*Hymenadictyon floribundum*	NA		2019 Flora surveys
Euphorbiaceae	*Hymenocardia acida var. mollis*	NA		2019 Flora surveys
Euphorbiaceae	*Maprounea africanum*	NA		2019 Flora surveys
Euphorbiaceae	*Oldfieldia dactylophyalla*	NA		2019 Flora surveys
Euphorbiaceae	*Phyllanthus guineense*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Euphorbiaceae	*Phyllanthus muelleranus*	NA		2019 Flora surveys
Euphorbiaceae	*Phyllanthus retinervis*	NA		2019 Flora surveys

Family	Species	IUCN Red List	Endemism	Source
Euphorbiaceae	*Pseudolacnostylis maprouneifoli*	NA		2019 Flora surveys
Euphorbiaceae	*Uapaca lyssopyrena*	NA		2019 Flora surveys
Euphorbiaceae	*Euphorbia speciosa*	NA		GBIF, 2024
Euphorbiaceae	*Euphorbia hirta*	NA		GBIF, 2024
Euphorbiaceae	*Ricinus communis*	NA		GBIF, 2024
Euphorbiaceae	*Euphorbia cooperi*	LC		GBIF, 2024
Euphorbiaceae	*Euphorbia tirucalli*	LC		GBIF, 2024
Euporbiaceae	*Bridelia micrantha*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Afzelia quanzensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Albizia adianthifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Albizia amara*	LC		2019 Flora surveys
Fabaceae	*Albizia antunesiana*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Albizia harveyi*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Albizia versicolor*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Berlinia giorgii*	LC		2019 Flora surveys
Fabaceae	*Brachystegia bussei*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Brachystegia longifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Fabaceae	*Brachystegia manga*	LC		2019 Flora surveys
Fabaceae	*Brachystegia spiciformis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Brachystegia taxifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Brachystegia utilis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Cassia abbreviata*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Dalbergia nitidula*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Erythrophleum africanum*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Isoberlinia angolensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Julbernardia globiflora*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Julbernardia paniculata*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Pericopsis angolensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Fabaceae	*Piliostigma thonningii*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Pterocarpus angolensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Fabaceae	*Senna singueana*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Acacia polyacantha*	NA		2019 Flora surveys
Fabaceae	*Aeschynomene rubrofarinaceae*	NA		2019 Flora surveys
Fabaceae	*Baphia bequaertti*	NA		2019 Flora surveys
Fabaceae	*Brachystegia floribunda*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Brachystegia glaberrima*	NA		2019 Flora surveys
Fabaceae	*Brachystegia microphylla*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Burkea africanum*	NA		2019 Flora surveys
Fabaceae	*Bysocarpus orientalis*	NA		2019 Flora surveys
Fabaceae	*Crolataliria grandistipulata*	NA		2019 Flora surveys
Fabaceae	*Crotalaria grandisbipulata*	NA		2019 Flora surveys
Fabaceae	*Desmodium stolzii*	NA		2019 Flora surveys
Fabaceae	*Dolichos kilimandscharicus*	NA		2019 Flora surveys
Fabaceae	*Droogmansia Pteropus var pterc*	NA		2019 Flora surveys
Fabaceae	*Eragrostis oethiopica*	NA		2019 Flora surveys
Fabaceae	*Eriosema rhodesicum*	NA		2019 Flora surveys
Fabaceae	*Eulophia paivaeana*	NA		2019 Flora surveys
Fabaceae	*Indigofera congesta*	NA		2019 Flora surveys
Fabaceae	*Indigofera emarginella*	NA		2019 Flora surveys
Fabaceae	*Indigofera hilaris*	NA		2019 Flora surveys
Fabaceae	*Indigofera podocarpa*	NA		2019 Flora surveys
Fabaceae	*Indigotera livingstoniana*	NA		2019 Flora surveys
Fabaceae	*Lonchocarpus capassa*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Mucuna stans*	NA		2019 Flora surveys
Fabaceae	*Ophrestia radicosa*	NA		2019 Flora surveys
Fabaceae	*Rhynchosia luteola var verdick*	NA		2019 Flora surveys
Fabaceae	*Swartzia madagascariensis*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Fabaceae	*Acacia tortilis*	NA		2015-2016 Flora surveys
Fabaceae	*Cassia singuena*	NA		2015-2016 Flora surveys
Fabaceae	*Crotalaria natalitia*	NA		GBIF, 2024
Fabaceae	*Indigofera atriceps*	NA		GBIF, 2024
Fabaceae	*Kotschya strobilantha*	NA		GBIF, 2024
Fabaceae	*Eriosema shirense*	NA		GBIF, 2024
Fabaceae	*Indigofera nummulariifolia*	NA		GBIF, 2024
Fabaceae	*Leucaena leucocephala*	NA		GBIF, 2024
Fabaceae	*Droogmansia pteropus*	LC		GBIF, 2024
Fabaceae	*Chamaecrista mimosoides*	LC		GBIF, 2024
Fabaceae	*Senna occidentalis*	LC		GBIF, 2024
Fabaceae	*Senna spectabilis*	LC		GBIF, 2024
Fabaceae	*Senna siamea*	LC		GBIF, 2024
Fabaceae	*Delonix regia*	LC		GBIF, 2024
Fabaceae	*Biancaea decapetala*	LC		GBIF, 2024
Fabaceae	*Bauhinia variegata*	LC		GBIF, 2024
Fabaceae	*Droogmansia pteropus var. platy*	NA		2015-2016 Flora surveys
Gentianaceae	*Exochaenium grande*	NA		GBIF, 2024
Gentianaceae	*Exochaenium exiguum*	NA		GBIF, 2024
Geraniaceae	*Pelargonium luridum*	LC		GBIF, 2024

Family	Species	IUCN Red List	Endemism	Source
Hydrocharitaceae	*Lagarosiphon cordofanus*	LC		GBIF, 2024
Hydrocharitaceae	*Ottelia ulvifolia*	LC		GBIF, 2024
Hypericaceae	*Harungana madagascariensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Hypericaceae	*Hypericum lalandii*	NA		GBIF, 2024
Hypoxidaceae	*Hypoxis angustifolia*	NA		2019 Flora surveys
Hypoxidaceae	*Hypoxis goetzei*	NA		2019 Flora surveys
Iridaceae	*Gladiolus*	NA		2019 Flora surveys
Iridaceae	*Gladiolus gregarius*	NA		GBIF, 2024
Iridaceae	*Gladiolus oligophlebius*	NA		GBIF, 2024
Iridaceae	*Gladiolus erectiflorus*	NA		GBIF, 2024
Iridaceae	*Moraea stricta*	NA		GBIF, 2024
Iridaceae	*Zygotritonia nyassana*	NA		GBIF, 2024
Iridaceae	*Gladiolus serenjensis*	NA	Endemic	GBIF, 2024
Ixonanthaceae	*Phyllocosmus lemaireanus*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Juncaceae	*Juncas oxycarpus*	NA		2019 Flora surveys
Juncaceae	*Juncus sp.*	NA		2015-2016 Flora surveys
Kirkiaceae	*Kirkia acuminata*	LC		2015-2016 Flora surveys
Lamiaceae	*Vitex doniana*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Lamiaceae	*Vitex mombassae*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Lamiaceae	*Clerodendrum capitatum*	LC		2015-2016 Flora surveys
Lamiaceae	*Gmelina arborea*	LC		2015-2016 Flora surveys / GBIF, 2024
Lamiaceae	*Vitex payos*	LC		2015-2016 Flora surveys
Lamiaceae	*Acrocephalus rupestris*	NA		2019 Flora surveys
Lamiaceae	*Aeolanthus parmifolius*	NA		2019 Flora surveys
Lamiaceae	*Becium obovathum*	NA		2019 Flora surveys
Lamiaceae	*Leonotis nepetifolia*	NA		2019 Flora surveys
Lamiaceae	*Leucas africanus*	NA		2019 Flora surveys
Lamiaceae	*Solenostemon zambesiacus*	NA		2019 Flora surveys
Lamiaceae	*Leucas matinicensis*	NA		2015-2016 Flora surveys
Lamiaceae	*Leucas stricta*	NA		2015-2016 Flora surveys
Lamiaceae	*Aeollanthus engleri*	NA		GBIF, 2024
Lamiaceae	*Scutellaria schweinfurthii*	NA		GBIF, 2024
Lamiaceae	*Aeollanthus subacaulis*	NA		GBIF, 2024
Lamiaceae	*Hoslundia opposita*	NA		GBIF, 2024
Lamiaceae	*Equilabium viphyense*	NA		GBIF, 2024
Lamiaceae	*Coleus ciliatus*	NA		GBIF, 2024
Lamiaceae	*Coleus bojeri*	NA		GBIF, 2024
Lamiaceae	*Coleus betonicifolius*	NA		GBIF, 2024
Lamiaceae	*Coleus decimus*	NA		GBIF, 2024
Lamiaceae	*Coleus shirensis*	NA		GBIF, 2024
Lamiaceae	*Aeollanthus fruticosus*	NA		GBIF, 2024
Lamiaceae	*Platostoma rotundifolium*	NA		GBIF, 2024
Lamiaceae	*Coleus gracillimus*	NA		GBIF, 2024
Lamiaceae	*Aeollanthus rehmannii*	NA		GBIF, 2024
Lamiaceae	*Coleus mirabilis*	NA		GBIF, 2024
Lamiaceae	*Rotheca myricoides*	LC		GBIF, 2024
Lamiaceae	*Ocimum canum*	NA		2015-2016 Flora surveys
Leguminosae	*Baphia bequaertii*	LC		2015-2016 Flora surveys
Leguminosae	*Bauhinia petersiana*	LC		2015-2016 Flora surveys
Leguminosae	*Bobgunnia madagascariensis*	LC		2015-2016 Flora surveys / GBIF, 2024
Leguminosae	*Brachystegia allenii*	LC		2015-2016 Flora surveys
Leguminosae	*Brachystegia boehmii*	LC		2015-2016 Flora surveys / GBIF, 2024
Leguminosae	*Burkea africana*	LC		2015-2016 Flora surveys
Leguminosae	*Cordyla africana*	LC		2015-2016 Flora surveys
Leguminosae	*Cryptosepalum exfoliatum*	LC		2015-2016 Flora surveys
Leguminosae	*Dichrostachys cinerea*	LC		2015-2016 Flora surveys / GBIF, 2024
Leguminosae	*Kotschya carsonii*	LC		2015-2016 Flora surveys
Leguminosae	*Philenoptera violacea*	LC		2015-2016 Flora surveys
Leguminosae	*Pterocarpus brenanii*	LC		2015-2016 Flora surveys
Leguminosae	*Pterocarpus tinctorius*	LC		2015-2016 Flora surveys
Leguminosae	*Sesbania macrantha*	LC		2015-2016 Flora surveys
Leguminosae	*Vachellia sieberiana*	LC		2015-2016 Flora surveys
Leguminosae	*Cryptosepalum maraviense*	NA		2015-2016 Flora surveys / GBIF, 2024
Leguminosae	*Baphia massaiensis subsp. obo*	NA		2015-2016 Flora surveys
Leguminosae	*Bauhinia thonningii*	NA		2015-2016 Flora surveys
Leguminosae	*Brachystegia stipulata*	NA		2015-2016 Flora surveys
Leguminosae	*Brachystegia wangermeeana*	NA		2015-2016 Flora surveys
Leguminosae	*Crotalaria amoena*	NA		2015-2016 Flora surveys
Leguminosae	*Crotalaria sp*	NA		2015-2016 Flora surveys
Leguminosae	*Crotania aculeata*	NA		2015-2016 Flora surveys
Leguminosae	*Crotania cephaloles*	NA		2015-2016 Flora surveys
Leguminosae	*Indigofera podocarpa*	NA		2015-2016 Flora surveys
Leguminosae	*Indigofera spp*	NA		2015-2016 Flora surveys
Leguminosae	*Isoberlinia gorgroii*	NA		2015-2016 Flora surveys
Leguminosae	*Kotschya spp*	NA		2015-2016 Flora surveys
Leguminosae	*Mucuna pruriens*	NA		2015-2016 Flora surveys
Leguminosae	*Pterocarpus rotondifolius*	NA		2015-2016 Flora surveys

Family	Species	IUCN Red List	Endemism	Source
Leguminosae	*Senegalia polyacantha*	NA		2015-2016 Flora surveys
Lentibulariaceae	*Utricularia welwitschii*	NA		GBIF, 2024
Lentibulariaceae	*Utricularia arenaria*	NA		GBIF, 2024
Lentibulariaceae	*Genlisea africana*	NA		GBIF, 2024
Lentibulariaceae	*Utricularia prehensilis*	LC		GBIF, 2024
Lentibulariaceae	*Utricularia pentadactyla*	LC		GBIF, 2024
Lentibulariaceae	*Utricularia reflexa*	LC		GBIF, 2024
Liliaceae	*Chlorophytum pusillum*	NA		2019 Flora surveys
Liliaceae	*Dasystachys leptoneura*	NA		2019 Flora surveys
Linderniaceae	*Crepidorhopalon mutinondoensi*	NA		GBIF, 2024
Linderniaceae	*Linderniella gracilis*	NA		GBIF, 2024
Linderniaceae	*Crepidorhopalon debilis*	NA		GBIF, 2024
Linderniaceae	*Crepidorhopalon rupestris*	NA		GBIF, 2024
Loganiaceae	*Strychnos pungens*	LC		2015-2016 Flora surveys
Loranthaceae	*Loranthus spp*	NA		2015-2016 Flora surveys
Loranthaceae	*Agelanthus subulatus*	NA		GBIF, 2024
Lycopodiaceae	*Lycopodium spp*	NA		2015-2016 Flora surveys
Lycopodiaceae	*Palhinhaea cernua*	NA		GBIF, 2024
Malvaceae	*Thespesia garckeana*	LC		2015-2016 Flora surveys
Malvaceae	*Azanza garckeana*	NA		2019 Flora surveys
Malvaceae	*Triumffeta Dekindtiana*	NA		2019 Flora surveys
Malvaceae	*Triumffetta heliocarpa*	NA		2019 Flora surveys
Malvaceae	*Triumfetta angolensis*	NA		2015-2016 Flora surveys
Malvaceae	*Sterculia quinqueloba*	NA		GBIF, 2024
Malvaceae	*Hibiscus rhodanthus*	NA		GBIF, 2024
Malvaceae	*Dombeya burgessiae*	LC		GBIF, 2024
Melastomataceae	*Dissotis mactrocarpa*	NA		2019 Flora surveys
Melastomataceae	*Dissotis trothae*	NA		2019 Flora surveys
Melastomataceae	*Memecylon flavivorens*	NA		2019 Flora surveys
Melastomataceae	*Dissotis canescens*	NA		2015-2016 Flora surveys
Melastomataceae	*Dissotis falcipila*	NA		2015-2016 Flora surveys
Melastomataceae	*Dissotis sp.*	NA		2015-2016 Flora surveys
Melastomataceae	*Melastomastrum sp.*	NA		2015-2016 Flora surveys
Melastomataceae	*Memecylon flavovirens*	NA		2015-2016 Flora surveys
Melastomataceae	*Memecylon sp.*	NA		2015-2016 Flora surveys
Melastomataceae	*Rosettea denticulata*	NA		GBIF, 2024
Melastomataceae	*Antherotoma naudinii*	NA		GBIF, 2024
Meliaceae	*Turraea robusta*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Meliaceae	*Khaya anthoteca*	NA		2019 Flora surveys
Meliaceae	*Ekebergia benguellensis*	NA		2015-2016 Flora surveys
Meliaceae	*Ekebergia sp.*	NA		2015-2016 Flora surveys
Meliaceae	*Toona ciliata*	LC		GBIF, 2024
Meliaceae	*Melia azedarach*	LC		GBIF, 2024
Meliaceae	*Cedrela odorata*	VU		GBIF, 2024
Melianthaceae	*Bersama abyssinica*	LC		2019 Flora surveys
Moraceae	*Ficus asperifolia*	LC		2019 Flora surveys
Moraceae	*Ficus brachypoda*	LC		2015-2016 Flora surveys
Moraceae	*Ficus natalensis*	LC		2015-2016 Flora surveys
Moraceae	*Ficus sycomorus*	LC		2015-2016 Flora surveys
Moraceae	*Ficus tettensis*	LC		2015-2016 Flora surveys
Moraceae	*Ficus capensis*	NA		2019 Flora surveys
Moraceae	*Ficus capreifolia*	NA		2019 Flora surveys
Moraceae	*Ficus sycamorus*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Moraceae	*Ficus sp.*	NA		2015-2016 Flora surveys
Moraceae	*Ficus ovata*	NA		GBIF, 2024
Moraceae	*Ficus glumosa*	LC		GBIF, 2024
Musaceae	*Musa sp.*	NA		2015-2016 Flora surveys
Myrothamnaceae	*Myrothamnus flabellifolius*	NA		GBIF, 2024
Myrtaceae	*Syzygium cordatum*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Myrtaceae	*Syzygium guineense*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Myrtaceae	*Syzygium guineense subsp guin*	NA		2019 Flora surveys
Myrtaceae	*Syzygium guineense subsp mac*	NA		2019 Flora surveys
Myrtaceae	*Eucalyptus sp.*	NA		2015-2016 Flora surveys
Myrtaceae	*Syzygium guineense ssp huille*	NA		2015-2016 Flora surveys
Myrtaceae	*Syzygium guineense subsp mac*	NA		2015-2016 Flora surveys
Myrtaceae	*Psidium guajava*	LC		GBIF, 2024
Nephrolepidaceae	*Nephrolepis undulata*	LC		GBIF, 2024
Nyctaginaceae	*Mirabilis jalapa*	NA		GBIF, 2024
Nymphaeaceae	*Nymphaea nouchali*	LC		GBIF, 2024
Ochnaceae	*Ochna pulchra*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Ochnaceae	*Ochna pygmaea*	NA		2019 Flora surveys
Ochnaceae	*Ochna schweinfurtiana*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Ochnaceae	*Ochna sp.*	NA		2015-2016 Flora surveys
Olacaceae	*Olax obtusifolia*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Olacaceae	*Ximenia Americana*	NA		2019 Flora surveys
Oleaceae	*Schrebera alata*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Orchidaceae	*Ansellia Africana*	VU		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024

Family	Species	IUCN Red List	Endemism	Source
Orchidaceae	*Euphorbia heterophylla*	LC		2019 Flora surveys
Orchidaceae	*Eulophia clitellifera*	NA		2019 Flora surveys
Orchidaceae	*Bulbophyllum oxyptesum*	NA		2015-2016 Flora surveys
Orchidaceae	*Bulbophyllum sp.*	NA		2015-2016 Flora surveys
Orchidaceae	*Disa spp*	NA		2015-2016 Flora surveys
Orchidaceae	*Habenaria sp.*	NA		2015-2016 Flora surveys
Orchidaceae	*sp*	NA		2015-2016 Flora surveys
Orchidaceae	*Brachycorythis buchananii*	NA		GBIF, 2024
Orchidaceae	*Rangaeris muscicola*	NA		GBIF, 2024
Orchidaceae	*Eulophia gonychila*	NA		GBIF, 2024
Orchidaceae	*Nervilia simplex*	NA		GBIF, 2024
Orchidaceae	*Habenaria macrotidion*	NA	Endemic	GBIF, 2024
Orchidaceae	*Eulophia trilamellata*	NA		GBIF, 2024
Orchidaceae	*Habenaria retinervis*	NA		GBIF, 2024
Orchidaceae	*Habenaria weberiana*	NA		GBIF, 2024
Orchidaceae	*Habenaria humilior*	NA		GBIF, 2024
Orchidaceae	*Habenaria gonatosiphon*	NA		GBIF, 2024
Orchidaceae	*Eulophia livingstoneana*	NA		GBIF, 2024
Orchidaceae	*Habenaria macroplectron*	NA		GBIF, 2024
Orchidaceae	*Habenaria galactantha*	NA		GBIF, 2024
Orchidaceae	*Habenaria uhehensis*	NA		GBIF, 2024
Orchidaceae	*Disperis reichenbachiana*	NA		GBIF, 2024
Orchidaceae	*Calyptrochilum christyanum*	NA		GBIF, 2024
Orchidaceae	*Malaxis schliebenii*	NA		GBIF, 2024
Orchidaceae	*Bulbophyllum elliotii*	NA		GBIF, 2024
Orchidaceae	*Aerangis mystacidii*	NA		GBIF, 2024
Orchidaceae	*Nervilia shirensis*	NA		GBIF, 2024
Orchidaceae	*Habenaria zambesina*	NA		GBIF, 2024
Orchidaceae	*Habenaria filicornis*	NA		GBIF, 2024
Orchidaceae	*Habenaria lindblomii*	NA		GBIF, 2024
Orchidaceae	*Habenaria splendens*	NA		GBIF, 2024
Orchidaceae	*Habenaria uncicalcar*	NA		GBIF, 2024
Orchidaceae	*Eulophia odontoglossa*	NA		GBIF, 2024
Orchidaceae	*Platycoryne macroceras*	NA	Near-endemic?	GBIF, 2024
Orchidaceae	*Eulophia euantha*	NA		GBIF, 2024
Orchidaceae	*Polystachya dendrobiiflora*	NA		GBIF, 2024
Orchidaceae	*Brachycorythis lastii*	NA		GBIF, 2024
Orchidaceae	*Eulophia latilabris*	NA		GBIF, 2024
Orchidaceae	*Eulophia venulosa*	NA		GBIF, 2024
Orchidaceae	*Nervilia petraea*	NA		GBIF, 2024
Orchidaceae	*Nervilia adolphi*	NA		GBIF, 2024
Orchidaceae	*Eulophia calantha*	NA		GBIF, 2024
Orchidaceae	*Cynorkis debilis*	NA		GBIF, 2024
Orchidaceae	*Disperis katangensis*	NA		GBIF, 2024
Orchidaceae	*Disperis anthoceros*	NA		GBIF, 2024
Orchidaceae	*Satyrium carsonii*	NA		GBIF, 2024
Orchidaceae	*Microcoelia globulosa*	NA		GBIF, 2024
Orchidaceae	*Habenaria holubii*	NA		GBIF, 2024
Orchidaceae	*Platycoryne buchananiana*	NA		GBIF, 2024
Orchidaceae	*Habenaria macrura*	NA		GBIF, 2024
Orchidaceae	*Habenaria debeerstiana*	NA		GBIF, 2024
Orchidaceae	*Habenaria edgarii*	NA		GBIF, 2024
Orchidaceae	*Habenaria goetzeana*	NA		GBIF, 2024
Orchidaceae	*Disa engleriana*	NA		GBIF, 2024
Orchidaceae	*Cyrtorchis praetermissa*	NA		GBIF, 2024
Orchidaceae	*Centrostigma clavatum*	NA		GBIF, 2024
Orchidaceae	*Eulophia malangana*	NA		GBIF, 2024
Orchidaceae	*Habenaria cornuta*	NA		GBIF, 2024
Orchidaceae	*Satyrium kitimboense*	NA		GBIF, 2024
Orchidaceae	*Eulophia cucullata*	NA		GBIF, 2024
Orchidaceae	*Disa aequiloba*	EN		GBIF, 2024
Orchidaceae	*Eulophia speciosa*	LC		GBIF, 2024
Orchidaceae	*Satyrium trinerve*	LC		GBIF, 2024
Orchidaceae	*Platycoryne mediocris*	LC		GBIF, 2024
Orobanchaceae	*Orobanche minor*	NA		GBIF, 2024
Orobanchaceae	*Striga bilabiata*	NA		GBIF, 2024
Orobanchaceae	*Alectra sessiliflora*	NA		GBIF, 2024
Osmundaceae	*Osmunda regalis*	LC		GBIF, 2024
Oxalidaceae	*Oxalis obliquifolia*	NA		GBIF, 2024
Oxalidaceae	*Biophytum crassipes*	NA		GBIF, 2024
Oxalidaceae	*Oxalis semiloba*	NA		GBIF, 2024
Oxalidaceae	*Oxalis corniculata*	NA		GBIF, 2024
Passifloraceae	*Adenia gummifera*	NA		2019 Flora surveys / GBIF, 2024
Passifloraceae	*Adenia panduriformis*	NA		2019 Flora surveys
Passifloraceae	*Viridivia subcrosa*	NA		2019 Flora surveys
Passifloraceae	*Adenia cissampeloides*	NA		2015-2016 Flora surveys
Passifloraceae	*Paropsia brazzaeana*	NA		2015-2016 Flora surveys

Family	Species	IUCN Red List	Endemism	Source
Pedaliaceae	*Sesamum angolense*	NA		2019 Flora surveys
Pedaliaceae	*Sesamum angolense*	NA		GBIF, 2024
Phyllantaceae	*Pseudolachnostylis maprouneifo*	LC		2015-2016 Flora surveys
Phyllantaceae	*Phyllanthus muellerianus*	NA		2015-2016 Flora surveys
Picrodendraceae	*Oldfieldia dactylophylla*	NA		2015-2016 Flora surveys
Plantaginaceae	*Digitalis spp*	NA		2015-2016 Flora surveys
Poaceae	*Erythrina abyssinica*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Poaceae	*Phragmites australis*	LC		2019 Flora surveys
Poaceae	*Phragmites mauritianus*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Poaceae	*Eragrostis superba*	NA		2019 Flora surveys
Poaceae	*Hyperrhania rufa*	NA		2019 Flora surveys
Poaceae	*Imperata cylindrica*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Poaceae	*Oxytenanthera abyssinica*	NA		2019 Flora surveys
Poaceae	*Setaria homblei*	NA		2019 Flora surveys
Poaceae	*Vetiveria nigritana*	NA		2019 Flora surveys
Poaceae	*Brachiaria sp.*	NA		2015-2016 Flora surveys
Poaceae	*Eragrostis chapelleri*	NA		2015-2016 Flora surveys
Poaceae	*Eragrostis congesta*	NA		2015-2016 Flora surveys
Poaceae	*Eragrostis rigidior*	NA		2015-2016 Flora surveys
Poaceae	*Eragrostris parens*	NA		2015-2016 Flora surveys
Poaceae	*Hyparrhenia cyamboria*	NA		2015-2016 Flora surveys
Poaceae	*Hyparrhenia filipendula*	NA		2015-2016 Flora surveys
Poaceae	*Hyparrhenia rufa*	NA		2015-2016 Flora surveys
Poaceae	*Hyparrhenia sp.*	NA		2015-2016 Flora surveys
Poaceae	*Loudetia angolensis*	NA		2015-2016 Flora surveys
Poaceae	*Loudetia simplex*	NA		2015-2016 Flora surveys
Poaceae	*Panicum sp.*	NA		2015-2016 Flora surveys
Poaceae	*Pogonarthria squarrosa*	NA		2015-2016 Flora surveys
Poaceae	*Setaria sp.*	NA		2015-2016 Flora surveys
Poaceae	*Themeda triandra*	NA		GBIF, 2024
Poaceae	*Melinis repens*	NA		GBIF, 2024
Polygalaceae	*Securidaca longepedunculata*	LC		GBIF, 2024
Polygalaceae	*Securidaca longipedunculata*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Polygalaceae	*Polygala sp.*	NA		2015-2016 Flora surveys
Polygalaceae	*Polygala africana*	NA		GBIF, 2024
Polygonaceae	*Persicaria meisneriana*	NA		GBIF, 2024
Portulacaceae	*Polygonum limbatum*	NA		2019 Flora surveys
Proteaceae	*Faurea rochetiana*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Proteaceae	*Faurea saligna*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Proteaceae	*Protea madiensis*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Proteaceae	*Protea gaguedi*	LC		2015-2016 Flora surveys
Proteaceae	*Protea welwitschii*	LC		2015-2016 Flora surveys / GBIF, 2024
Proteaceae	*Protea angolensis*	NA		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Proteaceae	*Protea heckmanniana*	NA		2019 Flora surveys
Proteaceae	*Protea micans*	NA		2019 Flora surveys
Proteaceae	*Faurea spinosa*	NA		2015-2016 Flora surveys
Proteaceae	*Protea africanum*	NA		2015-2016 Flora surveys
Proteaceae	*Protea anicans*	NA		2015-2016 Flora surveys
Proteaceae	*Protea boehmii*	NA		2015-2016 Flora surveys
Proteaceae	*Protea sp.*	NA		2015-2016 Flora surveys
Proteaceae	*Protea petiolaris*	NA		GBIF, 2024
Proteaceae	*Faurea delevoyi*	NA		GBIF, 2024
Proteaceae	*Grevillea robusta*	LC		GBIF, 2024
Pteridaceae	*Actiniopteris radiata*	NA		GBIF, 2024
Ranunculaceae	*Clematis chrysocarpa*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Ranunculaceae	*Clematis sp.*	NA		2015-2016 Flora surveys
Ranunculaceae	*Clementis brachiata*	NA		2015-2016 Flora surveys
Ranunculaceae	*Clematis villosa*	NA		GBIF, 2024
Rhamnaceae	*Ziziphus abyssinica*	LC		2019 Flora surveys
Rhamnaceae	*Ziziphus mucronata*	LC		2015-2016 Flora surveys
Rubiaceae	*Gardenia imperialis*	LC		2019 Flora surveys / GBIF, 2024
Rubiaceae	*Tricalysia coriacea*	LC		2019 Flora surveys
Rubiaceae	*Multidentia crassa*	LC		2015-2016 Flora surveys
Rubiaceae	*Rothmannia engleriana*	LC		2015-2016 Flora surveys / GBIF, 2024
Rubiaceae	*Rothmannia fischeri*	LC		2015-2016 Flora surveys
Rubiaceae	*Hymenodictyon floribundum*	LC		GBIF, 2024
Rubiaceae	*Gardenia ternifolia*	LC		GBIF, 2024
Rubiaceae	*Fadogia adorata*	NA		2019 Flora surveys
Rubiaceae	*Fadogia ancylanthus*	NA		2019 Flora surveys
Rubiaceae	*Fadogia katangensis*	NA		2019 Flora surveys
Rubiaceae	*Fadogia monticola*	NA		2019 Flora surveys
Rubiaceae	*Fadogia triphylla*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Rubiaceae	*Keetia venosum*	NA		2019 Flora surveys
Rubiaceae	*Otiophora angustifolia*	NA	Endemic	2019 Flora surveys
Rubiaceae	*Pentanisia schweinfurthii*	NA		2019 Flora surveys
Rubiaceae	*Richardia brasiliensis*	NA		2019 Flora surveys
Rubiaceae	*Rothmannia englerana*	NA		2019 Flora surveys

Family	Species	IUCN Red List	Endemism	Source
Rubiaceae	*Rutidea olenotricha*	NA		2019 Flora surveys
Rubiaceae	*Afrocanthium burttii*	NA		2015-2016 Flora surveys
Rubiaceae	*Canthium venosum*	NA		2015-2016 Flora surveys
Rubiaceae	*Fadogia ancylantha*	NA		2015-2016 Flora surveys
Rubiaceae	*Fadogia clenkowskii*	NA		2015-2016 Flora surveys
Rubiaceae	*Fadogia homblei*	NA		2015-2016 Flora surveys
Rubiaceae	*Gardenia imprioris*	NA		2015-2016 Flora surveys
Rubiaceae	*Pentas sp.*	NA		2015-2016 Flora surveys
Rubiaceae	*Vangueriopsis lanciflora*	NA		2015-2016 Flora surveys
Rubiaceae	*Mussaenda arcuata*	NA		GBIF, 2024
Rubiaceae	*Spermacoce dibrachiata*	NA		GBIF, 2024
Rubiaceae	*Gardenia subacaulis*	NA		GBIF, 2024
Rubiaceae	*Otomeria elatior*	NA		GBIF, 2024
Rubiaceae	*Otiophora pycnostachys*	NA		GBIF, 2024
Rubiaceae	*Otiophora scabra*	NA		GBIF, 2024
Rutaceae	*Zanthoxylum gillettii*	NA		2019 Flora surveys
Salicaceae	*Oncoba spinosa*	LC		2015-2016 Flora surveys
Salicaceae	*Salix mucronata*	LC		2015-2016 Flora surveys
Salvadoraceae	*Flacourtia indica*	LC		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Salvadoraceae	*Salix macronata*	NA		2019 Flora surveys
Sapindaceae	*Zahna africana*	NA		2015-2016 Flora surveys
Sapotaceae	*Englerophytum magalismontanu*	LC		2015-2016 Flora surveys / GBIF, 2024
Sapotaceae	*Pachystela brevipes*	NA		2019 Flora surveys
Scrophulariaceae	*Buchnera randii*	NA		2019 Flora surveys
Smilacaceae	*Smilax anceps*	NA		2019 Flora surveys / GBIF, 2024
Smilacaceae	*Smilax kraussiana*	NA		2015-2016 Flora surveys
Smilacaceae	*Smilax sp.*	NA		2015-2016 Flora surveys
Solanaceae	*Solanum spp*	NA		2019 Flora surveys
Solanaceae	*Nicandra physalodes*	NA		GBIF, 2024
Solanaceae	*Nicotiana glauca*	NA		GBIF, 2024
Solanaceae	*Solanum campylacanthum*	LC		GBIF, 2024
Solanaceae	*Brugmansia suaveolens*	EW		GBIF, 2024
Sterculiaceae	*Dombeya rotundifolia*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Sterculiaceae	*Dombeya erythroleuca*	NA		2019 Flora surveys
Stilaginaceae	*Antidesma venosum*	LC		2019 Flora surveys
Strychnaceae	*Strychnos cocculoides*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Strychnaceae	*Strychnos innocua*	LC		2019 Flora surveys / 2015-2016 Flora surveys
Strychnaceae	*Strychnos spinosa*	NA		2019 Flora surveys / 2015-2016 Flora surveys/GBIF, 2024
Strychnaceae	*Strychnos stuhlmanni*	NA		2019 Flora surveys
Tectariaceae	*Arthropteris orientalis*	NA		GBIF, 2024
Thymelaeaceae	*Gnidia chrysantha*	NA		2019 Flora surveys / GBIF, 2024
Thymelaeaceae	*Gnidia buchanani*	NA		2019 Flora surveys
Thymelaeaceae	*Gnidia kraussiana*	NA		GBIF, 2024
Urticaceae	*Pilea microphylla*	NA		GBIF, 2024
Velloziaceae	*Xerophyta equisetoides*	NA		2019 Flora surveys / 2015-2016 Flora surveys
Velloziaceae	*Vellozia equisetoides*	NA		2015-2016 Flora surveys
Velloziaceae	*Xerophyta trichophylla*	NA		GBIF, 2024
Verbanaceae	*Lantana rhodesiae*	NA		2019 Flora surveys
Verbenaceae	*Clerodendrum formicarum*	LC		2019 Flora surveys
Verbenaceae	*Clerodendrum buchneri*	NA		2019 Flora surveys
Verbenaceae	*Clerodendrum tanganyikersis*	NA		2019 Flora surveys
Verbenaceae	*Lippia plicata*	NA		2019 Flora surveys
Verbenaceae	*Lantana camara*	NA		2015-2016 Flora surveys / GBIF, 2024
Verbenaceae	*Duranta erecta*	LC		GBIF, 2024
Viburnaceae	*Sambucus nigra*	LC		GBIF, 2024
Violaceae	*Pigea enneasperma*	NA		GBIF, 2024
Vitaceae	*Ampelocissus obtusata*	NA		2019 Flora surveys
Vitaceae	*Cyphostemma junaceum*	NA		2019 Flora surveys
Vitaceae	*Cyphostemma rhodesiae*	NA		2019 Flora surveys
Vitaceae	*Cissus sp*	NA		2015-2016 Flora surveys
Vitaceae	*Cyphostemma crotalarioides*	NA		GBIF, 2024
Vitaceae	*Afrocayratia gracilis*	NA		GBIF, 2024
Vitaceae	*Cyphostemma vanmeelii*	NA		GBIF, 2024
Vitaceae	*Cyphostemma chloroleucum*	NA		2015-2016 Flora surveys
Xyridaceae	*Xyris ledermannii*	NA		2019 Flora surveys
Zamiaceae	*Encephalartos schmitzii*	VU		GBIF, 2024
Zingiberaceae	*Aframomum alboviolaceum*	LC		2019 Flora surveys
Zingiberaceae	*Aframomum angustifolium*	LC		2019 Flora surveys
Zingiberaceae	*Siphonochilus aethiopicus*	NA		GBIF, 2024
Zingiberaceae	*Siphonochilus kirkii*	NA		GBIF, 2024
Zingiberaceae	*Siphonochilus longitubus*	NA		GBIF, 2024

APPENDIX

5-5 *BIRD PRIORITY SPECIES LIST*

Appendix 3 Annotated List of the Priority Species Considered Relevant to the Field Surveys and BMMP

Common Name	Scientific Name	Global Red List	Regional Red List	Migrant	Potential Impact
Barbet, Zambian	*Lybius chaplini*	x			N/A
Barn-owl, Common	*Tyto alba*				C, E
Bateleur	*Terathopius ecaudatus*	x			C, D
Batis, Margaret's	*Batis margaritae*		x		N/A
Bittern, Eurasian	*Botaurus stellaris*		x		C, D
Bustard, Black-bellied	*Lissotis melanogaster*				C, D
Bustard, Denham's	*Neotis denhami*	x			C, D
Bustard, Kori	*Ardeotis kori*	x			C, D
Bustard, Red-crested	*Lophotis ruficrista*				C, D
Bustard, White-bellied	*Eupodotis senegalensis*		x		C, D
Buzzard, Augur	*Buteo augur*				C, D
Buzzard, Common (Steppe)	*Buteo buteo*			x	C
Buzzard, Lizard	*Kaupifalco monogrammicus*				C, D
Cisticola, Churring	*Cisticola njombe*	x			N/A
Cormorant, Great	*Phalacrocorax carbo*				C, D
Cormorant, Long-tailed	*Microcarbo africanus*				C, D
Corncrake	*Crex crex*	x			C, D
Crane, Grey Crowned	*Balearica regulorum*	x			C
Crane, Wattled	*Bugeranus carunculatus*	x			C
Curlew, Eurasian	*Numenius arquata*	x			C, D
Darter, African	*Anhinga rufa*				C, D
Duck, African Black	*Anas sparsa*				C, D
Duck, African Comb	*Sarkidiornis melanotos*				C, D
Duck, White-backed	*Thalassornis leuconotus*				C, D
Duck, Yellow-billed	*Anas undulata*				C, D
Eagle, Booted	*Hieraaetus pennatus*			x	C
Eagle, Crowned	*Stephanoaetus coronatus*	x			C, D
Eagle, Lesser Spotted	*Clanga pomarina*			x	C
Eagle, Long-crested	*Lophaetus occipitalis*				C, D
Eagle, Martial	*Polemaetus bellicosus*	x			C, D
Eagle, Steppe	*Aquila nipalensis*	x		x	C
Eagle, Tawny	*Aquila rapax*				C, D
Eagle, Verreaux's	*Aquila verreauxii*				C
Eagle, Wahlberg's	*Hieraaetus wahlbergi*			Afro-tropical	C, D
Eagle-owl, Spotted	*Bubo africanus*				C, D

Common Name	Scientific Name	Global Red List	Regional Red List	Migrant	Potential Impact
Eagle-owl, Verreaux's	*Bubo lacteus*				C, D
Egret, Cattle	*Bubulcus ibis*			Afro-tropical	C, D
Egret, Great White	*Ardea alba*				C, D
Egret, Little	*Egretta garzetta*				C, D
Egret, Slaty	*Egretta vinaceigula*	x			C, D
Egret, Yellow-billed	*Ardea brachyrhyncha*				C, D
Falcon, Amur	*Falco amurensis*			x	C
Falcon, Eleonora's	*Falco eleonorae*			x	C
Falcon, Lanner	*Falco biarmicus*				C, D
Falcon, Peregrine	*Falco peregrinus*			x	C
Falcon, Red-footed	*Falco vespertinus*	x		x	C
Falcon, Red-necked	*Falco ruficollis*	x			C, D
Falcon, Sooty	*Falco concolor*	x			C, D
Falcon, Taita	*Falco fasciinucha*	x			C, D
Fish-eagle, African	*Haliaeetus vocifer*				C, D
Fishing-owl, Pel's	*Scotopelia peli*				C, D
Flamingo, Greater	*Phoenicopterus roseus*				C, D
Flamingo, Lesser	*Phoeniconaias minor*	x			C, D
Flufftail, White-spotted	*Sarothrura pulchra*		x		N/A
Godwit, Bar-tailed	*Limosa lapponica*	x		x	C
Godwit, Black-tailed	*Limosa limosa*	x		x	C
Goose, Egyptian	*Alopochen aegyptiaca*				C, D
Goose, Spur-winged	*Plectropterus gambensis*				C, D
Goshawk, African	*Accipiter tachiro*				C, D
Goshawk, Dark Chanting	*Melierax metabates*				C, D
Goshawk, Gabar	*Micronisus gabar*				C, D
Grass-owl, African	*Tyto capensis*				C, D
Grebe, Great Crested	*Podiceps cristatus*		x		C, D
Greenbul, Joyful	*Chlorocichla laetissima*		x		N/A
Ground-hornbill, Southern	*Bucorvus leadbeateri*	x			C, D
Harrier, Montagu's	*Circus pygargus*			x	C
Harrier, Pallid	*Circus macrourus*	x		x	C
Harrier-hawk, African	*Polyboroides typus*				C, D
Hawk, Bat	*Macheiramphus alcinus*				C, D
Hawk-eagle, African	*Aquila spilogaster*				C, D
Hawk-eagle, Ayres's	*Hieraaetus ayresii*				C, D
Heron, Black	*Egretta ardesiaca*				C, D

Common Name	Scientific Name	Global Red List	Regional Red List	Migrant	Potential Impact
Heron, Black-headed	*Ardea melanocephala*				C, D
Heron, Goliath	*Ardea goliath*		x		C, D
Heron, Grey	*Ardea cinerea*				C, D
Heron, Purple	*Ardea purpurea*				C, D
Hobby, Eurasian	*Falco subbuteo*			x	C
Honey-buzzard, European	*Pernis apivorus*			x	C
Ibis, African Sacred	*Threskiornis aethiopicus*				C, D
Ibis, Glossy	*Plegadis falcinellus*				C, D
Illadopsis, Spotted	*Illadopsis turdina*		x		N/A
Kestrel, Common	*Falco tinnunculus*				C, D
Kestrel, Greater	*Falco rupicoloides*				C, D
Kestrel, Grey	*Falco ardosiaceus*				C, D
Kestrel, Lesser	*Falco naumanni*	x			C, D
Kingfisher, Shining-blue	*Alcedo quadribrachys*		x		D
Kingfisher, White-bellied	*Corythornis leucogaster*		x		D
Kite, Black	*Milvus migrans*			x	C
Kite, Black-winged (shouldered)	*Elanus caeruleus*				C, D
Kite, Yellow-billed	*Milvus aegyptius*			x	C
Knot, Red	*Calidris canutus*	x			N/A
Lovebird, Black-cheeked	*Agapornis nigrigenis*	x			N/A
Lovebird, Nyasa	*Agapornis lilianae*	x			N/A
Marabou	*Leptoptilos crumenifer*				C, D
Marsh-harrier, African	*Circus ranivorus*		x		C, D
Marsh-harrier, Western	*Circus aeruginosus*			x	C
Openbill, African	*Anastomus lamelligerus*				C, D
Osprey	*Pandion haliaetus*			x	C
Owl, Marsh	*Asio capensis*				C, D
Oxpecker, Red-billed	*Buphagus erythrorynchus*		x		D
Oxpecker, Yellow-billed	*Buphagus africanus*		x		D
Pelican, Great White	*Pelecanus onocrotalus*				C
Pelican, Pink-backed	*Pelecanus rufescens*				C
Plover, Chestnut-banded	*Charadrius pallidus*	x			N/A
Pochard, Southern	*Netta erythrophthalma*				C, D
Pond-heron, Madagascar	*Ardeola idae*	x			C, D
Pratincole, Black-winged	*Glareola nordmanni*	x			D
Robin-chat, Rusty-flanked	*Dessonornis macclounii*	x			N/A
Saddlebill	*Ephippiorhynchus senegalensis*		x		C, D

Common Name	Scientific Name	Global Red List	Regional Red List	Migrant	Potential Impact
Sandgrouse, Yellow-throated	*Pterocles gutturalis*		x	Afro-tropical	N/A
Sandpiper, Curlew	*Calidris ferruginea*	x			D
Secretarybird	*Sagittarius serpentarius*	x			C, D
Shoebill	*Balaeniceps rex*	x			C
Shoveler, Cape	*Spatula smithii*				C, D
Shoveler, Northern	*Spatula clypeata*				C, D
Shrike-flycatcher, African	*Megabyas flammulatus*		x		N/A
Skimmer, African	*Rynchops flavirostris*	x			C, D
Snake-eagle, Black-chested	*Circaetus pectoralis*				C, D
Snake-eagle, Brown	*Circaetus cinereus*				C, D
Snake-eagle, Southern Banded	*Circaetus fasciolatus*				C, D
Snake-eagle, Western Banded	*Circaetus cinerascens*				C, D
Snipe, Great	*Gallinago media*	x			D
Sparrowhawk, Black	*Accipiter melanoleucus*				C, D
Sparrowhawk, Little	*Accipiter minullus*				C, D
Sparrowhawk, Ovambo	*Accipiter ovampensis*				C, D
Sparrowhawk, Rufous-breasted	*Accipiter rufiventris*				NA
Spoonbill, African	*Platalea alba*				C, D
Stork, Abdim's	*Ciconia abdimii*			Afro-tropical	C, D
Stork, Black	*Ciconia nigra*				C, D
Stork, White	*Ciconia ciconia*			x	C
Stork, Yellow-billed	*Mycteria ibis*				C, D
Swallow, Blue	*Hirundo atrocaerulea*	x			D
Teal, Cape	*Anas capensis*				C, D
Teal, Hottentot	*Spatula hottentota*				C, D
Teal, Red-billed	*Anas erythrorhyncha*				C, D
Vulture, Cape	*Gyps coprotheres*	x			C
Vulture, Egyptian	*Neophron percnopterus*	x			N/A
Vulture, Hooded	*Necrosyrtes monachus*	x			C, D
Vulture, Lappet-faced	*Torgos tracheliotos*	x			C, D
Vulture, Palm-nut	*Gypohierax angolensis*				C, D
Vulture, Rüppell's	*Gyps rueppelli*	x			C
Vulture, White-backed	*Gyps africanus*	x			C, D
Vulture, White-headed	*Trigonoceps occipitalis*	x			C, D
Warbler, Zambian Yellow	*Calamonastides bensoni*	x			N/A
Wattle-eye, Chestnut	*Dyaphorophyia castanea*		x		N/A
Weaver, Bar-winged	*Ploceus angolensis*		x		D

Common Name	Scientific Name	Global Red List	Regional Red List	Migrant	Potential Impact
Weaver, Olive-headed	*Ploceus olivaceiceps*	x			N/A
Whistling-duck, Fulvous	*Dendrocygna bicolor*				C, D
Whistling-duck, White-faced	*Dendrocygna viduata*				C, D
Wood-owl, African	*Strix woodfordii*				C, D
Woodpecker, Brown-eared	*Campethera caroli*		x		N/A
Woollyneck, African	*Ciconia microscelis*				C, D

APPENDIX

5-6 RAPID BIRD SURVEY RESULTS

RAPID BIRD SURVEY RESULTS

Priority species are highlighted in light grey

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Apalis, Bar-throated	*Apalis thoracica*		59			
Apalis, Yellow-breasted	*Apalis flavida*		22,65			
Babbler, Arrowmarked	*Turdoides jardineii*		1			
Barbet, Black-collared	*Lybius torquatus*		18,22,27,29,31,33,37,38,40,41,52,57,65,66			
Barbet, Crested	*Trachyphonus vaillantii*		6			
Bateleur	*Terathopius ecaudatus*	NT	3,62,65			
Batis, Chinspot	*Batis molitor*		3,7,12,22,33,42,57			
Bee-eater, Little	*Merops pusillus*		6,26,33,38,42,55,62			
Bee-eater, Swallow-tailed	*Merops hirundineus*		17,65			
Bishop, Red	*Euplectes orix*		8,52			
Bishop, Yellow	*Euplectes capensis*		1,11,17,62			
Boubou, Tropical	*Laniarius major*		1,4,22,24			
Brubru	*Nilaus afer*		12,33			
Bulbul, Dark-capped	*Pycnonotus tricolor*		1,2,4,6-9,12,14,15,17-22,24,26-29,31,33,36-42,47,49-52,55,57,59,62,65,66			
Bunting, Cabanis's	*Emberiza cabanisi*		19,21			
Bunting, Cinnamon-breasted	*Emberiza tahapisi*		7			
Bunting, Golden-breasted	*Emberiza flaviventris*		7,14,15,18,33			
Bushshrike, Grey-headed	*Malaconotus blanchoti*		11,24,26,40,49,50,55,57,62,65			
Bushshrike, Orange-breasted	*Chlorophoneus sulfureopectus*		26,31,33,59,66			
Buzzard, Lizard	*Kaupifalco monogrammicus*		1	3, 7		
Buzzard, Common	*Buteo buteo*		1	3		
Camaroptera, Grey-backed	*Camaroptera brevicaudata*		4,55			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Canary, Brimstone	*Crithagra sulphurata*		65			
Cisticola, Chirping	*Cisticola pipiens*		24			
Cisticola, Croaking	*Cisticola natalensis*		27			
Cisticola, Lazy	*Cisticola aberrans*		26			
Cisticola, Rattling	*Cisticola chiniana*		24,57			
Cisticola, Red-faced	*Cisticola erythrops*		24			
Cisticola, Singing	*Cisticola cantans*		26			
Cisticola, Tinkling	*Cisticola rufilatus*		47,52			
Cisticola, Wing-snapping	*Cisticola ayresii*		24			
Coucal, Coppery-tailed	*Centropus cupreicaudus*		22,24		x	
Coucal, Senegal	*Centropus senegalensis*		6,42,49,50			
Coucal, White-browed	*Centropus superciliosus*		52,57			
Crombec, Long-billed	*Sylvietta rufescens*		9,28,36			
Crombec, Red-capped	*Sylvietta ruficapilla*		9			
Crow, Pied	*Corvus albus*		1,2,4,11,17,22,27,29,31,32,47,55,66	1,2,3,4,5,6,7,8, 9,10,11	x	
Cuckoo, African	*Cuculus gularis*		28,36,41			
Cuckoo, Levaillant's	*Clamator levaillantii*		33			
Cuckoo, Red-chested	*Cuculus solitarius*		6,8,17,18,21,27,33,36,39,42,47,55,66			
Cuckoo-finch	*Anomalospiza imberbis*				x	
Cuckooshrike, White-breasted	*Ceblepyris pectoralis*		41			
Dove, Red-eyed	*Streptopelia semitorquata*		11	3		
Drongo, Fork-tailed	*Dicrurus adsimilis*		1-4,6,7,11,12,14,15,17,18,21,33,36,39-42,47,55,59,62,65,66			
Drongo, Square-tailed	*Dicrurus ludwigii*		15,17			
Eagle, Lesser Spotted	*Clanga pomarina*		26,28,30,38	6		
Eagle, Long-crested	*Lophaetus occipitalis*		21,51			
Eagle, Steppe	*Aquila nipalensis*	EN	12,17			
Eagle, Tawny	*Aquila rapax*	VU	11,49,50			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Eagle, Wahlberg's	*Hieraaetus wahlbergi*		19,29,52	6		
Egret, Cattle	*Bubulcus ibis*			3	x	
Egret, Great	*Egretta alba*				x	
Egret, Yellow-billed	*Egretta intermedia*				x	
Eremomela, Green-capped	*Eremomela scotops*		14,15			
Eremomela, Yellow-bellied	*Eremomela icteropygialis*		7			
Falcon, Lanner	*Falco biarmicus*		1,8			
Firefinch, Brown	*Lagonosticta nitidula*		5,21,22,26			
Firefinch, Red-billed	*Lagonosticta senegala*	Cons	38, 40			
Fiscal, Common	*Lanius collaris*		26,52			
Flycatcher, Ashy	*Muscicapa caerulescens*		33			
Flycatcher, Pale	*Bradornis pallidus*		1,15,47,65,66			
Paradise-flycatcher, African	*Terpsiphone viridis*		6,19,22,33,40,41,49,50,55,59,65,66			
Flycatcher, Southern Black	*Melaenornis pammelaina*		22			
Flycatcher, Spotted	*Muscicapa striata*		15,22,24,36,40,42,49,50			
Pygmy-goose, African	*Nettapus auritus*				x	
Goshawk, African	*Accipiter tachiro*		6,28,32	7		
Greenbul, Grey Olive	*Phyllastrephus cerviniventris*		12,62			
Greenbul, Yellow-bellied	*Chlorocichla flaviventris*		1			
Guineafowl, Helmeted	*Numida meleagris*		6			
Harrier-hawk, African	*Polyboroides typus*			3		
Helmetshrike, White-crested	*Prionops plumatus*		39,42			
Heron, Black-headed	*Ardea melanocephala*		22			
Honeyguide, Lesser	*Indicator minor*		4			
Hoopoe, African	*Upupa africana*		17,28,41			
Hornbill, African Grey	*Lophoceros nasutus*		6,14,18			
Hornbill, Pale-billed	*Lophoceros pallidirostris*		20			
Hornbill, Red	*Tockus erythrorhynchus*		1			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Indigobird, Village	*Vidua chalybeata*		24,37,55			
Kingfisher, Brown-hooded	*Halcyon albiventris*		18,19			
Kingfisher, Half-collared	*Alcedo semitorquata*		57			
Kingfisher, Malachite	*Alcedo cristata*		37			
Kingfisher, Woodland	*Halcyon senegalensis*		8,32,36,55,65,66			
Kite, Black-winged	*Elanus caeruleus*		24,33	4,5,10		
Kite, Yellow-billed	*Milvus aegyptius*		1,21,24,29-33,37-39,41,42,51,57	2,3,4,5,6,7,8,9, 10,11	x	
Lark, Flappet	*Mirafra rufocinnamomea*		11,27,66			
Mannikin, Bronze	*Lonchura cucullata*		8,11,24,29,38,52,62			
Marsh-harrier, African	*Circus ranivorus*	Regional	30,42,57	7,1	x	
Martin, Banded	*Riparia cincta*		12,26,51,52		x	
Moorhen, Common	*Gallinula chloropus*				x	
Mousebird, Red-faced	*Urocolius indicus*		62			
Neddicky	*Cisticola fulvicapilla*		62			
Nightjar, Rufous-cheeked	*Caprimulgus rufigena*		9			
Oriole, African Golden	*Oriolus auratus*		1,3,4			
Oriole, Black-headed	*Oriolus larvatus*		17,18,29,31,33,36,39,41,62,65,66			
Oriole, Eurasian Golden	*Oriolus oriolus*		12,28,33			
Parrot, Brown	*Poicephalus meyeri*		33,65			
Petronia, Yellow-throated	*Gymnoris superciliaris*		12,33,66			
Pipit, African	*Anthus cinnamomeus*		8			
Pipit, Plain-backed	*Anthus leucophrys*		12,26			
Prinia, Tawny-flanked	*Prinia subflava*		24,37,38,47,51,66			
Puffback, Black-backed	*Dryoscopus cubla*		1,7,14,18,19,21,22,28,31,33,37,38,41,42,5 5,57,59,62,65			
Quelea, Red-billed	*Quelea quelea*				x	
Robin-Chat, White-browed	*Cossypha heuglini*		22			
Rock-thrush, Miombo	*Monticola angolensis*		18,22			
Roller, Broad-billed	*Eurystomus glaucurus*		59,62,65			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Roller, European	*Coracias garrulus*		33,41			
Roller, Lilac-breasted	*Coracias caudatus*		66			
Sandpiper, Common	*Actitis hypoleucos*		32		x	
Scimitarbill, Common	*Rhinopomastus cyanomelas*		24,39			
Scrub-Robin, White-browed	*Erythropygia leucophrys*		33,38			
Shrike, Lesser Grey	*Lanius minor*		66			
Shrike, Red-backed	*Lanius collurio*		29,31,41			
Snake-eagle, Black-chested	*Circaetus pectoralis*		11	3		
Snake-eagle, Brown	*Circaetus cinereus*		32	3		
Sparrow, House	*Passer domesticus*		11,17,26,31,38,55,57			
Sparrow, Northern Grey-headed	*Passer griseus*		24,33			
Sparrow-weaver, White-browed	*Plocepasser mahali*		9			
Spurfowl, Red-necked	*Pternistis afer*		26			
Spurfowl, Swainson's	*Pternistis swainsonii*		24,47,51,66			
Starling, Miombo Blue-eared	*Lamprotornis elisabeth*		3,59,65			
Starling, Cape	*Lamprotornis nitens*		65			
Starling, Violet-backed	*Cinnyricinclus leucogaster*		31,41,47,59,65,66			
Stonechat, Common	*Saxicola torquatus*		18,21,26,30,32,38,42,52			
Stork, Abdim's	*Ciconia abdimii*		32			x
Stork, White	*Ciconia ciconia*					x
Sunbird, Amethyst	*Chalcomitra amethystina*		4,7,9,12,17,24,29,33,38,42,49,50,55,57,59,62			
Sunbird, Anchieta's	*Anthreptes anchietae*		6,19,33,49,50			
Sunbird, Miombo Double-collared	*Cinnyris manoensis*		3,6,32,37,49,50			
Sunbird, Scarlet-chested	*Chalcomitra senegalensis*		4,6,14,18,40-42,62			
Sunbird, Variable	*Cinnyris venustus*		7,8,14,33,55,57,62,65			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Sunbird, Western Violet-backed	*Anthreptes longuemarei*		18,62,65			
Sunbird, White-bellied	*Cinnyris talatala*		21,28,55,66			
Swallow, Barn	*Hirundo rustica*		1,2,8,30,32,42,57		x	
Swallow, Greater Striped	*Cecropis cucullata*		52			
Swallow, Lesser Striped	*Cecropis abyssinica*		29,52			
Swallow, Mosque	*Cecropis senegalensis*		62			
Swallow, Pearl-breasted	*Hirundo dimidiata*		21,22,32			
Swallow, Rufous-chested	*Cecropis semirufa*		26,29,30,32,42,52,66			
Swift, Common	*Apus apus*		52,57			
Swift, Little	*Apus affinis*		2			
Tchagra, Black-crowned	*Tchagra senegalus*		2,6,9,33,65,66			
Thrush, Groundscraper	*Psophocichla litsitsirupa*		27			
Thrush, Kurrichane	*Turdus libonyanus*		65			
Thrush, Olive	*Turdus olivaceus*		41,65			
Tinkerbird, Yellow-fronted	*Pogoniulus chrysoconus*		18			
Tit, Rufous-bellied	*Parus rufiventris*		41,65			
Tit, Southern Black	*Parus niger*		37,38,49,50			
Turaco, Ross's	*Musophaga rossae*		29,33			
Turaco, Schalow's	*Tauraco schalowi*		6,8,11,24,26,40,47,55			
Turtle-dove, Cape	*Streptopelia capicola*		1,3,5,6,17,22,24,26,27,31,38,41,65,66			
Wagtail, African Pied	*Motacilla aguimp*		21,36,38		x	
Warbler, Common Reed	*Acrocephalus scirpaceus*		57			
Warbler, Garden	*Sylvia borin*		22			
Warbler, Great Reed	*Acrocephalus arundinaceus*		33			
Warbler, Sedge	*Acrocephalus schoenobaenus*		26			
Warbler, Willow	*Phylloscopus trochilus*		4,21,55,57			
Wattle-eye, Black-throated	*Platysteira peltata*		29,52			

Common Name	Scientific Name	Conservation Status	Point Count ID	Vehicle-based Surveys	Focal Site (Lake Lusiwasi)	Incidentals
Waxbill, Blue	*Uraeginthus angolensis*		31,37,42,47,52,55,66			
Waxbill, Common	*Estrilda astrild*		5,11,22,52,62			
Weaver, Holub's Golden	*Ploceus xanthops*		21,22			
Weaver, Spectacled	*Ploceus ocularis*		21,22,26,29,38,51			
Weaver, Village	*Ploceus cucullatus*		66			
White-eye, African Yellow	*Zosterops senegalensis*		2,4,20			
Whydah, Pin-tailed	*Vidua macroura*		21,52			
Widowbird, Yellow-mantled	*Euplectes macroura*		5,8,11,27,32,52		x	
Wood-dove, Blue-spotted	*Turtur afer*		41			
Wood-dove, Emerald-spotted	*Turtur chalcospilos*		6,14,17,29,37,41,59,62			
Woodpecker, Cardinal	*Dendropicos fuscescens*		31,41,65			

APPENDIX

5-7 *CONSERVATION CONCERN AND PRIORITY BIRD SPECIES*

BIRDS SPECIES OF CONSERVATION CONCERN AND PRIORITY SPECIES PRESENT AND POTENTIALLY PRESENT IN THE BESA

Family	Common Name	Scientific Name	Priority Species	Red List Status	Migration	Source		
						2019 Survey	GBIF 2024	SAPAB2, 2021
Accipitridae	Bateleur	*Terathopius ecaudatus*	P	EN	Partial/Possible Migrant	X	X	X
Accipitridae	Buzzard, Augur	*Buteo augur*	P	LC			X	X
Accipitridae	Buzzard, Common	*Buteo buteo*	P	LC	Palearctic Migrant	X	X	X
Accipitridae	Buzzard, Lizard	*Kaupifalco monogrammi*	P	LC		X	X	X
Accipitridae	Eage, Verreaux's	*Aquila verreauxii*	p	LC			X	
Accipitridae	Eagle, Booted	*Hieraaetus pennatus*	p	LC	Palearctic Migrant		X	
Accipitridae	Eagle, Crowned	*Stephanoaetus coronatus*	p	NT			X	
Accipitridae	Eagle, Lesser Spotted	*Clanga pomarina*	p	LC	Palearctic Migrant	X	X	X
Accipitridae	Eagle, Long-crested	*Lophaetus occipitalis*	p	LC		X		
Accipitridae	Eagle, Martial	*Polemaetus bellicosus*	p	EN			X	X
Accipitridae	Eagle, Steppe	*Aquila nipalensis*	p	EN	Palearctic Migrant	X	X	X
Accipitridae	Eagle, Tawny	*Aquila rapax*	p	VU		X	X	X
Accipitridae	Eagle, Wahlberg's	*Hieraaetus wahlbergi*	p	LC	Afro-tropical Migrant	X	X	X
Accipitridae	Goshawk, African	*Accipiter tachiro*	p	LC		X	X	X
Accipitridae	Goshawk, Dark Chantin	*Melierax metabates*	p	LC			X	X
Accipitridae	Harrier, Montagu's	*Circus pygargus*	P	LC	Palearctic Migrant		X	
Accipitridae	Harrier, Pallid	*Circus macrourus*	P	NT	Palearctic Migrant		X	X
Accipitridae	Harrier-hawk, African	*Polyboroides typus*	P	LC		X	X	X
Accipitridae	Hawk, Bat	*Macheiramphus alcinus*	P	LC			X	X
Accipitridae	Hawk-Eagle, African	*Aquila spilogaster*	P	LC			X	
Accipitridae	Honey-buzzard, Europe	*Pernis apivorus*	P	LC	Palearctic Migrant		X	X
Accipitridae	Kite, Black	*Milvus migrans*	P	LC	Palearctic Migrant		X	X
Accipitridae	Kite, Black-winged	*Elanus caeruleus*	P	LC	Partial/Possible Migrant	X	X	X
Accipitridae	Kite, Yellow-billed	*Milvus aegyptius*	P	LC	Palearctic Migrant			
Accipitridae	Marsh-harrier, African	*Circus ranivorus*	P	Regional		X	X	X
Accipitridae	Snake-eagle, Black-che	*Circaetus pectoralis*	P	LC	Partial/Possible Migrant	X	X	X
Accipitridae	Snake-eagle, Brown	*Circaetus cinereus*	P	LC	Partial/Possible Migrant	X	X	X
Accipitridae	Snake-eagle, Western B	*Circaetus cinerascens*	P	LC			X	X
Accipitridae	Sparrowhawk, Black	*Accipiter melanoleucus*	P	LC			X	X
Accipitridae	Sparrowhawk, Little	*Accipiter minullus*	P	LC				X
Accipitridae	Sparrowhawk, Ovambo	*Accipiter ovampensis*	P	LC			X	X
Accipitridae	Vulture, Lappet-faced	*Torgos tracheliotos*	P	EN			X	X
Accipitridae	Vulture, Palm-nut	*Gypohierax angolensis*	P	LC				X
Accipitridae	Vulture, White-backed	*Gyps africanus*	P	CR			X	
Accipitridae	Vulture, White-headed	*Trigonoceps occipitalis*	P	CR			X	X
Anatidae	Duck, African Black	*Anas sparsa*	P	LC			X	X
Anatidae	Duck, Knob-billed	*Sarkidiornis melanotos*	P	LC	Afro-tropical Migrant		X	
Anatidae	Goose, Spur-winged	*Plectropterus gambensis*	P	LC	Partial/Possible Migrant		X	
Anatidae	Whistling-Duck, White-f	*Dendrocygna viduata*	P	LC	Partial/Possible Migrant		X	
Ardeidae	Egret, Cattle	*Bubulcus ibis*	P	LC	Partial/Possible Migrant	X	X	
Ardeidae	Heron, Black-headed	*Ardea melanocephala*	P	LC	Partial/Possible Migrant	X	X	X
Ardeidae	Heron, Grey	*Ardea cinerea*	P	LC	Partial/Possible Migrant		X	X
Bucorvidae	Ground-hornbill, Southe	*Bucorvus leadbeateri*	P	VU			X	X
Ciconiidae	Stork, Abdim's	*Ciconia abdimii*	P	LC	Afro-tropical Migrant	X	X	
Ciconiidae	Woolly-necked, African	*Ciconia microscelis*	P	LC			X	
Ciconiidae	Stork, White	*Ciconia ciconia*	P	LC	Palearctic Migrant	X	X	
Falconidae	Falcon, Amur	*Falco amurensis*	P	LC	Palearctic Migrant		X	X
Falconidae	Falcon, Lanner	*Falco biarmicus*	P	LC	Partial/Possible Migrant	X	X	X
Falconidae	Falcon, Peregrine	*Falco peregrinus*	P	LC	Palearctic Migrant/Partial/Possible Migrant		X	X
Falconidae	Hobby, Eurasian	*Falco subbuteo*	P	LC	Palearctic Migrant		X	X
Otididae	Bustard, Black-bellied	*Lissotis melanogaster*	P	LC			X	
Pandionidae	Osprey	*Pandion haliaetus*	P	LC	Palearctic Migrant		X	
Pelecanidae	Pelican, Great White	*Pelecanus onocrotalus*	P	LC	Partial/Possible Migrant		X	
Ploceidae	Weaver, Bar-winged	*Ploceus angolensis*	P	Regional			X	X
Psittacidae	Parrot, Cape	*Poicephalus robustus*		VU			X	
Rallidae	Crake, Corn	*Crex crex*	P	LC	Palearctic Migrant		X	X
Strigidae	Eagle-owl, Spotted	*Bubo africanus*	P	LC			X	X
Strigidae	Eagle-owl, Verreaux's	*Bubo lacteus*	P	LC			X	X
Strigidae	Owl, Marsh	*Asio capensis*	P	LC			X	
Strigidae	Wood-owl, African	*Strix woodfordii*	P	LC			X	X
Tytonidae	Grass-owl, African	*Tyto capensis*	P	LC			X	
Tytonidae	Owl, Barn	*Tyto alba*	P	LC			X	X

APPENDIX

5-8 *BAT SURVEY SHEETS*

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 01/11/2019 Site name Kasanka Forest Reserve Site co-ordinates −10.2061, 31.2435

Net 1 9 m Location & habitat details: between riverine & rocky area
Net 2 9 m Location & habitat details:
Net 3 ___ m Location & habitat details:
Net 4 ___ m Location & habitat details:
Net 5 ___ m Location & habitat details:
Net 6 ___ m Location & habitat details:

General habitat description: Riverine woodland, small dambo, rocky outcrops

Net open time: 18:20 Start temp ___
Net close time: 21:05 End temp ___

Cloud cover few clouds
Wind mild
Rain —
Moon crescent

Surveyors Clare matelce, Kelly Phiri, Kenny Kambinki

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:45	2	Rhinolophus mossambicus	M	no testes visible	Ad	64.1	18	49	31	Horseshoe width 14.1. Grey-brown above, paler below CM/2019/43 Dicel
2	20:38	2	"	M	"	Ad	64.1	20	49	29	Horseshoe width 14.3. Call PF ~~PF~~
											37820 Colour as for 1

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 02/4/2019 Site name Kasanka Forest Reserve Site co-ordinates −10.2061, 31.2635

Net 1 9 m Location & habitat details: Dambo near riverine woodland
Net 2 12 m Location & habitat details: "
Net 3 6 m Location & habitat details: "
Net 4 9 m Location & habitat details: "
Net 5 9 m Location & habitat details: Gulley between rocky outcrops
Net 6 ___ m Location & habitat details:

General habitat description: Riverine woodland, small dambo, rocky outcrops

Net open time: 18:05 Start temp ___
Net close time: 21:30 End temp ___

Cloud cover few clouds
Wind mild
Rain —
Moon crescent

Surveyors Clare Matoka ZESCO team (3)
Kelly Phiri
Kenny Kambombi
Maya Brennan-Jacot

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	18:25	1	Neoromicia nana	F	enlarged nipples	Ad	32.9	15.6	19.8	4.2	Thumb pads. Reddish-brown above, cream-white below
2	19:15	5	Rhinolophus mossambicus n	M	no testes visible	Ad	63.5	17.0	46	29	H.S.W. 14.3 PF ~37+20 Grey-brown
3	19:15	5	"	M	"	Ad	63.3	18	48	30	H.S.W. 14.3 PF ~38+20 cth/20/19/4/19
4	20:45	1	Eptesicus cryptonus n	F	"	JW	56.4	16	51	35	6 palatal ridges, 2 post-dental, equally spaced, white ear tufts

Page no. 1 of 1

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 03/11/2019 Site name 40km E of Nalcombe Site co-ordinates -9.2791, 32.3974

Net 1 6 m Location & habitat details: in open area between wooded patches
Net 2 9 m Location & habitat details: "
Net 3 12 m Location & habitat details: "
Net 4 9 m Location & habitat details: "
Net 5 ___ m Location & habitat details:
Net 6 ___ m Location & habitat details:

General habitat description: Dry dambo next to secondary miombo woodland

Net open time: 18:00 Start temp ___
Net close time: 21:30 End temp ___

Cloud cover 70%
Wind strong
Rain —
Moon crescent

Surveyors Clare Matoka, Celty Phiri, Maya Breuman-Jacot, ZESCO team (2)

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:00	1	? (vespertilionidae)	F	pregnant	Ad	32.7	17	26.5	9.5	Bicoloured fur, no thumb pads. released because pregnant. release call recorded at 19:38
2	19:00	1	Epomophorus dobsoni	M	Small testes	Ad	87.2	18	142	134	well developed shoulder tufts (epaulettes) wing biopsy CM/2019/46 5 clear palatal ridges, 2 post dental
3	19:40	3	Epomophorus gyphurus	F	—	Juv	61.8	39	80	41	Greyish-brown, paler below
4	21:30	4	Epomophorus labiatus	M	—	Sub-Ad	62.9	23	71	48	well developed epaulettes, wing joints not fully fused, dark collar. 6 palatal ridges, 2 post dental Head L 39.4 CM/2019/45
											Bat 1: 2 upper incisors, posterior & ½ anterior, 1 up visible.

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LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 04/11/2019 Site name 40km E of Nakonde Site co-ordinates -9.2791, 32.3974

Net 1 12 m Location & habitat details: In transition zone between
Net 2 9 m Location & habitat details: dry dambo & woodland
Net 3 9 m Location & habitat details:
Net 4 9 m Location & habitat details:
Net 5 9 m Location & habitat details:
Net 6 6 m Location & habitat details:

General habitat description: Dry dambo next to secondary miombo woodland

Net open time: 18:60 Start temp _____
Net close time: 21:20 End temp _____

Cloud cover 10%
Wind strong
Rain —
Moon 1/2

Surveyors Clare Nacteke
Kelby Phiri
Maya Brennan-Jacot
Kenny Kambombi

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:20	3	~~Vespertilionidae~~ ~~Neoromicia~~ ~~capensis~~	F	enlarged nipples	Ad	32.6	16	24	8	Brc&lowed fur, long, curved, pointed tragus, brown above, off-white below, 2 upper incisors, posterior <½ anterior, 1 LP. Forehead flatish CM/2019/67 ~~droppings~~ Released 19:52 droppings only.
2	21:20	6	Laephotis botswanae	F	enlarged nipples	Ad	37.5	26.5	34.5	8	Ears 18 Tragus boomerang-shaped CM/2019/48

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LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 06/4/2019 Site name 50km NW of Mpika Site co-ordinates -11.4655, 31.2414

Net 1 12 m Location & habitat details: In powerline wayleave
Net 2 9 m Location & habitat details: "
Net 3 9 m Location & habitat details: In miombo woodland nr. powerline
Net 4 6 m Location & habitat details: "
Net 5 9 m Location & habitat details: "
Net 6 9 m Location & habitat details: "

General habitat description: Secondary miombo woodland next to powerline

Net open time: 18:00 Start temp _____
Net close time: 21:20 End temp _____

Cloud cover —
Wind mild
Rain —
Moon >1/2

Surveyors Clare Mataka
Kelly Phiri
Kenny Kambamba

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:50	2	Pteropodidae		escaped from net before recording						

Page no. 1 of 1

Lots of dust/smoke from crickets for bat detector so had to turn it away from woodland.

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 07/11/2019 Site name Nachikufu Caves Site co-ordinates -12.2320, 31.1446

Net 1 9 m Location & habitat details: Miombo woodland with grass
Net 2 9 m Location & habitat details: "
Net 3 9 m Location & habitat details: Near riverine woodland
Net 4 6 m Location & habitat details: "
Net 5 3 m Location & habitat details: In cave
Net 6 ___ m Location & habitat details:
Hand netting in cave

General habitat description: Rocky ~~area~~ hills with caves, miombo woodland, riverine woodland.

Net open time: 18:00 Start temp ___
Net close time: 22:00 End temp ___

Cloud cover —
Wind strong
Rain —
Moon 7½

Surveyors Clare Mateke, Kelly Phiri, Kenny Kambimbi, Maya Brennan-Jacot

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	18:50	1	Hipposideros caffer	F	pregnant	Ad	50.6	17	30	13	Released because pregnant
2	20:20	5	Eptesicus hottentotus	M	no testes visible	Ad	47	16	35	19	Dark green-brown above, paler yellowish-cream below; dark face, blackened fur, 2 upper incisors. Fur with gold tinge, black wings & tongue
											CM/2019/49
3	20:30	hand net	H. caffer	F	pregnant	Ad	49.55	21	36	15	~~with baby (5g)~~
4	"	"	"	F	lactating	Ad	49.6	17		14	with baby (3g)
5	"	"	"	F	"	Ad	49.4	20		8	" (4g)
6	"	"	"	F	pregnant	Ad	51.1	16	30	14	
7	"	"	"	F	lactating	Ad	50.65	17		14	with baby (3g) CM/2019/50 droppings
8	"	"	"	F	"	Ad	50.65	18		10	" (6g)
9	21:35	4	Epomophorus crypturus	F	post lactating	Sub-Ad	82.16	39	118	79	6 palatal ridges, 2 pr dental
10	22:10	3	"	M	1 testis visible	Sub-Ad	84.8	22	122	100	" " "

19:40 over 25 bats, possibly ~50 in main cave flying around. Not seen earlier in day. At least 9 babies hanging on walls of main tunnel. H. caffer.

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 08/11/2019 Site name 50 km NW of Mpika Site co-ordinates −11.4680, 31.2462

Net 1 12 m Location & habitat details:
Net 2 6 m Location & habitat details:
Net 3 9 m Location & habitat details:
Net 4 9 m Location & habitat details:
Net 5 9 m Location & habitat details:
Net 6 ___ m Location & habitat details:

General habitat description: Secondary miombo woodland near powerline

Net open time: 18:00 Start temp ___
Net close time: 21:10 End temp ___

Cloud cover 30%
Wind —
Rain —
Moon > ½

Surveyors Clare Mataka, Kelly Phiri, Kenny Kambinti

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:37	2	Epomophorus crypturus	F	post lactating	Ad?	79.2	26	114	88	Sandy-crowned, yellowish head. cm/2019/52

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LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 09/4/2019 Site name Nachikufu Caves Site co-ordinates -12.2320, 31.1446

Net 1 12 m Location & habitat details: Open miombo woodland with grass
Net 2 9 m Location & habitat details: "
Net 3 9 m Location & habitat details: Near riverine woodland
Net 4 6 m Location & habitat details: "
Net 5 3 m Location & habitat details: In cave
Net 6 ___ m Location & habitat details:

General habitat description: Rocky hills with caves, miombo woodland, riverine woodland

Hand netting in cave
Net open time: 18:06 Start temp ___
Net close time: 21:10 End temp ___

Cloud cover 30%
Wind strong, reducing later
Rain —
Moon 3/4

Surveyors Clare Mateke
Kelby Phiri
Kenny Kambimbi

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	19:10	Hand net	Hipposideros caffer	F	Nipples & false nipples not visible	Ad	47.9	16	26	10	Died in hand CM/2019/53
2	19:53	"	"	M	no testes visible	Ad	49.5	16	27	11	Call recorded at 20:16 WS on batcorder detectors CM/2019/54
3	20:00	"	"	F	Pregnant small false nipples	Ad	50.1	17	30	13	Call recorded at 20:19 - 20:21 WS. No photos taken.

~40 juv. H. caffer on walls of larger cave tunnel at 19:05 hrs with >50 adults flying around.

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 10/11/2019 Site name Kamana Forest Reserve Site co-ordinates −13.0641, 30.5600

Net 1 12 m Location & habitat details:
Net 2 9 m Location & habitat details:
Net 3 9 m Location & habitat details:
Net 4 9 m Location & habitat details:
Net 5 6 m Location & habitat details:
Net 6 9 m Location & habitat details:

General habitat description: Mature miombo woodland near powerline

Net open time: 18:15 Start temp
Net close time: 21:15 End temp

Cloud cover −
Wind mild
Rain −
Moon nearly full

Surveyors Clave Matelca, Kelly Phiri, Kenny Kaumbinji

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
X											

No bats seen, heard or captured

Page no. 1 of 1

LIVINGSTONE MUSEUM - BAT SURVEY RECORDING SHEET

Survey date 11/4/2019 Site name Lake Lusiwasi Site co-ordinates −12.9689, 30.6515

Net 1 9 m Location & habitat details: Mango edge of lake
Net 2 12 m Location & habitat details: "
Net 3 9 m Location & habitat details: "
Net 4 9 m Location & habitat details: "
Net 5 9 m Location & habitat details: "
Net 6 6 m Location & habitat details: "

General habitat description: Lakeshore

Net open time: 18:20 Start temp
Net close time: 21:20 End temp

Cloud cover 20%
Wind medium, increasing later
Rain —
Moon full

Surveyors Clare Matoka, Ickelty Phiri, Kenny Kambimli

Bat No	Time	Net No	Species	Sex	Reprod. Features	Age	Forearm	Bag wt	Bat & bag	Bat wt	Notes
1	18:35	1	Neoromicia nana	F	enlarged nipples	Ad	31	16	20	4	2 upper incisors, posterior nearly as long as anterior. Thumb pads, concave forehead CM/2019/55
2	19:48	1	Vespertilionidae	F	"	Ad	32.1	17	24	5.1	No thumb pads, 2 upper incisors, posterior ⅓ anterior (minute) CM/2019/56

SURVEY SITES

B1 – Kasama Forest Reserve



Rocky outcrops



Small dambo and riparian woodland





Mwela Rock Art Site near survey site B1

B2 – Dambo 40km East of Nakonde



Dry dambo



Miombo woodland next to dry dambo

B3 – Woodland 50 km NW of Mpika



Powerline running through miombo woodland



Secondary miombo woodland

B4 – Nachikufu Caves



Rocky hill with several caves and crevices



Inside main cave



Inside smaller cave



Landscape surrounding Nachikufu caves



Open woodland and riparian woodland near Nachikufu caves

B5 – Kanona Forest Reserve



Miombo woodland



Miombo woodland

B6 – Lake Lusiwasi





Nets set up next to Lake Lusiwasi

BAT SPECIES CAPTURED DURING SURVEY



Epomophorus crypturus



Epomophorus dobsonii



Epomophorus labiatus



Rhinolophus mossambicus



Hipposideros caffer



Hipposideros caffer



Hipposideros caffer roosting in Nachikufu Cave



Hipposideros caffer females roosting with juveniles



Eptesicus hottentotus



Laephotis botswanae



Neoromicia nana



Pipistrellus group



Pipistrellus group

APPENDIX

5-9 *BAT SPECIES LIST*

BAT SPECIES PRESENT AND POTENTIALLY PRESENT IN THE STUDY AREA

Family	Genus	Species	Scientific Name	Common Name	IUCN Red List Status	Source	
						Field Survey 2019	GIIF 2024
Hipposideridae	Hipposideros	Caffer	*Hipposideros Caffer*	Sundevall's Leaf-nosed Bat	LC	x	
Hipposideridae	Hipposideros	Ruber	*Hipposideros Ruber*	Noack's Leaf-nosed Bat	LC		x
Macronycteridae	Macronycteris (Hipposi	vitattus	*Macronycteris (Hipposideros) vitattus*	Striped Leaf-nosed Bat	NT	x	
Molossidae	Chaerephon	Ansorgei	*Chaerephon Ansorgei*	Ansorge's Free-tailed Bat	LC		x
Molossidae	Chaerephon	Chapini	*Chaerephon Chapini*	Pale Free-tailed Bat	LC		x
Molossidae	Mops	Condylurus	*Mops Condylurus*	Angolan Free-tailed Bat	LC		x
Molossidae	Tadarida	Aegyptiaca	*Tadarida Aegyptiaca*	Egyptian Free-tailed Bat	LC		x
Nycteridae	Nycteris	Thebaica	*Nycteris Thebaica*	Egyptian Slit-faced Bat	LC		x
Pteropodidae	Eidolon	Helvum	*Eidolon Helvum*	African Straw-coloured Fruit Bat	NT		x
Pteropodidae	Epomophorus	Crypturus	*Epomophorus Crypturus*	Peters's Epauletted Fruit Bat	LC	x	
Pteropodidae	Epomophorus	Dobsonii	*Epomophorus Dobsonii*	Dobson's Epauletted Fruit Bat	LC	x	
Pteropodidae	Epomophorus	Labiatus	*Epomophorus Labiatus*	Little Eauletted Fruit Bat	LC	x	
Rhinolophidae	Rhinolophus	Clivosus	*Rhinolophus Clivosus*	Geoffroy's Horseshoe Bat	LC		x
Rhinolophidae	Rhinolophus	Hildebrandtii	*Rhinolophus Hildebrandtii*	Hildebrandt's Horseshoe Bat	LC		x
Rhinolophidae	Rhinolophus	Mossambicus	*Rhinolophus Mossambicus*	Mozambican Horseshoe Bat	LC	x	
Vespertilionidae	Eptesicus	Hottentotus	*Eptesicus Hottentotus*	Long-tailed Serotine	LC	x	
Vespertilionidae	Laephotis	Botswanae	*Laephotis Botswanae*	Botswana Long-eared Bat	LC	x	
Vespertilionidae	Myotis	Welwitschii	*Myotis Welwitschii*	Welwitsch's Myotis	LC		x
Vespertilionidae	Neoromicia	Nana	*Neoromicia Nana*	Banana Bat	LC	x	
Vespertilionidae	Pipistrellus	Hesperidus	*Pipistrellus Hesperidus*	Dusky Pipistrelle	LC		x
Vespertilionidae	Scotophilus	Viridis	*Scotophilus Viridis*	Green House Bat	LC		x

APPENDIX

5-10 LARGE MAMMALS CONSULTATIONS MEETING MINUTES

AFRICAN
ENVIRONMENTAL
ZESCO
COMPLIANCE SERVICES
wsp

DATA COLLECTION TOOL - LARGE MAMMALS

On behalf of ZESCO, African Environmental Compliance Services (AECS) and WSP are reviewing the Environmental & Social Impact Assessment (ESIA) & Resettlement Action Plan (RAP) for the Tanzania-Zambia Power Interconnection Study. The objective of this review is to update the existing ESIA that was completed in 2017 and develop a Biodiversity Management and Monitoring Plan for the project study area. As part of the review and development of the BMMP, we require to have a clear understanding of the large mammals present in the study area and their use of habitats available. This information is intended to help us develop appropriate (i) mitigation measures against the impacts of the planned construction and establishment of the 400 kV Transmission line from Pensulo in Zambia through Kasama to Mbeya in Tanzania, then to Nairobi through Singida and Arusha, and (ii) management and monitoring procedures for their conservation in the project areas. Therefore, we kindly request that you participate in our data collection exercise by providing responses to the following questions. Questions have been tiered into five sections relating to species present, distribution and habitats, migratory routes, impacts and mitigations and management of species. This survey should take up 15 minutes of your time.

We thank you in anticipation.

Your Name: _____

You Organization: _____

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.

✓ Hippos – Chanbeshi ✓ Waterbucks Bushpig, Chacma Baboon, Vervet Hartebeest, Sable, Kaan
✓ Buffalo – Chanbeshi, Migrating Eland, Lions, Leopards
✓ elephants – Senga, Hyaena Black leche, Reedbucks Sikunga

2. Is there a difference in the number of large mammal species present today? Please explain your response.

Yes – Big difference (Poaching) + encroachment most animals are not resident they leave + go back

3. How many large mammal species are present in the project area? Please provide a list of these.

Hippos – Chanbeshi Open area.
Sitatunga – Chanbeshi – Small rivers along
Wildpigs? Bush pigs, Chacma + wildpigs Jackals.

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?

Last patrol, last month. (two weeks ago)

5. Which species were sighted? Hippos – Chanbeshi area
✓ a school of 4 or 5. ✓

6. Kindly provide other locations and dates of large mammal sightings in the project area.

* Chanbeshi – Hippo
* Chanbeshi – Sitatunga ✓ foot prints
* Baboons + wildpigs Ghana and Lagwets

Habitats lost to local residents activities, so most have moved into forests.

Jackals pretty common + problematic as they do cause rabies.

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7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). Encroachment – farming + fishing
75% – encroachment (Tsavo NP + Chyulu GMA)
Corridor between Tsavo Mada Tsavo NP.
* Hippos – during farming season HWC (–Chyulu Hills + Mungai)

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations.
Lions – Border for Kajiado – Mungai
10. How long does the migration last and during which season do they occur?
Lions in mid of June July – Tanzania (Kasenga border) to Nsenga.
* Mungai lions
11. Kindly specify the areas where these occur. Nsenga
Elephants for Tanzania to Mungai to Chyulu Makasa.
Lions – Mungai from Kaseshi, Grand Tanzania NP, near Kalambo falls.
12. Do you know the reason for the animal migrations occurring in your area?
13. If yes to question (13) please explain.
Old routes ⇒ area is mountainous + people might be settled so its quiet.

SECTION D IMPACTS AND MITIGATIONS

Construction
* Animal translocation for animals in the area during construction
* Wire cables under lock + key, to safeguard snaring.

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? No, not much impact as they are already well established.
15. If yes to question 14, please list the impact(s).
* Migration + not resident.
* Perched by mainly CBOs those that are there already.
16. For the impact(s) listed in 15, kindly indicate your proposed mitigation measure.
* CSR ✓ CRB in Tsavo will be formed + should consider supporting Chungu CRB + Chaketshi CRB.

SECTION E MANAGEMENT AND ~~MITIGATION~~ MONITORING PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? Stepping stone – Conservation of forests
18. If yes to question 18, please provide details of your proposal.
① Involve all stakeholders particularly communities in advocacy the implementation of the Plan.
② ✓ Foot patrols by DNPW ⇒ animal sightings + presence.

Date: 07/11/2019 – BOSO ZULU

Signature:

– Kingford Muchela

– Peter Mambwe P. Mambwe.

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WSP

DATA COLLECTION TOOL - LARGE MAMMALS

On behalf of ZESCO, African Environmental Compliance Services (AECS) and WSP are reviewing the Environmental & Social Impact Assessment (ESIA) & Resettlement Action Plan (RAP) for the Tanzania-Zambia Power Interconnection Study. The objective of this review is to update the existing ESIA that was completed in 2017 and develop a Biodiversity Management and Monitoring Plan for the project study area. As part of the review and development of the BMMP, we require to have a clear understanding of the large mammals present in the study area and their use of habitats available. This information is intended to help us develop appropriate (i) mitigation measures against the impacts of the planned construction and establishment of the 400 kV Transmission line from Pensulo in Zambia through Kasama to Mbeya in Tanzania, then to Nairobi through Singida and Arusha, and (ii) management and monitoring procedures for their conservation in the project areas. Therefore, we kindly request that you participate in our data collection exercise by providing responses to the following questions. Questions have been tiered into five sections relating to species present, distribution and habitats, migratory routes, impacts and mitigations and management of species. This survey should take up 15 minutes of your time.

We thank you in anticipation.

Your Name: Sekuta Setwell Mupeta Ngosa

You Organization: Serenje Chiefdom. — John Lwambosha Kanona Section.

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.

   Mpombo, duli-duiker, kalulu, migratory nkoshi, poyo — from Kasanka ✓ but do not stay
   * Gabon Boa.

2. Is there a difference in the number of large mammal species present today? Please explain your response.

   Yes, very big — very disturbing as we have nothing to show our children & grandchildren. — population boom due to encroachment. Animals are not free

3. How many large mammal species are present in the project area? Please provide a list of these.

   ✓Mpombo very few, & very skitish
   ✓Kalulu - but only in open plains & not in enclosed.

*Even Monkey's have left the area & due to human wildlife conflict ✓

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area? 1999

   ~~No~~ Really long ago & even if found it on the run.

5. Which species were sighted? Mpombo

6. Kindly provide other locations and dates of large mammal sightings in the project area.

   Very far from here, maybe in Kabota area in Chief Chisomo, area which is inhabitable because of hilly places. People don't not settle in this area.

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). Encroachment. + ~~water~~ - saltpans overtake by agricultural activities + livestock watering.

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations. → lions, nkoshi + puku. hippos in response to those
10. How long does the migration last and during which season do they occur? during early dry season + may stay for 3 weeks, but most stay long because of those for people.
11. Kindly specify the areas where these occur. Kasanka* Musola to-Kanona side area. along the river Butetele + Akalaba, Chikanda * Also after Indichele (salt pan). ⇒ Ichani Shali kweta ichichole.
12. Do you know the reason for the animal migrations occurring in your area? early dry season.
13. If yes to question (13) please explain. ✓ In search of food but basically in the hot because of human presence.

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? NO
15. If yes to question 15, please list the impact(s). As the animal densities of elephants + the ~~and~~ herds cannot reach the pans due
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure.

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area?
18. If yes to question 18, please provide details of your proposal. ✓ Alternative livelihoods eg. beekeeping ✓ Create stepping stones near rivers that promote congregation of large mammals + improve habitats for animals.

Date: 5/12/2019 Signature:

0976566325

AFRICAN ENVIRONMENTAL COMPLIANCE SERVICES

ZESCO

WSP

DATA COLLECTION TOOL - LARGE MAMMALS

On behalf of ZESCO, African Environmental Compliance Services (AECS) and WSP are reviewing the Environmental & Social Impact Assessment (ESIA) & Resettlement Action Plan (RAP) for the Tanzania-Zambia Power Interconnection Study. The objective of this review is to update the existing ESIA that was completed in 2017 and develop a Biodiversity Management and Monitoring Plan for the project study area. As part of the review and development of the BMMP, we require to have a clear understanding of the large mammals present in the study area and their use of habitats available. This information is intended to help us develop appropriate (i) mitigation measures against the impacts of the planned construction and establishment of the 400 kV Transmission line from Pensulo in Zambia through Kasama to Mbeya in Tanzania, then to Nairobi through Singida and Arusha, and (ii) management and monitoring procedures for their conservation in the project areas. Therefore, we kindly request that you participate in our data collection exercise by providing responses to the following questions. Questions have been tiered into five sections relating to species present, distribution and habitats, migratory routes, impacts and mitigations and management of species. This survey should take up 15 minutes of your time.

We thank you in anticipation.

Your Name: VICTOR MAKOMBE - PLANNING OFFICER

You Organization: DNPW

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   ELEPHANT, RHINO, BUFFALO, KUDU, HIPPO, LION
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   There is difference in the number of large animals due to Settlements and poaching
3. How many large mammal species are present in the project area? Please provide a list of these.
   ELEPHANT, HIPPO, KUDU, LION, Eland

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   2 months ago (lions at chilonga), Mutinondo large mammals are always there.
5. Which species were sighted? Lions, Buffalo, Hippo, Kudu, Eland
   Elephant
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   TAZARA AREA (HIPPO) on 18/04/19, HIPPO (CHIKWASDA AREA) - 05/02/19
   LUCHEMBE (HIPPO) 30/07/18

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s) - Passage through the Corridor
- In search of livestock
- Stray animals

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? ~~No~~ Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations. Lion, Elephant
10. How long does the migration last and during which season do they occur? ~~N/A~~ During dry season between (March – July)
11. Kindly specify the areas where these occur. ~~N/A~~ Kalonje area and Busingimfumu Area
12. Do you know the reason for the animal migrations occurring in your area? ~~No~~ Yes
13. If yes to question (13) please explain. Stray animals, In search of livestock and Passage in the corridor

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? - Habitat loss
15. If yes to question 15, please list the impact(s). Vegetation loss
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure.
- Minimise the vegetation to be cleared, Concentrate on the already cleared ~~or~~ area,

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? Conduct routine Census of mammals
18. If yes to question 18, please provide details of your proposal. Monitoring activities (Suspected Corridors, Also adherance to General Management Plans and other Natural Resources Intergrated plans

Date: 6-11-19 Signature:

AFRICAN ENVIRONMENTAL COMPLIANCE SERVICES

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We thank you in anticipation.

Your Name: MWANSA CHISANGA

You Organization: DNPW Muchinga - ECOLOGIST

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   Roan and Sable antelopes, warthog, bushpig, lion, leopard buffalo, puku, hippo, common, duiker, reedbuck, gysbok bushbuck, zebra.
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   Yes - The number of sightings has significantly reduced and most animals present are elusive
3. How many large mammal species are present in the project area? Please provide a list of these.
   Sable, warthog, kudu, warthog, bushpig, puku, Hippo, buffalo, impala, reedbuck, hartebeest, waterbuck, bushbuck

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   Lion - chilongoi, makambwa, hippo - Lukulu, Kwitikila rivers, buffalo - Luchamba
5. Which species were sighted? Lion, hippo and buffalo, sitatunga.
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   Mutinondo wilderness ranch, Kalonje

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). Lions are mostly old targeting livestock, neighboring N. Luangwa & Munyamadzi corridors aiding movements
→ rivers channels where hippos exist naturally
- human settlements

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations. lion, buffalo, hippo
10. How long does the migration last and during which season do they occur? mostly dry season when water in seasonal streams reduce
11. Kindly specify the areas where these occur. North Luangwa - Mukungule - Mwangimfumu forest - Mpika
North - South Luangwa, Munyamadzi GMA - Kalonje - Lavushi Manda
12. Do you know the reason for the animal migrations occurring in your area? Yes
13. If yes to question (13) please explain. looking for easy meals (livestock)

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? vegetation clearance
15. If yes to question 14 please list the impact(s). reduced habitat, possible sedimentations of rivers that tributaries to rivers that flow in Lavushi Manda NP
16. For the impact(s) listed in 15, kindly indicate your proposed mitigation measure.
→ Try as much as possible to reduce clearance of riparian forests

SECTION E MANAGEMENT AND ~~MITIGATION~~ MONITORING PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? Yes
18. If yes to question 18, please provide details of your proposal. → preserve wetland or (mitigation) waterbodies in the project area
→ Provision of CPSes to selected community members to capture animal activities (spoor, fecal matter, live sightings)
→

Date: 06/11/2019 Signature:

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We thank you in anticipation.

Your Name: ZGOZI SAMUEL - SENIOR RANGER KASAMA

You Organization: DEPARTMENT OF NATIONAL PARKS & WILDLIFE - KASAMA

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   AFRICAN ELEPHANTS, BUFFALO, HIPPO, LEOPARD HARTEBEEST, ROAN, BLACK LENCHOLE, WATER-BUCKS CHACMA BABOON, COMMON DUICKER, GRYSBOK, JACKALS
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   POPULATIONS OF MOST SPECIES HAVE REDUCED DUE TO BEING DISPLACED FROM THEIR HABITATS BY LOCAL RESIDENTS - ALSO POACHED
3. How many large mammal species are present in the project area? Please provide a list of these.
   ~~BLACK LENCHWE~~, HIPPOS, CHACMA BABOON, VERVET MONKEY SITATUNGA, GRYSBOK, COMMON DUICKER, WATER-BUCK LEOPARD,

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   ISANGANO NATIONAL PARK / CHAMBESHI GMA
5. Which species were sighted? HIPPOS, CHACMA BABOONS, VERVET MONKEYS, LEOPARD, COMMON DUICKER, GRYSBOK
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   (a) ISANGANO NATIONAL PARKS - 18/10/19 TO 25/10/19
   (b) KASESHYA BORDER POINT - MBALA - EARLY THIS YEAR
   (c) A GAZETTED PARK IN TANZANIA NEAR ZAMBIA BETWEEN MBALA AND NAKONDE. LIONS ON BREEDING IN JUNE/JULY.

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7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). (1) ISANGANO N.P. – ENCROACHMENT AND POACHING
(2) ELEPHANTS FROM KATAVI N.P. (TANZANIA) – POACHING

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? YES, ELEPHANTS
9. If answer is yes to question 9, please indicate the species undergoing the migrations.
AS ABOVE AND HIPPOS
10. How long does the migration last and during which season do they occur?
RAINY SEASON
11. Kindly specify the areas where these occur. ALONG CHAMBESHI RIVER AND ITS DISTRIBUTARIES, ALSO IN HABITATS OF ISANGANO N.P. CHAMBESHI & LUWINGU GUMAS
12. Do you know the reason for the animal migrations occurring in your area? YES
13. If yes to question (13) please explain. STRESS, SHORTAGE OF FOOD, POACHING, HUMAN ENCROACHMENT OF WILDLIFE PROTECTED AREAS, DROUGHTS AND WILDLIFE ROUTES/CORRIDORS, DROUGHTS FLOODS ETC.

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? LOSS OF HABITAT, WATER-POINTS, FOOD, BREEDING AREAS
15. If yes to question 15, please list the impact(s). AS ABOVE
FORMATION OF COMMUNITY RESOURCE BOARDS IN LUWINGU AND CHAMBESHI GUMAS IN LUWINGU AND CHINSALI/KASAMA DISTRICTS
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure.
(1) Rehabilitation of Forest Reserves (existing)
(2) CREATION OF RANCHES, AND COMMUNITY PARTNERSHIP PARKS/FORESTS

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? TO FORMULATE BYE-LAWS TO HELP REINFORCE THE EXISTING LAWS
18. If yes to question 18, please provide details of your proposal. AS ABOVE
(CHIEFS, HEADMEN AND LOCAL COURTS TO ASSIST IN EFFECTIVE IMPLEMENTATION OF THE WILDLIFE LAWS.

Date: 07/11/2019. Signature:

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DATA COLLECTION TOOL - LARGE MAMMALS

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We thank you in anticipation.

Your Name: BRIAN SAILI

You Organization: MPUMBA CDB (CHAIRPERSON)

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.

   Elephants Various antelopes - Sable, Elands Common Duikers, warthogs, black rhinos.

2. Is there a difference in the number of large mammal species present today? Please explain your response.

   Yes => human activities - settlements & farming + infrastructure development - railine/pipeline

3. How many large mammal species are present in the project area? Please provide a list of these.

   Duikers, wild pigs, Bushbuck, (small mammals Area and Tera)

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?

   first week November 2019

5. Which species were sighted? Sable - Spore & fresh Scat. Source of Mulesa stream

6. Kindly provide other locations and dates of large mammal sightings in the project area.

   * Kalonje (5 animals)

Animal counts
Kasanka ⟹ Comaco + Kasanka
for County Forests
(Buffer Zone to National Park)

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). human settlement/activities.

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations.
* Elephants → SL – Mutinondo Hippos → LMNP ⇒ to Mpamba. Lwayra ⇒ to Mpamba
10. How long does the migration last and during which season do they occur? Rainy season.
11. Kindly specify the areas where these occur.

* 2014 last time reached near ZAWA camp @ Kabanje

12. Do you know the reason for the animal migrations occurring in your area?
13. If yes to question (13) please explain. Walking corridor – in search water + pasture.

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? Yes.
15. If yes to question 15, please list the impact(s).
Habitat fashmen → arising from tree cutting along the watershed area where the powerline is to be constructed
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure.
✓ Tree planting – erosion locals to improve habitats.
Sensitization on Riparian

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area?
18. If yes to question 18, please provide details of your proposal.
~~* involving all stakeholders in monitoring activities.~~
~~* height higher towers to include more vegetation.~~

Date: 06/11/2019 Signature:

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DATA COLLECTION TOOL - LARGE MAMMALS

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We thank you in anticipation.

Your Name: Mr. Sylvester Kangwa

You Organization: Department of Forestry.

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   Common duiker, Chisingo – (2005) ate one of them. } known very back
   Bushbucks, Hares, warthog,
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   Yes
3. How many large mammal species are present in the project area? Please provide a list of these.
   None seen those days save for Bush hares

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   Bushhare – 2007;
5. Which species were sighted? Bushare
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   Kapawa area with Kawena

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7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). ~~illegal harvests~~ agriculture activities + population increase

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? No — most likely Jackal.
9. If answer is yes to question 9, please indicate the species undergoing the migrations. Historical - 2008 — ex. from Lwaja's crossing to Chisomo, terrorising goats there!
10. How long does the migration last and during which season do they occur? —
11. Kindly specify the areas where these occur. —
12. Do you know the reason for the animal migrations occurring in your area? No
13. If yes to question (13) please explain.

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? No, maybe for birds/bats.
15. If yes to question 15, please list the impact(s). —
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure. —

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area?
18. If yes to question 18, please provide details of your proposal. Since the area is depleted, there is very little that can be done.

05/10/2019

Date:

Signature:

DATA COLLECTION TOOL - LARGE MAMMALS

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We thank you in anticipation.

Your Name: MWANSA KENNEDY

You Organization: DEPARTMENT OF NATIONAL PARKS & WILDLIFE

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   HIPPOES, CROCODILE, ELAND, MONKEYS, RED BUCK, COMMON DUCKER, JAKAL, BATS
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   THERE IS A REDUCTION BECAUSE OF THE AREA HAS BEEN ENCROACHED
3. How many large mammal species are present in the project area? Please provide a list of these.
   HIPPOES, CROCODILES AND MONKEYS

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   AUGUST, 2019 AND MULEMBO RIVER
5. Which species were sighted? CROCODILE, HIPPOES AND MONKEYS.
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   CHITAMBO — JUNE, 4TH 2019

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). ENCROACHMENTS AND DEFORESTATION INCLUDING FARMING.

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? YES
9. If answer is yes to question 9, please indicate the species undergoing the migrations. HIPPOES AND BATS
10. How long does the migration last and during which season do they occur? SIX (6) MONTHS, DURING RAIN SEASON
11. Kindly specify the areas where these occur. FOREST Nº 172 AND MULEMBO RIVER
12. Do you know the reason for the animal migrations occurring in your area? YES
13. If yes to question (13) please explain. GRAZING AND FRUITS

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? YES
15. If yes to question 15, please list the impact(s). POACHING INCREASED BECAUSE OF LACK OF MONITORING OF THE AREA
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure. THE MEASURE IS TO MONITOR THE ARE IF FUNDS ARE AVAILABLE.

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? YES
18. If yes to question 18, please provide details of your proposal. TO RESPOND WILDLIFE CRIME, SO THAT WE CAN PROTECT THE REMAINING SPECIES

05/11/19 ASH

Date: Signature:

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We thank you in anticipation.

Your Name: Alfred Mwimba

You Organization: DNPW

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.
   Buffalo, Eland, Common duicker, monkeys
2. Is there a difference in the number of large mammal species present today? Please explain your response.
   Yes very big. Poaching encroachment of %
3. How many large mammal species are present in the project area? Please provide a list of these.
   ~~###~~ Monkeys, Common duicker

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?
   Last Week
5. Which species were sighted? monkeys and duicker Common
6. Kindly provide other locations and dates of large mammal sightings in the project area.
   Last week

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). encroachment and poaching.

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations. Lions and is done in August
10. How long does the migration last and during which season do they occur? In August and it lasts for a month.
11. Kindly specify the areas where these occur. Kasanka NP from Mfuwe and Bangweulu Area.
12. Do you know the reason for the animal migrations occurring in your area? Season but for Charge
13. If yes to question (13) please explain. The animals move like this just to have a change of environment (area).

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? NO because the area has no animals now.
15. If yes to question 15, please list the impact(s). —
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure. —

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? The area has a lot of people
18. If yes to question 18, please provide details of your proposal. —

04. 11. 19

Date:

Signature:

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We thank you in anticipation.

Your Name: Paul Lee Chibuye

You Organization: Department of Forestry.

SECTION A – ACCOUNT OF LARGE MAMMALS

1. Historically, how many large mammal species were present in the project area? Please provide a list of these.

   Migratory & not stationary - move from protected areas for water & food.

   ① Common duiker
   ② lions
   ③ Elephants
   ④ Sable
   ⑤ Eland

2. Is there a difference in the number of large mammal species present today? Please explain your response.

   Yes - encroachment by humans & illegal harvests.

3. How many large mammal species are present in the project area? Please provide a list of these.

   Bats & birdlife

   ✓ rarely elephants
   ✓ rarely lions.

SECTION B – DISTRIBUTION OF LARGE MAMMALS

4. When and where was the last large mammal sighting (s) made in the project area?

5. Which species were sighted? rare

6. Kindly provide other locations and dates of large mammal sightings in the project area.

   Most of the times they are not encountered mainly snakes.

Kanona - largely encroached
- certain portions.

50-60%

7. Are there factors or issues influencing animal sightings in the study area? Please explain your answer (s). _____
   emmunal + illegal hunting
   farming
   + recently mining — Mangerse.

SECTION C – MIGRATION ROUTES

8. Do you have large mammal migrations taking place in your area? Yes
9. If answer is yes to question 9, please indicate the species undergoing the migrations. _____
   Dukers + wildebeest (antelopes)
10. How long does the migration last and during which season do they occur? _____
11. Kindly specify the areas where these occur. _____
    From Kasaches via Musola via Kamuna + Lake Lusaushi
12. Do you know the reason for the animal migrations occurring in your area? in search of food +
13. If yes to question (13) please explain. _____ many away from human impact.

SECTION D IMPACTS AND MITIGATIONS

14. Are you aware of any of the anticipated impacts on large mammals of the construction of power line in this area? Yes
15. If yes to question 15, please list the impact(s). _____
    Tracks for animals
    and shifts.
16. For the impact(s) listed in 16, kindly indicate your proposed mitigation measure. _____

SECTION E MANAGEMENT AND MITIGATION PLAN

17. Do you have any proposals that you feel should be integrated into the Biodiversity Management and Mitigation Plan to safe guard and conserve large mammals in the project area? Alternative land + realignment plan for habitats.
18. If yes to question 18, please provide details of your proposal. _____

Date:
05/Nov/2019.

Signature:
CHIBUYE P.L

08-11-2019

Historical

⇒ Entry or exit - market for large mamals

Encuter

⇒ Ivory/meat — North Park, South Park.
Lion — skin
Leopard — skin — Miyumbo NCA Isoka. 1/11/2019
Hippo — meat
* Buffalo tail — Miyumbo — November.

No big animals in Nakonde

- ✓ Common duiker & grysbok found in the open area of Nakonde. — Very scarce
- ✓ October 2019 last sighting.

* Elephant migrant from Tanzania via Nakonde
* Passing thru / early year rainy season Mukaliji area in Nakonde
* going to Nsumbu NP.

Impacts of Power line ⇒ No perceived impact as the animals are scarce
— Ensure a wildlife officer is attached to construction team as escort.

Monitoring Plan & Management

Involve us in the implementation & monitoring activities.

09/11/19 / Simusanga Mweemba

08-11-2019

Historical

⇒ Entry or exit - market for large mammals

Encounter

⇒ Ivory + meat — North Park, South Park.
lion — skin
leopard — skin — Miyumbo NCA Isoka. 1/11/2019
Hippo — meat
* Buffalo tail — Miyumbo — November.

No big animals in Nakonde

- ✓ Common duiker + grysbok - found in the open area of Nakonde. — Very scarce
- ✓ October 2019 last sighting.

* Elephant migrant from Tanzania via Nakonde
* Passing thru / only during rainy season in Nakonde Mukaliyi area
* going to Nsumbu NP.

Impacts of Power line ⇒ No perceived impact as the animals are scarce
— Ensure a wildlife officer is attached to construction team as escort.

Monitoring Plan + Management

Involve us in the implementation + monitoring activities.

08/11/19 / Simusanga Mwansa

APPENDIX

5-11 MAMMAL SPECIES LIST

MAMMAL SPECIES POTENTIALLY PRESENT WITHIN THE BESA

Family	Species	Common Name	R	Mi	G	S/D	Occurrence in study area	IUCN Status	Reference
Bovidae	*Aepyceros melampus*	Impala	x				H	LC	Ansell (1978); Kingdom (2013b)
Bovidae	*Connochaetes taurinus*	Common wildebeest	x	x	x	x	H	LC	Ansell (1978); Kingdom (2013b)
Bovidae	*Hippotragus equinus*	Roan Antelope	x	x	x	x	H	LC	Ansell (1978); Kingdom (2013b); GBIF (2024); Zulu, Mucleta & Mambwe, pers. Comm. (2019)
Bovidae	*Hippotragus niger*	Sable Antelope	x	x			H	LC	Ansell (1978); Kingdom (2013b); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Chisanga pers. Comm. (2019); Saili pers. Comm. (2019); GBIF (2024
Bovidae	*Kobus vardonii*	Puku	x	x	x	x	H	NT	Ansell (1978); Kingdom (2013b); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mwansa pers. Comm. (2019); Chisanga pers. Comm. (2019)
Bovidae	*Redunca arundinum*	Reedbuck	x	x	x	x	R	LC	Ansell (1978); Kingdom (2013b); GBIF (2024); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Chisanga pers. Comm. (2019)
Bovidae	*Synceros Caffer*	Buffalo	x	x	x	x	R	LC	Ansell (1978); World Bank (2009); Kandanga, Zulu & Maimde, pers. Comm. (2019); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Makombe pers. Comm. (2019); Chisanga pers. Comm. (2019)
Bovidae	*Sylvicapra grimmia*	Common duiker		x			R	LC	Ansell (1978); Kingdom (2013b); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Mwansa pers. Comm. (2019); Chisanga pers. Comm. (2019); Saili pers. Comm. (2019); Zgozi pers. Comm. (2019)
Bovidae	*Kobus ellipsiprymnus*	Waterbuck	x	x	x	x	H	LC	Ansell (1978); Kingdom (2013b); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Chisanga pers. Comm. (2019); Zgozi, pers. Comm. (2019)
Bovidae	*Oreotragus oreotragus*	Klipspringer		x			R	LC	Ansell (1978); Kingdom (2013b)
Bovidae	*Ourebia ourebi*	Oribi			x		H	LC	Ansell (1978); Kingdom (2013b)
Bovidae	*Raphicerus sharpei*	Grysbok		x			R	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Zgozi, pers. Comm. (2019)
Bovidae	*Tragelaphus oryx*	Eland	x	x	x		H	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mwansa pers. Comm. (2019); Makombe pers.Comm.(2019); Chisanga pers.Comm. (2019); Saili pers. Comm. (2019)
Bovidae	*Tragelaphus strepsiceros*	Greater Kudu		x	x		H	LC	Makombe pers. Comm, (2019); Chisanga pers. Comm. (2019)
Bovidae	*Tragelaphus scriptus*	Bushbuck	x				R	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Kangwa pers. Comm. (2019); Saili pers. Comm. (2019); GBIF (2024)
Bovidae	*Tragelaphus spekei*	Sitaunga	x		x	x	R	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Zgozi pers. Comm. (2019)
Bovidae	*Alcelaphus buselaphus*	Hartebeest	x	x			H	LC	Mwansa pers. Comm. (2019)
Canidae	*Canis adustus*	Side stripped Jackal	x	x	x	x	C*	LC	Zgozi, pers. Comm. (2019)
Cercopithecidae	*Papio cynocephalus*	Yellow baboon	x	x	x		C*	LC	Ansell (1978); Kingdom (2013b); Zgozi, pers. Comm. (2019); GBIF (2024)
Cercopithecidae	*Papio kindae*	Kinda Baboon		x	x	x	U	LC	GBIF (2024)
Cercopithecidae	*Chlorocebus cynosuros*	Malbrouck Monkey	x	x			U	LC	GBIF (2024)
Cercopithecidae	*Chlorocebus pygerythrus*	Vervet monkey	x	x			C*	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Zgozi, pers. Comm. (2019); GBIF (2024)
Elephantidae	*Loxodonta africana*	African Savanna Elephant	x	x		x	R	EN	Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Makombe pers. Comm, (2019); Chisanga pers. Comm. (2019); Zgozi, pers. Comm. (2019); Saili pers. Comm. (2019)
Equidae	*Equus quagga*	Plain Zebras	x	x	x		H	NT	Ansell (1978); Kingdom (2013b); GBIF (2024)
Felidae	*Panthera pardus*	Leopard	x	x	x	x	R	VU	Curry (2019); Zgozi, pers. Comm. (2019); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Zgozi, pers. Comm. (2019b);Saili pers. Comm. (2019); Simwanza pers. Comm. (2019)
Felidae	*Panthera leo*	Lion	x	x	x		R	VU	Kandanga, Zulu & Maimde, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Makombe pers. Comm, (2019); Chisanga pers. Comm. (2019); Zgozi, pers. Comm. (2019)
Galagidae	*Otolemur crassicaudatus*	Otolemur crassicaudatus	x	x			U	LC	GBIF (2024)
Hippopotamidae	*Hippopotamus amphibius*	Hippo	x		x	x	R	VU	Mwansa pers. Comm. (2019); Kandanga, Zulu & Maimde, pers. Comm. (2019); World Bank (2009); Zulu, Mucleta & Mambwe, pers. Comm. (2019); Mupeta, pers. Comm. (2019); Zgozi, pers. Comm. (2019); Chisanga pers. Comm. (2019); Makombe pers. Comm, (2019); Saili pers. Comm.(2019)
Hystricidae	*Hystrix africaeaustralis*	Cape Porcupine	x	x	x		U	LC	GBIF (2024)
Manidae	*Smutsia temminckii*	Temminck's Pangolin	x	x			U	VU	DNPW, pers.Comm. (2024)
Manidae	*Phataginus tricuspis*	White-bellied Pangolin	x	x			U	EN	DNPW, pers.Comm. (2024)
Mustelidae	*Aonyx capensis*	African Clawless Otter	x				U	NT	GBIF (2024)
Orycteropodidae	*Orycteropus afer*	Aardvark	x	x	x		U	LC	GBIF (2024)
Procaviidae	*Heterohyrax brucei*	Bush Hyrax		x			U	LC	GBIF (2024)
Sciuridae	*Heliosciurus gambianus*	Gambian Sun Squirrel	x	x			U	LC	GBIF (2024)
Suidae	*Potamochoerus larvatus*	Bush pig	x	x	x		C*	LC	Zulu, Mucleta & Mambwe, pers. Comm. (2019)
Thryonomyidae	*Thryonomys swinderianus*	Greater Cane Rat	x	x	x	x	U	LC	GBIF (2024)
Viverridae	*Civettictis civetta*	African civet	x	x	x			LC	Kingdom (2013a), GBIF (2024)

Habitat Association: R = Riparian; Mi = Miombo; G = grassland/wetland;S/D: Swamps and Dambos.

Occurrence in study area: H = Historical distribution and may no longer exist; R = Rarely sighted; C* = Commonly sighted, U=Unknown

IUCN Status:-LC = least concern; NT = Near threatened; VU = vulnerable; EN=Endangeredt.

APPENDIX

5-12 HERPETOFAUNA SPECIES LIST

HERPETOFAUNA SPECIES POTENTIALLY PRESENT IN THE BESA

Family	Species	IUCN Red List
Reptile		
Agamidae	*Acanthocercus branchi*	LC
Agamidae	*Agama kirkii*	LC
Atractaspididae	*Aparallactus capensis*	LC
Chamaeleonidae	*Chamaeleo dilepis*	LC
Colubridae	*Crotaphopeltis hotamboeia*	LC
Colubridae	*Philothamnus angolensis*	LC
Colubridae	*Telescopus semiannulatus*	LC
Colubridae	*Platysaurus intermedius*	LC
Gekkonidae	*Chondrodactylus laevigatus*	LC
Gekkonidae	*Chondrodactylus turneri*	LC
Gekkonidae	*Lygodactylus angularis*	LC
Gerrhosauridae	*Gerrhosaurus nigrolineatus*	LC
Psammophiidae	*Psammophis mossambicus*	LC
Psammophiidae	*Psammophylax tritaeniatus*	LC
Scincidae	*Mochlus sundevallii*	LC
Scincidae	*Panaspis wahlbergii*	LC
Scincidae	*Trachylepis wahlbergii*	NA
Scincidae	*Trachylepis margaritifera*	NA
Scincidae	*Trachylepis varia*	LC
Scincidae	*Trachylepis maculilabris*	LC
Pelomedusidae	*Pelusios sinuatus*	LC
Typhlopidae	*Afrotyphlops mucruso*	LC
Varanidae	*Varanus niloticus*	LC
Varanidae	*Varanus albigularis*	LC
Viperidae	*Causus defilippii*	LC
Viperidae	*Causus rhombeatus*	LC
Amphibian		
Arthroleptidae	*Leptopelis bocagii*	LC
Arthroleptidae	*Arthroleptis xenodactyloides*	LC
Arthroleptidae	*Arthroleptis xenochirus*	LC
Brevicipitidae	*Breviceps mossambicus*	LC
Bufonidae	*Mertensophryne taitana*	LC
Bufonidae	*Sclerophrys gutturalis*	LC
Bufonidae	*Sclerophrys pusilla*	LC
Bufonidae	*Sclerophrys maculata*	LC
Hemisotidae	*Hemisus marmoratus*	LC
Hyperoliidae	*Hyperolius nasicus*	LC
Hyperoliidae	*Hyperolius nasutus*	LC
Hyperoliidae	*Kassina senegalensis*	LC
Phrynobatrachidae	*Phrynobatrachus natalensis*	LC
Pipidae	*Xenopus laevis*	LC
Pipidae	*Xenopus poweri*	LC
Ptychadenidae	*Hildebrandtia ornata*	LC
Ptychadenidae	*Ptychadena mutinondoensis*	NA
Ptychadenidae	*Ptychadena oxyrhynchus*	LC
Pyxicephalidae	*Amietia moyerorum*	LC
Ranidae	*Amnirana darlingi*	LC

APPENDIX

5-13 FISH SPECIES LIST

FISH SPECIES POTENTIALLY PRESENT IN THE BESA

Family	Species	IUCN Red-List
Alestidae	*Alestes macrophthalmus*	LC
Alestidae	*Bryconaethiops boulengeri*	LC
Alestidae	*Hydrocynus vittatus*	LC
Alestidae	*Micralestes humilis*	LC
Alestidae	*Brycinus peringueyi*	LC
Amphiliidae	*Amphilius cryptobullatus*	LC
Amphiliidae	*Amphilius jacksonii*	LC
Amphiliidae	*Congoglanis sagitta*	NA
Amphiliidae	*Amphilius frieli*	NA
Amphiliidae	*Congoglanis alula*	LC
Anabantidae	*Ctenopoma multispine*	LC
Cichlidae	*Pharyngochromis acuticeps*	LC
Cichlidae	*Pseudocrenilabrus philander*	LC
Cichlidae	*Coptodon rendalli*	LC
Cichlidae	*Tilapia sparrmanii*	LC
Cichlidae	*Tylochromis bangwelensis*	LC
Clariidae	*Clarias gariepinus*	LC
Clariidae	*Clarias theodorae*	LC
Clariidae	*Heterobranchus longifilis*	LC
Clariidae	*Clarias stappersii*	LC
Claroteidae	*Auchenoglanis occidentalis*	LC
Claroteidae	*Chrysichthys mabusi*	LC
Cyprinidae	*Enteromius bifrenatus*	NA
Cyprinidae	*Enteromius eutaenia*	NA
Cyprinidae	*Enteromius fasciolatus*	NA
Cyprinidae	*Enteromius lineomaculatus*	NA
Cyprinidae	*Enteromius lornae*	NA
Cyprinidae	*Enteromius miolepis*	NA
Cyprinidae	*Enteromius pellegrini*	NA
Cyprinidae	*Enteromius radiatus*	NA
Cyprinidae	*Enteromius trimaculatus*	NA
Cyprinidae	*Labeo cylindricus*	LC
Cyprinidae	*Labeobarbus trachypterus*	LC
Cyprinidae	*Engraulicypris moeruensis*	LC
Distichodontidae	*Distichodus maculatus*	LC
Distichodontidae	*Nannocharax luapulae*	LC
Distichodontidae	*Nannocharax dageti*	NA
Distichodontidae	*Nannocharax lineostriatus*	NA
Mastacembelidae	*Mastacembelus congicus*	LC
Mochokidae	*Euchilichthys guentheri*	LC
Mochokidae	*Synodontis katangae*	LC
Mochokidae	*Synodontis nigromaculatus*	LC
Mochokidae	*Chiloglanis elisabethianus*	VU
Mochokidae	*Euchilichthys royauxi*	LC
Mormyridae	*Campylomormyrus rhynchophorus*	LC
Mormyridae	*Cyphomyrus discorhynchus*	LC
Mormyridae	*Mormyrops anguilloides*	LC
Mormyridae	*Petrocephalus frieli*	NA
Mormyridae	*Petrocephalus squalostoma*	DD
Mormyridae	*Campylomormyrus luapulaensis*	DD
Mormyridae	*Campylomormyrus elephas*	LC
Mormyridae	*Campylomormyrus mirus*	LC
Schilbeidae	*Schilbe intermedius*	LC

APPENDIX

5-14 CRITICAL HABITAT ASSESSMENT

CRITICAL HABITAT ASSESSEMENT

Critical Habitat identification is required to manage risks and avoid, mitigate, and offset impacts to areas with high biodiversity value. Critical habitats are a subset of modified or natural habitats. Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems and ecological processes. World Bank (WB) Environmental and Social Framework, IFC Performance Standards (PS) on Environmental and Social Sustainability and African Development Bank Safeguard Policies all have similar definitions of critical habitat, which rely on the following criteria:

Criterion 1: habitat of significant importance to Critically Endangered (CR) and/or Endangered (EN) species;

Criterion 2: habitat of significant importance to endemic and/or restricted-range species;

Criterion 3: habitat supporting globally significant concentrations of migratory species and/or congregatory species;

Criterion 4: highly threatened and/or unique ecosystems; and/or;

Criterion 5: ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described in above criteria.

In areas of critical habitat, it must notably be demonstrated that a Project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values, and the Project's mitigation strategy must be designed to achieve net gains of those biodiversity values.

The World Bank ESS6 and its associated Guidance Note provide little guidance on the approach to determine critical habitat, nor do they define what "habitat of significant importance" is. The IFC's Guidance Note 6 (IFC, 2019) provides clear guidance on critical habitat determination and is considered good international industry practice (GIIP) for defining critical habitat. Accordingly, the Critical Habitat Assessment (CHA) was completed following IFC PS6 standard of 2012 (IFC PS6, 2012) and guidance notes of 2019 (IFC PS6, 2019). s.

METHODOLOGY

First of all, the critical habitat assessment relies on a thorough description of species and habitats present in the project area. As part of the ESIA process, field surveys, literature review, data extraction from relevant databases, as well as consultation with key stakeholders have led to the description of biodiversity values and ecosystems that could potentially be affected by the project. The biological baseline is presented in Section 5.3 of the ESIA, whereas the detailed methodology for biological baseline characterization is described in Appendix 5-2 of the ESIA.

Chapter 7 of the ESIA provides details of the stakeholder engagement approach and activities and lists stakeholders that have been consulted. Most relevant consultations to support this critical habitat assessment include consultation meetings with Department of National Parks and Wildlife (DNPW) to confirm park boundaries, gather information on wildlife and discuss concerns regarding recent alignment changes (2019), consultation meetings with the National and district level Forestry Departments to confirm forest reserve boundaries, collect information on habitats within these areas and discuss concerns and requirements regarding recent alignment changes (2019), consultation of eleven key informants in the areas along the powerline on large mammals' presence (2019), consultation of meeting with the Department of National Parks and Wildlife at national level on project update (2024), and consultation with the district level forestry departments on project update (2024).

The determination of critical habitats includes the following steps:

1. A preliminary identification of the candidate species and ecosystems that could meet critical habitat criteria 1 to 4. This list is derived directly from the species and ecosystems identified in the biological baseline (Section 5.3 of the ESIA), which includes data retrieved through field investigations, stakeholder consultations, supplemented by those identified from the literature and databases, that are potentially present in the area. Candidate species and ecosystems include:
    a. Criterion 1 – Critically Endangered (CR) and Endangered (EN) species;
    b. Criterion 2 – Endemic and restricted range species;
    c. Criterion 3 – Migratory and congregatory species.
2. The identification of Ecologically Appropriate Areas of Analysis (EAAAs) for these species.
3. Screening of candidate species against thresholds:
    a. A quantitative and/or semi-quantitative screening of candidate species against thresholds identified for critical habitat criteria 1 to 3 in IFC PS6 GN70 to GN78 (IFC, 2019);
    b. A qualitative assessment of critical habitat criteria 4 and 5 (Threatened ecosystems and ecological functions vital to biodiversity values) that considers the ecological context of the region in terms of types of species assemblages, type of ecosystems present, and biophysical features.

These steps are further described below.

To finalize critical habitat identification, an ecosystem approach to assigning critical habitat within the Project Direct Impact Area (DIA) and Biodiversity Indirect Impact Area (BIIA) for those species or ecosystems that trigger critical habitat in the relevant EAAA is completed, trying to identify what specific habitats and sites constitute critical habitat.

1- IDENTIFICATION OF CANDIDATE SPECIES AND ECOSYSTEMS UNDER CRITERIA 1 TO 3

All species present or potentially present in the BIIA, including species observed during surveys and species in the GBIF database, were screened against criteria 1 to 3 using the IUCN Red-List of threatened species for criteria 1, the living national treasures checklist (2023) and checklist of Zambia vascular plants (Phiri, 2005) for criteria 2, and the birdlife International Data Zone and IUCN Red-List for criteria 3.

Candidate biodiversity values screened for critical habitat included two Critically Endangered, seven Endangered species, three endemic/restricted range species, 121 migratory and/or congregatory species, noting that some species are screened under multiple criteria.

2- ECOLOGICALLY APPROPRIATE AREA OF ANALYSIS

Paragraph GN59 of the Guidance Note 6 (IFC, 2019) provides guidance on the definition of EAAAs.

The Project area is home to a variety of large, wide-ranging species that depend on ecological connectivity within the landscape. Since the presence and distribution of species and ecosystems in the Project area largely rely on the presence of protected areas, with many species' known occurrences being restricted to these protected areas, it was judged that their presence dictates the presence of species. More so, these areas' limits often represent other biological or physical landscape features (e.g., watersheds, elevation, habitat types).

Hence, it was decided to use a 20 km buffer area on either side of the line route and around substations, as well as all protected areas or internationally recognized areas that are completely or partially contained within this buffer area. This EAAA also corresponds to the Biodiversity Indirect Impact Area (BIIA) used in the ESIA. The total surface area of the EAAA is 28,676.2 km^2.

3- SCREENING OF CANDIDATE SPECIES AND ECOSYSTEMS

For criteria 1 to 3, a hierarchy of information was applied to screen candidate species against established thresholds for critical habitat determination and determine if habitats within the EAAA are of significant importance for these species.

As mentioned above, the World Bank ESS6 and its associated Guidance Note does not provide thresholds to determine critical habitat, nor do they define what "habitat of significant importance" is. The IFC's Guidance Note 6 (IFC, 2019) provides clear guidance on critical habitat determination and is considered good international industry practice (GIIP) for defining critical habitat. Accordingly, the Critical Habitat Assessment (CHA) was completed in compliance with World Bank ESS6 CH criteria but following IFC PS6 standard of 2012 (IFC PS6, 2012) and guidance notes of 2019 (IFC PS6, 2019) for the following thresholds:

- Criterion 1: Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species).
- Criterion 2: Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.
- Criterion 3 (a): Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle. (b) Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress

To determine if species meet these thresholds, the following indicators are used, in order of preference, as it is almost impossible to obtain population/reproductive units estimates, especially for a linear project:

- Population estimates. The ratio of the number of mature individuals in the applicable EAAA to the global number of known mature individuals.
- Global area of occupancy (AOO). The ratio of the number of occupied sites in the EAAA to the number of globally known sites.
- Global extent of occurrence (EOO). The ratio of the EAAA's area to the species' global distribution range (i.e., the EOO).
- Expert opinion. As applicable, expert opinion is based on information from the literature, observations from field surveys, and consultation with external experts.

In most cases, as global population estimates and population estimates within the EAAA are unknown, some key assumptions are used, considering the difficulty of estimating whether the population base meets the threshold requirements of criteria 1, 2 or 3:

- The Extent of Occurrence (EOO) of the species and the portion of this EOO contained within the EAAA are evaluated based on mapping processes. As population bases are generally poorly detailed in available literature, by application of the precautionary principle (Gullison et al. 2015) and using GN65 of the IFC PS6 (2019), for criteria 1 of the IFC PS6 for critical habitat, it is assumed that if the EOO within the EAAA represents 0.5%/1%/10% of the global EOO for the species, the criteria of holding at least 0.5%/1%/10% of the global population is met.

Because the Project EAAA does not contain ecosystems that have been assessed by the IUCN as globally threatened, the screening of ecosystems focused on determining whether ecosystems met criterion 4b: other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.

Otherwise, habitats or ecosystems were considered critical habitats if they supported critical habitat-triggering species.

For criterion 5, the habitats and ecosystems of the Project EAAA were qualitatively evaluated by reviewing the site's physical attributes) and biological assemblages to determine if they maintain ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described in above criteria:

CRITICAL HABITAT ASSESSMENT CRITERIA UNDER 1 AND 2

Of all the species present or potentially present in the BIIA, two are Critically Endangered and seven are Endangered, according to the IUCN Red List. Additionally, three species can be considered to be of restricted range. These 12 species were assessed to evaluate if they meet critical habitat triggers. Results show that four species trigger critical habitats (Table 2). Habitats supporting species triggering critical habitat criteria in the EAAA are Miombo woodland within Mutinondo Wilderness Area and Bwingi Fumu Forest Reserve, natural undisturbed wet grasslands and dambos, rock outcrop in the Kasama Forest reserve for *Euphorbia perplexa var kasamasa*, thin soils and rock crevices on Muchincha Escarpment in Serenje.

Table 1 Critical Habitat Screening for Criteria 1 and 2

Taxonomic Group	Scientific Name	Common Name	Criterion 1 – Threatened Species [(a)]	Criterion 2 – Endemic/ Restricted Range Species	Migratory or Congregatory Species	EOO (km^2)	Number of mature individuals	Occurrence confirmed in GBIF/Field observation (OBS)	EAAA (km^2)	Ratio (%)	Critical Habitat Assessment	Mapped Critical Habitat in the Project BIIA
Flora	*Encephalartos schmitzii*		VU	Restricted Range	No	11553	Unknown	GBIF	28676,18	248%	*Encephalartos schmitzii* occurs in the Democratic Republic of the Congo on the extreme south of the Kundelungu plateau in the Haut-Katanga province and in Zambia along the Muchinga Escarpment in the Muchinga province. It occurs at elevations from 1,000 to 1,400 m asl. In the BIIA, it would be occurring as a disjunct population in wet Miombo woodlands of Bwingi Mfumu Forest Reserve, which is about 20 km to the east of the proposed line (Lishomwa Mulongwe, Principal Research Officer, Forestry Department, personal communication). It was not observed during the field surveys, but GBIF has a record of the species from the Mutinondo Wilderness area. It grows in sandy quartzitic soils in Miombo woodlands (Bösenberg 2010). The species is threatened due to over-collecting for ornamental purposes and as a result of habitat loss caused by bush clearing for agricultural purposes. Too frequent fires may also have driven this cycad's pollinator to extinction (Bösenberg, 2022). Since the species has such a small range and is known to be present in the EAAA at two sites (Mutinondo Wilderness area and Bwingi Fumu Forest reserve), it is assumed that these sites are of significant importance to the species. Furthermore, the EAAA covers a significant portion (>0,5%) of the species' EOO indicating it potentially supports a large part of the species' global population, thus the species is thought to trigger critical habitat. Within the EAAA, it is judged Miombo woodland within Mutinondo Wilderness Area and Bwingi Fumu Forest Reserve are critical habitat for the species and that the species' presence is unlikely in the DIA, since it was not encountered during surveys and is found west of the Muchinga escarpment.	Miombo woodland within Mutinondo Wilderness Area and Bwingi Fumu Forest Reserve. Unlikely presence in the DIA, which is west of the escarpment.
Flora	*Disa aequiloba*		EN	-	No	618 565	Unknown	GBIF	28676,18	4,64%	This species is known only in 10 locations, which are far apart from each other and in Angola, DRC, Tanzania, and Zambia (IUCN SSC East African Plants Red List Authority, 2019). The species was not observed during surveys but is known to be present in the region. In the BIIA, this species has a single occurrence from GBIF, east of the line, near the Mutinundo Wilderness Area. The species grows in different wetlands habitats such as swamp areas, dambo, wet grassland, and wet meadows. It is mainly threatened by the expansion of tea plantations and potato farming. Tubers of this species are used in the preparation of a local Zambian dish called Chikanda, which has wild populations threatened by overharvesting. The EAAA covers almost 5% of the species' global EOO, indicating it is likely to support a significant portion of the species population. The species thus triggers critical habitat.	Natural undisturbed wet grasslands and dambos within the BIIA can potentially host the species. Additional specific surveys in the ROW and temporary construction areas need to be carried out to determine the presence of critical habitat for this species.
Flora	*Euphorbia perplexa var kasamasa*		NA	Restricted Range	No	Unknown	Unknown	Field	28676,18	NA	The *Euphorbia perplexa* var. *Kasamana* is known only from Zambia, north of Kasama (Phiri, 2015). This small shrub characterised by spines of 10 mm long was observed in the Kasama Forest Reserve on the rocky outcrops of the Mwela Rock Art Site. It was collected during the walkover surveys in September 2019. Although its precise extent of occurrence is unknown, it was recorded only from Kasama ((Dr. Mulongwe, Principal Research Officer, Forestry Department, personal communication).) and it is assumed that the species must have a restricted range (less than 50,000 km^2) that is found mostly within the EAAA. Hence, it can be assumed that the EAAA contains more than 0.5% of the species population and triggers critical habitat. Critical habitat for the species within the EAAA is rock outcrops in the Kasama area.	Rock outcrop in the Kasama area.
Flora	*Gladiolus serenjensis*		NA	Restricted-range	No	Unknown	Unknown	GBIF		NA	This herb grown on thin soils and rock crevices in the Muchinga Escarpment in Serenje District (Phiri, 2005). The species was not observed during surveys and is thought to be restricted to hilly areas on thin soil in Serenje (Dr. Mulongwe, Principal Research Officer, Forestry Department, personal communication). In the BIIA, this species has a single occurrence from GBIF, east of Pensulo and of the Kanona forest reserve, near the Kundalila Falls. Although its precise extent of occurrence is unknown, it is assumed that the species must have a restricted range (less than 50,000 km^2) that is found partly in the EAAA. Since the species has such a small range and is known to be present in the EAAA (Muchincha Escarpment in Serenje) is assumed that this area is of significant importance to the species and potentially supports a large part of the species' global population, thus the species is thought to trigger critical habitat. Within the EAAA, it is judged thin soils and rock crevices on Muchincha Escarpment in Serenje is critical habitat for the species and that the species' presence is unlikely in the DIA, since it was not encountered during surveys and is found west of the Muchinga escarpment.	Thin soils and rock crevices on Muchincha Escarpment in Serenje. Unlikely presence in the DIA, which is west of the escarpment.

Taxonomic Group	Scientific Name	Common Name	Criterion 1 – Threatened Species [a]	Criterion 2 – Endemic/ Restricted Range Species	Migratory or Congregatory Species	EOO (km^2)	Number of mature individuals	Occurrence confirmed in GBIF/Field observation (OBS)	EAAA (km^2)	Ratio (%)	Critical Habitat Assessment	Mapped Critical Habitat in the Project BIIA
Avifauna	*Terathopius ecaudatus*	Bateleur	EN	-	Partial/Possible Migrant	23500000	Unknown	Field & GBIF	28676.18	0,12%	The bateleur inhabits open country, including grasslands, savanna and subdesert thornbush. In Zambia, it is considered to avoid dense wooded areas and is now mostly found in National parks and low populated areas (Solomon et al., 2022). It is generally considered resident, but some adults, as well as immatures, are nomadic. It takes both live and dead food, mostly mammals and birds but also some reptiles, carrion, insects and occasionally birds' eggs and crabs, foraging over a huge range (55-200 km2). The nest is built in the canopy of a large tree, and breeding in December-August in southern Africa (BirdLife International, 2020a). Within the BIIA, three occurrences of the species were recorded during field surveys completed in 2019: in the Kanona Forest Reserve and at two points East of Nakonde. The species also has an occurrence in GBIF (2024) in the Mutinnodo Wilderness Area. This shows that the species could be potentially present in suitable habitats throughout the BIIA. The population is suspected to number in the tens of thousands (Ferguson-Lees and Christie 2001), but no precise estimates are available. Based on the wide range of the species it is considered highly unlikely that the study area is of global importance for the survival of this species (only 0,12% of the global EOO for the species is within the EAAA) and thus does not meet the threshold for criteria 1.	NA
Avifauna	*Aquila nipalensis*	Steppe Eagle	EN	-	Palearctic Migrant	12600000	50,000-75,000	Field & GBIF	28676.18	0,21%	Potentially present throughout Zambia, this species does not breed in this country and breeds instead in different parts of Russia. The steppe eagle inhabits areas of steppe and semi-desert. In southern Africa, the birds are only wintering and feed mainly on termites and Red-billed Quelea (Birdlife International, 2021a). In Zambia, the steppe eagle occurs in woodland habitat between October and April in scarce numbers, since a large majority of population winters further north in East Africa (Solomon et al., 2022). Within the BIIA, the species was recorded during field surveys completed in 2019 at a site near Kalonje and another near Chikanda, between Serenje and Mpika. The species also has an occurrence in GBIF, 2024, southwest of the Kanona Forest Reserve. The number of mature individuals globally is estimated at 50,000-75,000 and the exact population in Zambia is uncertain due to identification difficulties (Solomon et al., 2022). Since the species wintering ground is very large, it covers southeast Africa and southern Asia, and since the majority winter in East Africa (Solomon et al., 2022), it is judged unlikely that a large part of the population finds itself in the EAAA. Based on the single observation and this wide range (0,21% of the EOO for the species globally is within the EAAA) of the species, it is considered highly unlikely that the study area is of global importance for the survival of this species and thus does not meet the threshold for criteria 1.	NA
Avifauna	*Torgos tracheliotus*	Lappet-faced Vulture	EN			*34200000*	6,500	GBIF	28676.18	0,08%	This species is known to breed in Zambia and neighboring countries and could be present in the Project area. It prefers dry savanna, arid plains, deserts as well as open mountain slopes. It is rarely seen foraging in dense woodlands nor disturbed areas but prefer the open country with some dispersed trees and little or no grass (Shimelis et al., 2005). This species breeds with a solitary nest often built in Acacia, Balanites or Terminalia. Studies completed in Namibia suggest that the species does not usually return to its nest in subsequent years (BirdLife International, 2021b). In Zambia, it breeds commonly in areas with large healthy mammal populations such as the Luangwa National Park and the Bangweulu wetland complex (Bird of Zambia, 2019). It is found in smaller numbers in other areas where it is doubtlessly in decline (Bird of Zambia, 2019). The lappet-faced vulture home range can exceed up to 15km^2 (Shimelis et al., 2005). Within the BIIA, the species has a single occurrence in the Mutinundo Wilderness Area (GBIF,2019). The total population is estimated to be at least 9,200 individuals, of which c.6530 are mature individuals. Considering the single observation of this species during the surveys and its far-reaching distribution (0,08%% of the global EOO for the species is within the EOO), the study area is not considered to be of significant importance this species and thus the species does not meet the threshold for criteria 1. Furthermore, as this species seems to mostly inhabits certain areas such as national parks outside the BIIA and often farther than the usual home range for this species, it is unlikely that the BIAA contained critical habitats for this species	*NA*

Taxonomic Group	Scientific Name	Common Name	Criterion 1 – Threatened Species [(a)]	Criterion 2 – Endemic/ Restricted Range Species	Migratory or Congregatory Species	EOO (km^2)	Number of mature individuals	Occurrence confirmed in GBIF/Field observation (OBS)	EAAA (km^2)	Ratio (%)	Critical Habitat Assessment	Mapped Critical Habitat in the Project BIIA
Avifauna	*Polemaetus bellicosus*	Martial Eagle	EN	-	-	26000000		SABAP & GBIF	28676.18	0,11%	The species is usually found in open woodland, wooded savanna, bushy grassland, thornbush. Well-preserved woody and shrubby savannas throughout Zambia can potentially support the species (BirdLife International, 2020b). The martial eagle is known to be territorial and to have a large home range (ca 108 km2) which limits the carrying capacities of even conservation areas (van Eeden et al., 2017). Indeed, it is generally scarce to uncommon or rare (BirdLife International, 2020b). The marial eagle was not observed during field surveys. Within the BIIA, this species has a single occurrence in the Mutinundo Wilderness *area* (GBIF, 2022). *Polemaetus bellicosus* has an extensive range across much of sub-Saharan Africa. The likelihood of the EAAA carrying a significant portion of the global population is low, as the EAAA covers only 0,11% of the species' EOO. Therefore, it is judged the species does not qualify as Critical Habitat. Moreover, large eagles and vultures, notably the Martial Eagle, have been extirpated over huge areas of their former range and now survive almost only in the national parks, hence are less likely to be directly affected by the Project (Thiollay, 2006).	NA
Avifauna	*Trigonoceps occipitalis*	White-headed Vulture	CR	-	-	21100000	2,500-9,999	SABAP & GBIF	28676.18	0,14%	Potentially present throughout Zambia, the white-headed vulture has been extirpated over huge areas of their former range. It prefers mixed, dry woodland at low altitudes, avoiding semi-arid thornbelt areas. It generally avoids human habitation. The species is thought to be a long-lived resident that maintains a territory. It may generally fly lower than other vultures (BirdLife International, 2021c). Within the BIIA, this species has a single occurrence in the Mutinondo Wilderness Area (GBIF, 2018) and it was not observed during surveys. Considering the lack of observation during surveys and the species' far-reaching distribution (0,14%% of the global EOO for the species is within the EOO), the study area is not considered to be of significant importance this species and thus the species does not meet the threshold for criteria 1. Furthermore, large eagles and vultures have been extirpated over huge areas of their former range and now survive almost only in the national parks. Indeed, there are no records of this species breeding outside protected areas (Murn et al., 2016). The White-headed vulture has always been the rarest vulture outside protected areas, where it may be virtually extinct hence, it is less likely to be directly affected by the Project (Thiollay, 2006)	NA
Avifauna	*Gyps africanus*	White-backed Vulture	CR	-	-	23400000	Unknown	GBIF	28676.18	0,12%	This white- backed vulture is a lowland species of open wooded savanna, particularly areas of Acacia. It is potentially present in Zambia, which is crossed by the Project. This species is Africa's most widespread and common vulture, which is now undergoing rapid decline (BirdLife International, 2021d). Open wooded savannas and woodland throughout Zambia can potentially support the species. The white-backed vulture was not observed during field surveys. Within the BIIA, this species has a single occurrence East of the Lavushi Manda National Park (GBIF, 2021). Again, large eagles and vultures have been extirpated over huge areas of their former range and now survive almost only in national parks. Notably, the White-backed has undergone a severe decline outside of national parks; hence, the Project is less likely to directly affect its habitat (Thiollay, 2006). Based on the lack of sightings of this species during surveys, its wide-ranging distribution (of the species the EAAA only represents 0,12% of the global EOO), it is considered highly unlikely that the study area is of global importance for the survival of this species and thus does not meet the threshold for criteria 1.	NA
Mammals	*Phataginus tricuspis*	White-bellied Pangolin	EN			Unknown	Unknown	Pers. Comm.	28676.19	NA	This is the most frequently encountered of the African forest pangolins, occurring in moderate densities in suitable habitats. In northwestern and central Zambia and southern DRC, this species occurs in dense Miombo (Brachystegia-Julbernardia) woodland, as well as in forest fragments and riparian forests (Pietersen et *al.*, 2019). Considering the species is widely distributed in the West and Central Africa and occurrences in the BIIA are sparse and concentrated along Zambia's border with the Democratic Republic of Congo; it is unlikely the EAAA contains a significant proportion of the species' population and is of significant importance to the global population.	NA

Taxonomic Group	Scientific Name	Common Name	Criterion 1 – Threatened Species [a]	Criterion 2 – Endemic/ Restricted Range Species	Migratory or Congregatory Species	EOO (km^2)	Number of mature individuals	Occurrence confirmed in GBIF/Field observation (OBS)	EAAA (km^2)	Ratio (%)	Critical Habitat Assessment	Mapped Critical Habitat in the Project BIIA
Mammals	*Loxodonta africana*	African Savanna Elephant	EN	-	Full Migrant	Unknown	Total estimated individuals of Savannah Elephants around 315 000 (Gobush et *al., 2022;* Global Conservation, 2024)	Pers. Comm.	28676.18	0,03%	Consultations confirmed that elephants might use the northern section of the study area (Mungwi, via Senga area), as well as the area from Kanona FR to Kasanka NP, during migration. However, elephants would sporadically be present and in very small numbers. The elephant population in the LMNP was estimated at 15 individuals (Elephant Database, 2023), although surveys date back to 1991 and no recent information is available. In the same year, the population in Kasanka National Park was 76 individuals. The estimated number of elephants in areas surveyed from 20026-2016 in Zambia is 21,967 according to African Elephant Status Report (Touless et al., 2016). This same report shows that the LMNP is not considered within the known range for elephants within Zambia. Considering this, even if the elephant population within the EAAA would reach 100 elephants, which is unlikely, it would not represent a globally important proportion of the global population (100 individuals represent about 0.03% of the global population. Hence, the EAAA does not contain any critical habitat for this species.	NA

CRITICAL HABITAT ASSESSMENT CRITERION 3

Several migratory bird species were recorded during baseline surveys or were recorded in databases (GBIF or SAPAB2) (120 species). However, the vast majority of these species are classified as Least Concern on the IUCN Red List, and have large distribution range and population size, and were therefore considered unlikely to trigger Critical Habitat based on Criterion 3.

However, near threatened or threatened migratory species according to the IUCN were screened to determine if the EAAA contained irreplaceable and/or vulnerable habitats used either periodically or consistently. Migratory birds were identified using information from BirdLife International (2023) and any other species were identified using information from IUCN listings (IUCN, 2023). Out of all migratory birds, only one is near threatened, and was not assessed based on critical habitat criteria 1 and 2, above. One migratory bat species was also assessed.

None of these near threatened or threatened species are likely to be present in numbers that represent greater or equal to one percent of the global population as detailed in table 3.

It should be noted that no important bird congregation were identified during surveys. Waterbodies and wetlands where birds often concentrate showed a relatively limited species diversity and density. The significant levels of disturbance emanating from the nearby roads, railways, and villages have likely displaced many species that would ordinarily inhabit in these important habitat features.

Furthermore, no habitat that meets BirdLife International's Criterion A4 for congregations and/or Ramsar Criteria 5 or 6 for Identifying Wetlands of International Importance are present within the EAAA. Therefore, the EAAA does not meet Criterion 3 with respect to migratory/congregatory species.

Table 2 Critical Habitat Screening for Criterion 3

Taxonomic Group	Scientific Name	Common Name	IUCN Status	Criterion 3 – Migratory or Congregatory Species	EOO (km^2)	Number of mature individuals	Occurrence confirmed in GBIF/Field observation (OBS)	EAAA (km^2)	Ratio (%)	Critical Habitat Assessment	Mapped Critical Habitat in the Project BIIA
Avifauna	*Circus macrourus*	Pallid Harrier	NT	Palearctic Migrant	10900000	18,000-30,000	SABAP & GBIF	28676.18	0,26%	This species breeds primarily in Asiatic Russia and winters in the Afrotropics. Mosaics of forest/ shrubland and grassland and, to a lesser extent, agricultural land, are used in winter (BirdLife International. 2021e). Within the BIIA, this species has a single occurrence in the Mutinundo Wilderness area. The global population is estimated at 9,000-15,000 pairs, equating to 18,000-30,000 mature individuals. The species is a paleartic migrant occurring mainly between October and late February. In Zambia, it is more common on the Nyika Plateau and Kafue Flats. Overall in small number (Solomon et al., 2022). Considering the lack of observation during surveys, the species' far-reaching distribution (the EAAA covers less than 0.26% of the species' EOO), and the fact that the species is more common in other parts of Zambia, outside the EAAA, it is not anticipated the EAAA is of significant importance to the global population.	NA
Chiroptera	*Eidolon Helvum*	African Straw-coloured Fruit Bat	NT	Migrant and Congregatory	NA	NA	Litt.	28676.18	NA	"The African straw-coloured fruit bat is the second-largest fruit bat of Africa and even though its habitat is in equatorial Africa, this species migrate from sub-Saharan Africa to South Africa, which includes Zambia. African Straw-coloured Fruit Bats roost in large numbers (5-10 million) in Kasanka National Park, approximately 50 km from the transmission line, outside the EAAA. These are known to migrate seasonally from there to the Democratic Republic of Congo as well as to Tanzania and Malawi. This is known as one of the largest wildlife migrations in Africa (Cooper-Bohannon et al., 2020). There are two other known seasonal roosts of the African Straw-coloured Fruit Bat that are located within the EAAA. These are in Kasama at Thorn Tree Guest House and at Shiwa Ng'andu near Lake Ishiba N'gandu (Taylor-Boyd pers. comm., 2019). These are much smaller and are unlikely to represent more than 1% of the global population. The species can cover great distances for feeding and is known to feed in Miombo woodlands within parts of the study area, on fruit from a variety of fruit trees. Again, it is unlikely that individuals that will disperse to feed in the EAAA represent more than 1% of the global population. Hence, the EAAA does not contain any critical habitat for this species.	NA

CRITICAL HABITAT ASSESSMENT UNDER CRITERION 4

No ecosystem identified in the Global Project EAAAs is listed as Endangered or Critically Endangered by the IUCN. Additionally, there is no other assessments in the area using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs).

The main ecosystem in the EAAA is miombo woodland and dambos/wet grasslands.

Miombo woodland in the Project area is part of the Central Zambezian Wet Miombo Woodlands. The ecoregion covers about 70 percent of central and northern Zambia, the southeastern third of DRC, western Malawi, much of western Tanzania, and parts of Burundi and northeastern Angola. Valleys of major rivers such as the Limpopo, Zambezi, and Shire, as well as the upper Congo River drainage dissects the plateau. This ecoregion is a part of the Zambezian regional center of endemism and has the highest floral richness of the African miombo ecoregions, with the peak of miombo plant species richness in Zambia. Although very rich, miombo woodland is not identified as a regional or national conservation priority. There is insufficient evidence to support the identification of critical habitat under criterion 4b.

Dambos are embedded predominantly within miombo and mopane woodlands and include grassland in the Bangwuelu/Luapala/Chambezi system in Zambia. The vegetation is characterized mostly by a mosaic of edaphic grassland and semi-aquatic vegetation. Dambos are not identified as a regional or national conservation priority. There is insufficient evidence to support the identification of critical habitat under criterion 4b.

CRITICAL HABITAT ASSESSMENT CRITERION 5

The WB's ESS6 Criterion 5 relates to ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described in criteria 1 to 4.

The proposed powerline for the ZTIP runs approximately 1.5 km from the eastern tip of Lavushi Manda National Park, an Important Bird Area (IBA). The park's strategic location, surrounded by other IBAs and protected areas, along with its diverse habitats, makes it a key site for biological connectivity. As described in section 5.3.1.1 of the ESIA, the park was established primarily to protect a large, regionally important watershed and to serve as a preserved corridor between South Luangwa National Park, North Luangwa National Park, and the Bangweulu swamps.

In fact, two large distinct ecosystems are found around the Project area: the Bangweulu swamps ecosystem and the Luangwa valley ecosystem. Both ecosystems see large wildlife migrations within their respective boundaries. There are also records of animal migration between those two large ecosystems, mainly coming from the Luangwa Valley to Bangweulu swamps during dry periods and back to the Luangwa Valley during the wet season. These migrations do not occur yearly as they depend on the quality of grazing resources and the presence of water in the Bangweulu swamps, even in dryer periods. Main migrants include elephants (EN), lions (VU), and buffalos (NT). However, the fragmentation of the area has led to a significant decrease in animal movement.

According to our sources, Lavushi Manda National Park was created notably to improve ecological connectivity. The park's current species diversity and abundance are not exceptionally high, but its habitats have been in a transitional rehabilitation phase since its classification as a national park.

Several Endangered and Critically Endangered eagle and vulture species are present or potentially present within the BIIA, such as the Bateleur (*Terathopius ecaudatus*) and the Martial Eagle (*Polemaetus bellicosus*), the White-headed Vulture (*Trigonoceps occipitalis*) and the White-backed Vulture (*Gyps africanus*). The Lavushi Manda National Park is likely of importance for these species, as large eagles and vulture have been extirpated over huge areas of their former range and now survive almost only in the national parks, which present essential characteristics for these species, including for foraging and breeding (Thiollay, 2006). Furthermore, Lavushi

Manda NP is also vital for African and Palearctic migrants and serves as a seasonal refuge for Bangweulu's ungulates during the wet season (World Bank, 2009).

For its essential ecological functions and the role it plays for CR and EN species, Lavushi Manda National Park is considered Critical Habitat.

5- SUMMARY OF CRITICAL HABITAT ASSESSMENT

Of the 14 species assessed in detail under criteria 1, 2 and 3, 4 flora species trigger critical habitat. Habitats supporting species with critical habitat in the EAAA are:

- Miombo woodland within Mutinondo Wilderness Area and Bwingi Fumu Forest Reserve for *Encephalartos schmitzii* Muchinga Escarpment (Unlikely presence in the DIA, which is west of the escarpment)
- Natural undisturbed wet grasslands and dambos within the BIIA for *Disa aequiloba*.
- Rock outcrop in the Kasama Forest reserve for *Euphorbia perplexa var kasamasa*.
- Thin soils and rock crevices on Muchinga Escarpment in Serenje for *Gladiolus serenjensis* (Unlikely presence in the DIA, which is west of the escarpment).

Also, Lavushi Manda National Park has been identified as a critical habitat under criteria 5.

Amongst the requirements set in the WB's ESS6 for critical habitat, it will need to be demonstrated that the project will not involve significant conversion or significant degradation of these critical habitats and the project's mitigation strategy will need to be designed to achieve net gains of those biodiversity values for which the critical habitat was designated

Specific management strategies for critical habitat triggering values and species are presented in the Biodiversity Management Plan (Section 4.1 of the ESMP), including management objectives, key management measures, residual impacts, and compensation or additional conservation actions required to achieve net gain.

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APPENDIX

7-1 LIST OF STAKEHOLDER ORGANIZATIONS IDENTIFIED IN ZAMBIA

Table 1: Summary of Project Stakeholder Needs

Stakeholder group	Stakeholder	Key characteristics	Language needs	Preferred communication method(s)	Specific needs
Government Ministries, Departments, and Agencies	Ministries	Consists of relevant Ministries including Ministry of Energy, Ministry of Green Economy and Environment, Ministry of Lands and Natural Resources, Ministry of Labour and Social Security, and Ministry of Local Government and Rural Development etc.	English	Formal meetings Structured agendas Email communication. Telephone	Planned stakeholder engagements, information generation and dissemination. Regular formal and informal meetings
	Statutory Bodies and Government Departments	Composed of agencies that include Zambia Environmental Management Agency (ZEMA), Factories Department, Department of National Parks and Wildlife, Forestry Department etc.	English	Formal meetings Structured agendas Email communication Letters	Planned stakeholder engagements, information generation and dissemination. Regular formal and informal meetings.
		These form the local administrative structure in the various districts through which the ZTIP traverses. Local Authorities composed of various local administrative authorities along the project route in	English	Formal meetings Structured agendas Email communication Letters	Project roles and responsibilities, planned stakeholder engagements, information generation and dissemination.

Stakeholder group	Stakeholder	Key characteristics	Language needs	Preferred communication method(s)	Specific needs
		Serenje, Mpika, Kasama, Mungwi, Mbala, Chinsali, Nakonde, Isoka, and other local government agencies			
Local Communities	The elderly, Persons with Disabilities and their caretakers, Poor/low-income families/households, Women and child headed households	Group of people directly affected by the project as they are within the ROW.	Local languages	Focus group meetings /discussions, Community consultations Site visits	Sensitization on ZTIP and its outcomes. Adjusting meeting arrangements to fit local culture and expectations.
	Traditional Leadership including Chiefs, Chieftainess', Headmen/Headwomen, and any other traditional leadership.	Project traverses through their area of traditional jurisdiction.	Local languages	One on one interviews Focus group meetings /discussions, Community consultations Site visits	Sensitization on ZTIP and its outcomes. Adjusting meeting arrangements to fit local culture and expectations
International partners	World Bank	Financiers of the project. Possess knowledge of E&S management.	English	Email, telephone calls, meetings (in person or virtual)	Project progress in relation to preparation, implementation, stakeholder engagements, joint control and management efforts, experience sharing, grievances received and how they are

Stakeholder group	Stakeholder	Key characteristics	Language needs	Preferred communication method(s)	Specific needs
					being handled and resolved, Regular formal and informal meetings
	CoWater, CIG Zambia, FCDO	Financiers for the Environmental and Social (E&S) update of the ZTIP ESIA.	English	Email, telephone calls, meetings (in person or virtual)	Progress meetings regards timelines for ESIA update and funding.
	WSP	Consultant updating the ESIA, ESMP, and RAP for the ZTIP	English	Email, telephone calls, meetings (in person or virtual)	Progress meetings regards the updating of required E&S documents
Other interested organizations	Non-governmental organisations including agencies such as Birdwatch International Zambia, National Heritage Conservation Commission and World Wildlife Fund (WWF) etc. with an interest in the project	NGOs have an interest in the project as it may traverse areas of their interest such as wetlands or affect other aspects of their interest.	English	Formal meetings Structured agendas	Sensitization and consultation on ZTIP and its outcomes. Adjusting meeting arrangements to fit local culture and expectations
	Media	Mass media and associated interest groups, including local, regional and national print and broadcast media, digital/web-based entities, and their associations	English	Formal meetings Structured agendas	Sensitization and consultation on ZTIP and its outcomes. Adjusting meeting arrangements to fit local culture and expectations

APPENDIX

7-2 *MINUTES ROUND 1*

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI - MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT CHIMBA BASIC SCHOOL IN MUNGWI ON 14TH NOVEMBER, 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISATION
1		Head-Teacher **(Chairperson)**
2		Teacher
3		Teacher
4		Teacher
5		Teacher
6		Teacher
7		Peasant farmer
8		Peasant farmer
9		Peasant farmer
10		Peasant farmer
11		
12		Peasant farmer
13		Peasant farmer
14		Peasant farmer
15		Agricultural assistant
16		Business man
17		
18		Business man
19		Peasant farmer
20		Peasant farmer
21		Peasant farmer
22		Teacher-Head (Chairperson)
23		Teacher-Deputy Head
24		Headman Masembe
25		Sub Chief Chimba
26		Head man Chasenama
27		Teacher
28		Business man
29		Business woman
30		Peasant farmer
31		
32		Peasant farmer

33		Peasant farmer
34		Peasant farmer
35		Peasant farmer
36		Peasant farmer
37		Peasant farmer
38		Peasant farmer
39		Business man
40		Peasant farmer
41		Peasant farmer
42		Peasant farmer
43		Peasant farmer
44		Peasant farmer
45		Peasant farmer
46		
47		Peasant farmer
48		Peasant farmer
49		ZESCO-Ndola
50		ZESCO-Ndola
51		ZESCO-Ndola
52		ZESCO-Ndola **(Secretary)**

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENNING REMARKS

The chairperson also Head teacher of Chimba basic school opened the meeting at 14:20 and requested one of the attendants to pray. The prayer was given by . The chairperson proceeded into introduction of the distinguished guests present, the acting Chief Chitimukulu; Sub-Chief Chimba and his entourage from the Bashilubemba Royal Establishment and the ZESCO team themselves respectively. The chairperson further requested the ZESCO team to explain the reason for the meeting to the delegates of chimba community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will be tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO further added that this project is in line with and aims at achieving the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise to be carried out before the implementation of a project. This is to emphasise the importance of stakeholder or community participation at all stages of project implementation. **ZESCO** informed the meeting that it is through this process that possible impacts are identified and recommend mitigation measures for the purpose of minimizing or eliminating the anticipated negative impacts of the project.

In addition, **ZESCO** also explained that if there are any environmental or social concerns regarding the projects that stakeholders want considered, the time to raise such concerns is at this important meeting.

Further, **ZESCO** explained that the power line to be constructed will be a very high voltage transmission line and therefore no structures will be permitted to be built under this line. This therefore means that, for safety reasons, people are not allowed to settle within the cleared area under the power line's Right of Way (wayleave). **ZESCO** further stated that in selecting the most suitable route for the power line, ZESCO shall ensure that settlements are avoided by all means. This shall be done as a safety precaution for the people and their properties but most importantly, in order not to disturb settlements unnecessarily.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, **ZESCO** invited questions/comments and observations from the participants over the project.

QUESTION

wanted to find out, how ZESCO will compensate the community if the line passes through a school?

ANSWER

ZESCO answered by stating that the Corporation does always endeavor not to disturb any settlements and cause unnecessary displacement of people in undertaking all its projects. Therefore, in the selection of the line route for the project, surveyors shall make sure that no settlements or properties, both private or public, are affected unnecessarily, but in cases where it is found that no alternative route can be found, the affected person/s would be engaged and consents obtained. **It was** further stated that after obtaining the consent, ZESCO does engage the services of an independent registered property valuer to assess the value of the affected assets and attach monetary value to them. Based on the monetary value in the valuer's report, ZESCO would then enter into a mutual agreement with the affected person/s for compensation. After compensation is paid out the affected individual/s is requested to relocate, given a grace period of say 3 to 6 months depending on the nature of the project and the affected assets. Relocation will, however, not be done in the rain season.

QUESTION

wanted to know whether the power line will be able to benefit the household consumer.

ANSWER

ZESCO in response explained that the main objective of the project is that of increased access to clean and reliable electricity for household, commercial and industrial needs in Mungwi District and surrounding areas. And further it was explained that though the 132kV line is a high voltage transmission line, it will be stepped down to 33kV and 11kV line for distribution and finally to medium voltage (400v) for supply to households. In addition, the Rural Electrification Authority will also be able to carry out its rural electrification projects in Mungwi District and surrounding areas through this same project.

QUESTION

asked when the project will start.

ANSWER

ZESCO responded by explaining that the stakeholder involvement through the scoping meeting being held signified the beginning of the project. **ZESCO** further stated that the records of the meeting (minutes) forms part of the final report to be presented to the Zambia Environmental Management Agency (ZEMA) for project approval and once approved, the actual construction works of the 132kV transmission line would then commence. As stakeholders, you will be informed at each and every stage of the project implementation as part of continuous stakeholder engagement, **ZESCO** added.

QUESTION

wanted to know whether ZESCO will take power to Chimbola village, located a few kilometers from Chimba.

ANSWER

ZESCO in reply explained that the project is an important one as it will form a backbone for rural electrification projects in Mungwi District and surrounding areas as alluded to earlier. Further ZESCO added that in the Rural Electrification Master Plan, there are a good number of villages in Mungwi which are referred to as Rural Growth Centres (RGCs) that are earmarked to benefit from the project.

QUESTION

wanted to find out who will be responsible for power distribution to the local consumer (households).

ANSWER

ZESCO explained that the Corporation will be responsible for connecting customers to electricity but customers will need to pay for the new installation of electricity to their premises.

ZESCO also added that, the Government with other collaborating partners such as the World Bank, through ZESCO, has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among

other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, **ZESCO** explained that the total cost of connection can be by shared the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy Programme

In the subsidy programme, **ZESCO** informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay **K150,000.00** as the case in Chitimukulu and surrounding areas.

QUESTION

wanted to know, referring to the electrification of the school, who will be responsible for the wiring and connection of teacher's compound.

ANSWER

ZESCO, in response explained that the electrification under discussion was a Government driven project and therefore, Government will ensure that all Government institutions in the identified RGCs are connected to electricity and this includes, among others, Rural Health Centres and Schools.

COMMENDATION

commended government through ZESCO over the power reinforcement and power supply to Mungwi district that will benefit the people and foster development in the long run.

COMMENDATION

commended ZESCO for the gesture that will see the unemployed youths get employed during the project life cycle.

SUGGESTION

suggested that the chief should provide land where the affected people will be relocated to.

ANSWER

ZESCO acknowledged the suggestion by stressing that the influence of Chiefs is cardinal for successful implementation of any developmental project. To this effect, **He** further added that courtesy visits have been made to the Royal Highnesses in Mungwi and surrounding areas. **ZESCO** further mentioned that the Royal Highnesses, Acting Paramount Chief Chitimukulu, Senior Chief Mwamba, Chief Makasa and Sub-Chief Mutale Mukulu were among the Chiefs visited for the purpose of explaining the project to them getting their consents and support in order to successfully carry out project works in their respective chiefdoms.

ZESCO further clarified that unlike a mining project, the 132kV electrification project was a linear one and therefore affected people, if any, will not be required to relocate far away from their current settlement areas. **ZESCO** also added that the affected people will only move a few meters away from the wayleave to be proposed after detailed survey is carried out.

QUESTION

wanted to know how the employment process will be conducted since most villages are close to each other.

ANSWER

ZESCO responded that the Corporation will always seek the help of the local leadership in the recruitment of workers. This is because they are the ones who know the boundaries of the villages and the demography of a given village.

6.0 CLOSING REMARKS

requested the Acting Chitimukulu Sub chief Chimba to address the audience, the acting Chitimukulu in his speech explained that the people of Chimba Village and other surrounding villages feel neglected, citing challenges being faced in the area such as poor road network that are impassable during rainy season and lack of electricity supply in the area. However, he said the electrification of Chimba, Makasa, Kayambi and other areas will be a milestone in the

history of the Bembaland. He therefore, commended ZESCO and wished the company well in their future endeavours.

ZESCO thanked the people of Chimba village and the surrounding villages for their audience and contributions. Furthermore, ZESCO assured the people present that all their concerns have been noted.

In his closing remarks, the chairperson thanked all the people present for their participation. He further requested any of the participants to close in a word of prayer. The prayer was given by . Following the closing prayer, the chairperson declared the meeting closed at exactly 15:15 hours.

.....

CHAIRPERSON

DATE 14-11-2012

.....

SECRETARY

DATE 14-11-2012

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION, SCIENCE,
VOCATIONAL TRAINING & EARLY EDUCATION
14 NOV 2012
OFFICE OF THE HEADTEACHER
CHIMBA BASIC SCHOOL
P.O. BOX 48 - MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE PROPOSED KASAMA-MUNGWI-MALOLE-KAYAMBI 132KV PROJECT HELD AT KAYAMBI AGRICULTURE OFFICE IN MUNGWI DISTRICT ON 2ND DECEMBER, 2014

1.0 **PRESENT**

No.	NAME	POSITION/ORGANISATION	PHONE NUMBER
1		Area Councillor **(Chairperson)**	
2		Farmer	
3		Farmer	
4		Farmer	
5		Farmer	
6		Farmer	
7		Farmer	
8		Farmer	
9		Farmer	
10		Farmer	
11		Farmer	
12		Farmer	
13		Farmer	
14		Farmer	
15		Farmer	
16			
17			
18			
19			
20			
21			
22		Farmer	
23		Business man	
24		Farmer	
25		Farmer	
26		Farmer	
27		Farmer	
28		Farmer	
29		Social Scientist-ZESCO	
30		Surveyor-ZESCO	
31		Social Scientist-ZESCO **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 09:40 hrs. The chairperson welcomed everyone present and invited the team from ZESCO to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

The team from ZESCO Limited informed the meeting that the Government of the Republic of Zambia, through ZESCO plans to carry out an ambitious electrification project in Mungwi district. The meeting heard that the intended electrification project will involve the construction of a 132 Kilo Volt (kV) transmission line starting from Kasama via Mungwi, Malole up to Kayambi and will cover a distance of 171km and that it will provide sufficient power. A plan to construct substations at Chimba, Malole and Kayambi was revealed and the meeting was told that the Area Councilor with some members of the community had already selected areas for the proposed substations. The meeting was further informed of the plan to tap power from the substations and that people wanting to have access to electricity would be requested to apply.

The ZESCO team explained further that as a company, there were procedures to be followed when starting a project and that the company was particular on the need to engage the community for discussions before commencing construction works in order to hear the people's views concerning the project. The meeting also heard that the scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011.

In addition, the meeting was informed that due to the high voltage of the line, people were not allowed to leave along the transmission line as it was risky to their lives. Hence the meeting was told that to prevent accidents, people were expected to avoid settling within or along the line.

The meeting was further informed that the initial survey which was carried out indicated that there were no people to be affected by the project. However, in case any properties were to be found during the detailed survey, the affected people would be engaged and adequately compensated. The need to engage agricultural experts to assess the value of agricultural fields and fruit trees for compensation in an event that crops or fruits are

affected was also explained. The meeting was also informed about the Environmental Impact Assessment (EIA) report to be prepared for the project. The importance of the EIA document was explained with emphasis on the identification of the positive and adverse impacts of the project regarding the environment and social issues and also provide mitigation measures Further, the meeting was informed that the EIA for the project will have to be approved by Zambia Environmental Management Agency (ZEMA) for the construction work can commence.

ZESCO also informed the meeting that they consider local people for semi-skilled jobs during project implementation. Therefore, when works commence, the company will not come with people to do semi-skilled works but to depend on local labour from the community. The chairperson emphasized to the members of the community the need to be fair when identifying the people to provide the required semi-skilled labour as this would ensure fair distribution of benefits.

5.0 QUESTIONS AND ANSWERS

The people at the meeting were given an opportunity to ask questions and express their views:

QUESTION

asked whether it was possible to share the connection fee as neighbors, especially for those that would not want to use a lot of electricity.

ANSWER

In response, **ZESCO** explained the introduction of the prepayment metering system where installation of the meter at the customer's premises with the benefit of the customer to control consumption and usage. Therefore, sharing of the meter was discouraged as this would not allow individuals to monitor and control their consumption and to get the freedom of budgeting and buying the power according to each household consumption. Furthermore, company regulations do not allow sharing of prepaid meters as this is an offence hence the connection fee cannot be shared.

QUESTION

asked what would happen in a situation where someone had a katemba (kiosk) within his premises.

ANSWER

ZESCO responded by stating that a kiosk was an extension from the main house and since it is used for trading, it would be captured under the commercial tariff. Therefore the

two would be treated as separate even if they were in the same premises. People were encouraged to provide all the necessary information and to be truthful and transparent when filling in the application forms. People were also discouraged from tapping power to extensions once ZESCO had done the installation as this was an illegal practice that would attract penalty charges and other further actions against the customer. This is also a crime case and the normal procedure for meter separation was explained for cases where the customers had more than one property on the same premises.

QUESTION

said she lives at a farm and wanted to find out whether the connection charge was also K150.00

ANSWER

ZESCO explained the procedures involved in the application for new installation which involved an assessment of the premises before the production of a quotation by planners and that the amount to be paid depended on the assessment and location of the premises. It was further explained that currently, Kayambi was a subsidized area where people were required to pay K150.00 only as capital contribution under the increased access to electricity a World Bank funded program with **ZESCO**. Women were encouraged to take advantage of the programme as it supported them under the women empowerment to electricity scheme.

QUESTION

wanted to know how long it takes for **ZESCO** to respond to applications for new connections. He expressed worry that the process took too long basing on what he had heard from other people. He further urged the company exercise fairness when connecting people citing the case of REA (Rural Electrification Authority) where he felt there was no fairness in the way they handled their project .(i.e. the 33KV overhead line from Chozi to Makasa via Kayambi).

ANSWER

In answering the question, **ZESCO** explained the guidelines stating that it should take 14 days (2 weeks) for a quotation to be ready after receipt of an application form and 12 weeks (3 months) to be connected after a full payment is made. However, people were encouraged to make follow ups where they felt the company was taking long to respond. **ZESCO** further assured the meeting that as a company, they worked differently and separately according to the agreed terms. In addition, the meeting was informed that when REA constructed a line, they handed it over to **ZESCO** for operations. Therefore, the fear of impartial treatment as referred to should not arise as **ZESCO** would be in charge of the operations.

QUESTION

wanted to know when the project was starting and when it would finish.

ANSWER

In response, the **ZESCO** team informed the meeting that constructors had been on the ground already, with 10 companies having done the assessment and that **ZESCO** was just waiting for bids after which a contractor would be picked to commence the works hopefully in the 1st quarter of 2015.

QUESTION

asked how effective the project was going to be considering the bad state of the road.

ANSWER

ZESCO responded that the challenges of the road depended on how quickly the Government would assist with the road works. However, the chairperson assured the meeting that the road issue had been included in phase three of the Government's plan on road works.

QUESTION

wanted to know how REA were going to hand over their project to ZESCO when they still owed money to casuals for the labour provided during the project. He appealed to the **ZESCO** team to take the issue to the attention of Management for consideration before handover so as to ensure that the 45 casual workers that were engaged by Prince Construction, a company engaged by REA, were going to settle the salary arrears.

QUESTION

In response, the **ZESCO** team assured the meeting that they would present the matter to Management before the project starts.

6.0 CLOSING REMARKS

The chairperson thanked the team from **ZESCO** for the visit and expressed happiness on the practice of involving people from the community to hear their views on the project. He also thanked all the people present at the meeting and encouraged everyone to support

the project as it would bring benefits to the community stating that the project was not for one person but for everyone hence the need for the whole community to get involved and give support.

There being no further business to discuss, the meeting was closed at 10:50 hrs.

.....
CHAIRPERSON

DATE 2/12/2014

.....
SECRETARY

DATE 02/12/14

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE – KAYAMBI 132 KV TRANSMISSION LINE PROJECT HELD AT THE MUNGWI DISTRICT'S COUNCIL CHAMBER IN MUNGWI DISTRICT ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	POSITION/ORGANISATION	CONTACT NO.
1		Branch Manager ZESCO **(Chairperson)**	
2		Procurement Officer - Health	
3		Office Assistance DC's Office	
4		Planner- Health	
5		Party Official-PF	
6		S.D.A Church Represanative	
7		Nurse-Mungwi Health	
8		Council	
9		Teacher(Labour Union)	
10		Enterpreneur	
11		District Stakeholder Committee	
12		HeadMan	
13		Pastor(Pastors Fellowship)	
14		Mulondolwa Jatropha	
15		ZANAPA	
16		Mungwi Court	
17		District Manager-Chambeshi Water	
18		Head Teacher-Musenga	
19		Deputy Treasurer MDC	

20		Committee Member-Mungwi Market	
21		Forestry	
22		Deputy Planner-Council	
23		ESO-ED	
24		MOH	
25		PeaceCoarp-Education	
26		Head Woman	
27		District Planner-Mungwi Council	
28		District Commissioner(DC)	
29		ZESCO-Ndola-ESD	
30		ZESCO-Ndola-ESD	
31		ZESCO-Ndola-ESD	
32		ZESCO-Ndola-ESD	
33		ZESCO-Ndola-ESD	
34		ZESCO-Ndola -ESD **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 14:56 hours with an opening prayer from one of the participants. The Chairperson, **ZESCO Branch Manager,** , introduced himself and further requested participants to introduce themselves before proceeding into the deliberations of the meeting.

The Chairperson informed the meeting that there was a team from Ndola ZESCO working on a project called Kasama – Mungwi - Malole –Kayambi 132 kilo Volts (kV) transmission line project. He told the meeting that Mungwi District has been facing challenges of insufficient electricity supply, hence the need for the new project which will boost power supply in Mungwi and the surrounding areas. The chairperson further requested the ZESCO team from Ndola to explain the reason for the meeting to the people of Mungwi Central Business District community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO started by explaining that the purpose of the meeting was to give a project brief to the stakeholders and get their contributions and concerns on various aspects of the project and help in the implementation of the project. ZESCO further stated that the objective of the project was to address the challenges of electricity supply in Mwingu District and Northern Province as a whole. ZESCO explained that the quality of electricity supply in the Northern Province has over the years become very poor because the current 66kV line from Kasama which also feeds Mungwi, among many other areas has been out-stripped by overwhelmingly increased demand for electricity services hence resulting in areas experiencing very low voltage resulting into conducting of load shedding. He further added that ZESCO has embarked on other projects such as the construction of the proposed Pensulo-Kasama 330kV transmission line and upgrading and rehabilitation of Chishimba falls Power Station, Itezhi-Tezhi 330kV and Kafue George lower 330kV transmission line projects in order to enhance reliability and sufficient electricity supply in the Northern area and the country as a whole.

The Kasama – Mungwi – Malole – Kayambi 132kV transmission line will be tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO further added that this project is in line with and aims at achieving the objectives of the Rural

Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community and relevant stakeholders on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, the floor was opened for questions contributions.

QUESTION

wanted to know when the project is likely to commence.

ANSWER

ZESCO in response explained that the project had started and the scoping meeting was part of the process. In addition, the meeting was informed that survey works had stated.

QUESTION

wanted to know the construction period of the power line and if the budget of the affected parties had been done. Additionally, he wanted to find out if the tentative list of the affected people had been done since survey works had already started.

ANSWER

ZESCO explained that the purpose of the survey was to find a route for the power line and it's from the route-survey where the affected people by the project shall be identified. He told the meeting that an independent registered valuer shall be engaged to value the affected structures. Furthermore, it was stated that if fruit trees or crops shall be affected, ZESCO shall engage the services of the Ministry of Agriculture though the District Agriculture Coordinator's office to carry out an assessment of the affected fruit trees and crops and attach value to them the basis on which compensation shall be effected.

QUESTION

was interested in knowing whether ZESCO was working in collaboration with roads department considering the fact that roads become impassable during rainy season in Mungwi District particularly the Chimba – Makasa – Kayambi Road. He was concerned that the contractor might face some challenges in the transportation of construction materials.

ANSWER

ZESCO in response told the meeting that access roads to the project site areas would certainly need to worked on in order to allow for the smooth movement of project materials. In addition, the Government of the Republic of Zambia, the Road Development Agency (RDA), has also got it's programmes aimed improving the road infrastructure.

QUESTION

was trying to find out what would happen to rivers located in the line corridor.

ANSWER

ZESCO explained that prudent steps are taken during conducting of the detailed survey to ensure that river sources are not disturbed in all project work. The meeting was also informed that measures are put in place when crossing water bodies such as rivers and lakes in order to avoid putting such important natural resources.

QUESTION

interested to know if ZESCO will employ some technicians and electricians from Mungwi during the construction of the power line. Secondly, he was asking when the prepaid meters will be installed in Mungwi town.

ANSWER

In response, **ZESCO** explained that when it comes to employment in the project area, local people are given first priority especially where semi-skilled and unskilled manpower is concerned; outside labour may disturb the social set up in the project area.

Further, ZESCO added that the installation of prepaid meters in an ongoing project and soon that later the project might be rolled out in Mungwi District.

QUESTION

wanted to know whether ZESCO will do the construction of the line or it will engage a contractor.

ANSWER

ZESCO in response explained that ZESCO will use a Contractor and that there will be tender procedures that will need to be followed as stipulated by the Laws of the Country.

QUESTION

was interested to know the methods ZESCO was using to disseminate information to the people in the project area and if ZESCO informed the people that they should be 50m way from the proposed line.

ANSWER

In answering the question, **ZESCO** explained that the meeting in the Chamber was a fourth scoping meeting to be conducted in the project area. He further mentioned that stakeholders such as traditional leaders, Local Council Authorities, Government Departments, Non-governmental Organisation and Councillors were engaged to disseminate the information in the villages and local languages were used during the

meeting and interpretations done where necessary. It was further added that strategic stakeholder identification is done in order to fine tune the channel of communication as in the case of communicating yo government heads of departments, the Office of the District Commissioner is engaged and for the stakeholders in villages traditional leaders are engaged and this system has worked out very well.

COMMENT

expressed concern that most developers who carryout projects in Mungwi usually do not share with the local authorities the information they gather in the project area for their reports. He advised ZESCO to send a copy of an EIA to the Mungwi Council once it's done and approved by ZEMA.

6.0 CLOSING REMARKS

The Chairperson thanked everyone who attended the meeting. He further mentioned that the project came at the right time when development was needed in Mungwi. He added that the project was welcome and people of Mungwi shall support it.

The meeting was closed at 16:00 hours with a closing prayer

.....
CHAIRPERSON

DATE.....15/11/12.....

.....
SECRETARY

DATE.....15/11/12.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE - KAYAMBIKV TRANSMISSION LINE PROJECT HELD AT MAKASA CATHOLIC CHURCH ON 3rd OCTOBER, 2012.

1.0 PRESENT

No.	NAME	OCCUPATION/ORGANISATION
1		Ward Councilor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Farmer
11		Farmer
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Farmer
17		Farmer
18		Farmer
19		Farmer
20		Farmer
21		Farmer
22		Farmer
23		Farmer
24		Farmer
25		Farmer
26		Farmer
27		Farmer
28		Farmer
29		Farmer
30		Farmer/V. Headman
31		Farmer
32		Farmer
33		Farmer

34		Farmer
35		Peasant Farmer
36		Peasant Farmer
37		Pastor
38		Farmer
39		Farmer
40		Farmer
41		Farmer
42		Farmer
43		Farmer
44		Farmer
45		Farmer
46		Barber Man
47		Barber Man
48		
49		
50		Barber Man
51		Brick layer
52		Brick layer
53		
54		
55		
56		
57		
58		
59		
60		
61		ZESCO – Lusaka
62		ZESCO – Ndola
63		ZESCO – Ndola
64		ZESCO – Ndola
65		ZESCO – Ndola
66		ZESCO – Ndola **(Secretary)**

2.0 AGENDA

- Prayer
- Opening Remarks
- Presentation of the project
- Questions and Comments
- Closing Remarks

3.0 OPENING REMARKS

The Chairperson, , called the meeting to order at 11:50hours after a prayer and welcomed everyone present. He then requested the ZESCO team to introduce its members.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

ZESCO mentioned that ZESCO had already paid a courtesy on Chief Makasa with the aim of explaining to His Royal Highness the proposed electrification project and getting permission to implement the same in his chiefdom. ZESCO further requested for cooperation and support from the people of Makasa Village and surrounding areas.

5.0 QUESTION AND ANSWERS

QUESTION

asked what kind of support ZESCO needed from the local people.

ANSWER

ZESCO responded by explaining that the electrification project was of grea t social and economic importance to the people of Makasa and surrounding areas. It was added that the Government of the Republic of Zambia has placed a very high p remium on growth-stimulating interventions such as this proposed electrification projec t in Mungwi District which will, undoubtedly, greatly contribute to poverty reduction in the area. ZESCO further pointed out that access to clean, reliable and affordable electricity is fundamental to daily life and any level of socio-economic development.

ZESCO further stated that such a project to be fully implemented and bear its intended fruits, there is need for support from the local people just like the support given through attendance of the scoping meeting and by way of safeguarding of this important infrastructure and not engage in vices such theft and vandalism.

QUESTION

asked if the map for the proposed power line route was available for everyone.

ANSWER

ZESCO answered with an explanation that the map was not yet ready but once the survey works are done and concluded, then the line route for the proposed power line will be produced and shall certainly be made available through His Royal Highness Chief Makasa, respective village headmen and any other relevant local leadership.

QUESTION

wanted to know other places that will be electrified apart from Makasa.

ANSWER

ZESCO answered with an explanation that the proposed electrification project was an ambitious programme which will be implemented in line with the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratios in the rural areas from the current 3% to 51% by the year 2030.

As mentioned earlier, ZESCO added, the power line will take off from the new 330/132/66kV substation to be constructed in Kasama through Mungwi and Malole up to Kayambi and this indeed therefore means that there other places that will be electrified apart from Makasa among which include Mungwi District areas of Kayambi Mission, Mbesuma Ranch and other selected settlements in the Chambeshi Basin.

QUESTION

asked if the electricity tariffs will be the same as these charged in town.

ANSWER

ZESCO responded by informing the meeting that electricity tariff charges are uniform throughout the country regardless of the place or area one may be. It was further stated that people living in Kafue Gorge or Kariba, where electricity is generated, pay the same tariff charges as anyone else around Zambia.

QUESTION

asked when the works will commence.

ANSWER

ZESCO responded that the project has already started but as ZESCO we have to follow right procedures according to the legal requirements of the country such as the Zambia Environmental Management Agency (ZEMA)'s environmental regulations. It was added that actual construction works would commence soon after project approval by ZEMA.

QUESTION

wanted to know what criteria, ZESCO uses to employ people during such projects.

ANSWER

ZESCO answered by explaining that employment shall be done through consultations with the local leadership. It emphasised added that it is ZESCO's desire that as many

people, especially the youths, benefit from the project. There are many categories of works to be done such as bush clearing, digging of holes, construction of access roads to mention a few. Therefore different people shall be employed at different stages of the project.

COMMENT

was delighted to know that ZESCO was aware of the problem that Mungwi District is facing. In order for the town to attract investment in tourism and other sectors of the economy, it required electricity. He therefore, urged ZESCO to expedite the projects as soon as possible.

COMMENT

recommended ZESCO for the project because it would improve the livelihood of the people of Makasa, and assured ZESCO of full support. He further recommended ZESCO for the jobs that will be created during the project to the local people.

6.0 CLOSING REMARKS

The chairperson thanked the visiting team and the local participants for their time and attention during the meeting. A prayer was given by one of the participants and the meeting officially closed at 12.40hrs.

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Chairperson

Date.....22.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
P.O. BOX 50,
MUNGWI

.....

Secretary

Date.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA - MUNGWI – MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT ST. JOHN'S SECONDARY SCHOOL IN MALOLE ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISTATION
1		Area Councillor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Crafts
11		Crafts
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Business woman

17		Farmer	
18		Farmer/ Headman	
19		Headman	
20		Farmer	
21		Teacher	
22		Farmer	
23		Farmer	
24		Farmer	
25		Farmer	
26		Farmer	
27		ZESCO LTD-Ndola	
28		ZESCO LTD-Ndola	
28		ZESCO LTD-Ndola	
30		ZESCO LTD-Ndola	
31		ZESCO LTD-Ndola	
32		ZESCO LTD-Ndola (**Secretary**)	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The chairperson, -Area councillor, opened the meeting at 09:36 hours and welcomed everyone present. He then allowed the ZESCO team to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

The people present at the meeting were then given a chance to ask q estions and make necessary contributions:

QUESTIONS

wanted to know:

I. How ZESCO will ensure that the houses in the community are wired by genuine, qualified people, stating the fact that if houses are not wired prope ly accidents such as fires due to short circuits might occur.
II. How much the installation of power will cost?
III. What would happen if compensation is delayed and if there is a race period given for how long a person should take to build a new house?

ANSWER

ZESCO responded by explaining that ZESCO's responsibility in connecting ustomers to electricity ends at the metering point. However, before making a ne electricity connection, ZESCO does conduct a thorough inspection on the pre ises to be connected in order to ensure that it meets the acceptable wiring stand rds for the safety of the people and the property itself. **ZESCO** implored the people pr sent to use qualified electricians in the wiring of their premises in order not to comp omise their safety and that of their property.

In answering the second question, **ZESCO** responded by informing the eeting that this is an important project of national economic importance as Governmen recognizes the importance of rural electrification as a key to enhance growth and so io-economic development and thereby contribute greatly in poverty reduction. He furth er informed the meeting that the total cost of the project is estimated at US$25 Million.

Finally, **ZESCO** explained that no affected person/s shall be asked to rel cate before compensation is made and that the grace period is only agreed upon once compensation is fully effected. The grace period may range from 3 t 6 months depending on the nature of the project and the affected assets. Fu her ZESCO emphasised no relocation is done during the rain season.

QUESTION

wanted to find out if an individual who wants to have access to power will have to buy the cables required for the connections themselves as well as pay the installer.

ANSWER

ZESCO answered by stating that when a customer applies for new electricity connection, ZESCO shall assess the total cost of the new connection, taking into consideration the cost of materials and other associated costs, the customer to be connected only pay a small percentage of non-refundable fee which is referred to as 'Capital Contribution'. ZESCO further added by informing the meeting that upon payment of the capital contribution, ZESCO provides the service cable, and any other associated connection materials that runs from the electric pole to the distribution box. However, the cost of wiring the premises is totally incurred by the respective customer.

QUESTIONS

asked:

I. If the charges for having ones house wired will be based on their house's distance from the line.
II. If he should wait for the new line to be constructed in order to apply for power or he can still get power from the already existing line.

ANSWER

ZESCO responded by explaining that under normal circumstances, the distance between the premises to be connected and the source of connection does play a major role in quantity of material to be used in the new connection undertaking. The longer the distance, the more the material to be used and subsequently the higher the total cost of connection.

However, ZESCO added that, the Government with other collaborating partners such as the World Bank through has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, ZESCO explained that the total cost of connection can be shared by the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy programme

In the subsidy programme, ZESCO informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay K150,000.00 (Kr 150) as the case in Chitimukulu and surrounding areas.

ZESCO also informed the meeting that the project was government-driven and so the exact time when construction works would commence cannot be stated now but however the meeting being held signifies the actual commencement. ZESCO further encouraged and many others to go ahead and apply for power supply from the existing supply lines.

QUESTION

asked the ZESCO team what would be done if cemeteries were found within the proposed route.

ANSWER

ZESCO answered by explaining that ZESCO has made it a mandate to avoid all grave yards, shrines and any other areas of social or cultural importance to the people hence the involvement of the local people so that they can guide ZESCO on the location of such areas. However, in a case where a grave yard, un-knowingly, is found within the proposed route, the line will have to be re-surveyed in order not to disturb the grave yard which must respected in our rich Zambian culture.

QUESTION

wanted to know if more than one kiosk can be connected to a single meter.

ANSWER

ZESCO responded by informing the meeting that such connections were not allowed as the corporation might make losses. It was added that the use of electric power in the kiosks will be different and so some owners might find they end up paying for power they have not used and hence make losses as well. ZESCO further added by advising that each kiosk is supposed to have its own separate connection and this same applies to residential areas, as each house is supposed to have its own connection no matter how close they may be.

QUESTION

wanted to find out if grass thatched houses can also be electrified.

ANSWER

ZESCO in response explained that safety is of paramount importance in all ZESCO's operations and therefore, as explained earlier, all premises are inspected in order to ensure that acceptable safety standards are met before making a new electricity connection is made to the respective premises. This is done in order to safeguard the lives of the people and that of the property. Therefore, the condition or state in which the grass thatched or any other property is found in, at the time of inspection, would either qualify or disqualify it for electricity connectivity.

ZESCO further added that ZESCO will conduct safety awareness programmes in and around the project area as electricity is potentially dangerous if not used properly.

QUESTION

wanted to find when the project would start.

ANSWER

ZESCO responded by explaining that the project has many stages, including the location of protected areas, acquiring consents from chiefs and carrying out survey works to determine the route. The scoping meetings held were part of the project phases and therefore in short, the project had commenced.

QUESTION

wanted to know why another line was being brought to their area when there was already an existing line.

ANSWER

ZESCO responded by informing that despite having an existing line, Mungwi was experiencing power deficit as can be evidenced by low voltages especially during peak periods and so the new line would reinforce the power supply to the area which will bring about safe and improved reliability of electricity.

QUESTION

asked if the local people will be employed when construction works commence.

ANSWER

ZESCO answered by stating that in order to empower and maximize project benefits to the local communities, it is ZESCO's policy that local people are given priority when employing workers during the construction of the power line. It was also added that ZESCO has made it policy to engage local cooperatives, at village level, during annual wayleave maintenance. All these measures are aimed at preserving the social and cultural values of respective villages or areas in which ZESCO is carrying out developmental projects, thereby mitigating against adverse effects of cultural-diffusion that comes in when people are brought in an area from different places and backgrounds.

ZESCO further emphasised that as the project will affect many villages, the people will be employed according to their respective areas in order to ensure that as many people as possible benefit from the project.

6.0 CLOSING REMARKS

thanked the ZESCO team for their visit and urged everyone present to disseminate the information to those that did not attend the meeting, after which he closed the meeting at 11:20hours.

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CHAIRPERSON

DATE.....

.....

SECRETARY

DATE.....22 - 07 - 14.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
22 JUL 2014
P.O. BOX 50,
MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA - MUNGWI – MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT ST. JOHN'S SECONDARY SCHOOL IN MALOLE ON 15TH NOVEMBER 2012

1.0 PRESENT

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3		Farmer	
4		Farmer	
5		Farmer	
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12		Farmer	
13		Farmer	
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15		Farmer	
16		Business woman	

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19		Headman	
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2.0 AGENDA

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5.0 QUESTIONS AND ANSWERS

The people present at the meeting were then given a chance to ask questions and make necessary contributions:

QUESTIONS

wanted to know:

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II. How much the installation of power will cost?
III. What would happen if compensation is delayed and if there is a grace period given for how long a person should take to build a new house?

ANSWER

ZESCO responded by explaining that ZESCO's responsibility in connecting customers to electricity ends at the metering point. However, before making a new electricity connection, ZESCO does conduct a thorough inspection on the premises to be connected in order to ensure that it meets the acceptable wiring standards for the safety of the people and the property itself. **ZESCO** implored the people present to use qualified electricians in the wiring of their premises in order not to compromise their safety and that of their property.

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QUESTION

wanted to find out if an individual who wants to have access to power will have to buy the cables required for the connections themselves as well as pay the installer.

ANSWER

ZESCO answered by stating that when a customer applies for new electricity connection, ZESCO shall assess the total cost of the new connection, taking into consideration the cost of materials and other associated costs, the customer to be connected only pay a small percentage of non-refundable fee which is referred to as 'Capital Contribution'. ZESCO further added by informing the meeting that upon payment of the capital contribution, ZESCO provides the service cable, and any other associated connection materials that runs from the electric pole to the distribution box. However, the cost of wiring the premises is totally incurred by the respective customer.

QUESTIONS

asked:

I. If the charges for having ones house wired will be based on their house's distance from the line.
II. If he should wait for the new line to be constructed in order to apply for power or he can still get power from the already existing line.

ANSWER

ZESCO responded by explaining that under normal circumstances, the distance between the premises to be connected and the source of connection does play a major role in quantity of material to be used in the new connection undertaking. The longer the distance, the more the material to be used and subsequently the higher the total cost of connection.

However, ZESCO added that, the Government with other collaborating partners such as the World Bank through has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, ZESCO explained that the total cost of connection can be shared by the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy programme

In the subsidy programme, ZESCO informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay K150,000.00 (Kr 150) as the case in Chitimukulu and surrounding areas.

ZESCO also informed the meeting that the project was government-driven and so the exact time when construction works would commence cannot be stated now but however the meeting being held signifies the actual commencement. ZESCO further encouraged and many others to go ahead and apply for power supply from the existing supply lines.

QUESTION

asked the ZESCO team what would be done if cemeteries were found within the proposed route.

ANSWER

ZESCO answered by explaining that ZESCO has made it a mandate to avoid all grave yards, shrines and any other areas of social or cultural importance to the people hence the involvement of the local people so that they can guide ZESCO on the location of such areas. However, in a case where a grave yard, un-knowingly, is found within the proposed route, the line will have to be re-surveyed in order not to disturb the grave yard which must respected in our rich Zambian culture.

QUESTION

wanted to know if more than one kiosk can be connected to a single meter.

ANSWER

ZESCO responded by informing the meeting that such connections were not allowed as the corporation might make losses. It was added that the use of electric power in the kiosks will be different and so some owners might find they end up paying for power they have not used and hence make losses as well. ZESCO further added by advising that each kiosk is supposed to have its own separate connection and this same applies to residential areas, as each house is supposed to have its own connection no matter how close they may be.

QUESTION

wanted to find out if grass thatched houses can also be electrified.

ANSWER

ZESCO in response explained that safety is of paramount importance in all ZESCO's operations and therefore, as explained earlier, all premises are inspected in order to ensure that acceptable safety standards are met before making a new electricity connection is made to the respective premises. This is done in order to safeguard the lives of the people and that of the property. Therefore, the condition or state in which the grass thatched or any other property is found in, at the time of inspection, would either qualify or disqualify it for electricity connectivity.

ZESCO further added that ZESCO will conduct safety awareness programmes in and around the project area as electricity is potentially dangerous if not used properly.

QUESTION

wanted to find when the project would start.

ANSWER

ZESCO responded by explaining that the project has many stages, including the location of protected areas, acquiring consents from chiefs and carrying out survey works to determine the route. The scoping meetings held were part of the project phases and therefore in short, the project had commenced.

QUESTION

wanted to know why another line was being brought to their area when there was already an existing line.

ANSWER

ZESCO responded by informing that despite having an existing line, Mungwi was experiencing power deficit as can be evidenced by low voltages especially during peak periods and so the new line would reinforce the power supply to the area which will bring about safe and improved reliability of electricity.

QUESTION

asked if the local people will be employed when construction works commence.

ANSWER

ZESCO answered by stating that in order to empower and maximize project benefits to the local communities, it is ZESCO's policy that local people are given priority when employing workers during the construction of the power line. It was also added that ZESCO has made it policy to engage local cooperatives, at village level, during annual wayleave maintenance. All these measures are aimed at preserving the social and cultural values of respective villages or areas in which ZESCO is carrying out developmental projects, thereby mitigating against adverse effects of cultural-diffusion that comes in when people are brought in an area from different places and backgrounds.

ZESCO further emphasised that as the project will affect many villages, the people will be employed according to their respective areas in order to ensure that as many people as possible benefit from the project.

6.0 CLOSING REMARKS

thanked the ZESCO team for their visit and urged everyone present to disseminate the information to those that did not attend the meeting, after which he closed the meeting at 11:20hours.

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CHAIRPERSON

DATE.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
22 JUL 2014
P.O. BOX 50,
MUNGWI

.....

SECRETARY

DATE.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA - MUNGWI – MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT ST. JOHN'S SECONDARY SCHOOL IN MALOLE ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISTATION	
1		Area Councillor **(Chairman)**	
2		Farmer	
3		Farmer	
4		Farmer	
5		Farmer	
6		Farmer	
7		Farmer	
8		Farmer	
9		Farmer	
10		Crafts	
11		Crafts	
12		Farmer	
13		Farmer	
14		Farmer	
15		Farmer	
16		Business woman	

17		Farmer
18		Farmer/ Headman
19		Headman
20		Farmer
21		Teacher
22		Farmer
23		Farmer
24		Farmer
25		Farmer
26		Farmer
27		ZESCO LTD-Ndola
28		ZESCO LTD-Ndola
28		ZESCO LTD-Ndola
30		ZESCO LTD-Ndola
31		ZESCO LTD-Ndola
32		ZESCO LTD-Ndola (**Secretary**

2.0 AGENDA

- Opening remarks
  Project presentation
- Project discussion
  Closing remarks

3.0 OPENING REMARKS

The chairperson, -Area councillor, opened the meeting at 09:36 hours and welcomed everyone present. He then allowed the ZESCO team to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

The people present at the meeting were then given a chance to ask questions and make necessary contributions:

QUESTIONS

wanted to know:

I. How ZESCO will ensure that the houses in the community are wired by genuine, qualified people, stating the fact that if houses are not wired properly accidents such as fires due to short circuits might occur.
II. How much the installation of power will cost?
III. What would happen if compensation is delayed and if there is a grace period given for how long a person should take to build a new house?

ANSWER

ZESCO responded by explaining that ZESCO's responsibility in connecting customers to electricity ends at the metering point. However, before making a new electricity connection, ZESCO does conduct a thorough inspection on the premises to be connected in order to ensure that it meets the acceptable wiring standards for the safety of the people and the property itself. **ZESCO** implored the people present to use qualified electricians in the wiring of their premises in order not to compromise their safety and that of their property.

In answering the second question, **ZESCO** responded by informing the meeting that this is an important project of national economic importance as Government recognizes the importance of rural electrification as a key to enhance growth and socio-economic development and thereby contribute greatly in poverty reduction. He further informed the meeting that the total cost of the project is estimated at US$25 Million.

Finally, **ZESCO** explained that no affected person/s shall be asked to relocate before compensation is made and that the grace period is only agreed upon once compensation is fully effected. The grace period may range from 3 to 6 months depending on the nature of the project and the affected assets. Further ZESCO emphasised no relocation is done during the rain season.

QUESTION

wanted to find out if an individual who wants to have access to power will have to buy the cables required for the connections themselves as well as pay the installer.

ANSWER

ZESCO answered by stating that when a customer applies for new electricity connection, ZESCO shall assess the total cost of the new connection, taking into consideration the cost of materials and other associated costs, the customer to be connected only pay a small percentage of non-refundable fee which is referred to as 'Capital Contribution'. ZESCO further added by informing the meeting that upon payment of the capital contribution, ZESCO provides the service cable, and any other associated connection materials that runs from the electric pole to the distribution box. However, the cost of wiring the premises is totally incurred by the respective customer.

QUESTIONS

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I. If the charges for having ones house wired will be based on their house's distance from the line.
II. If he should wait for the new line to be constructed in order to apply for power or he can still get power from the already existing line.

ANSWER

ZESCO responded by explaining that under normal circumstances, the distance between the premises to be connected and the source of connection does play a major role in quantity of material to be used in the new connection undertaking. The longer the distance, the more the material to be used and subsequently the higher the total cost of connection.

However, ZESCO added that, the Government with other collaborating partners such as the World Bank through has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, ZESCO explained that the total cost of connection can be shared by the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

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ZESCO also informed the meeting that the project was government-driven and so the exact time when construction works would commence cannot be stated now but however the meeting being held signifies the actual commencement. ZESCO further encouraged and many others to go ahead and apply for power supply from the existing supply lines.

QUESTION

asked the ZESCO team what would be done if cemeteries were found within the proposed route.

ANSWER

ZESCO answered by explaining that ZESCO has made it a mandate to avoid all grave yards, shrines and any other areas of social or cultural importance to the people hence the involvement of the local people so that they can guide ZESCO on the location of such areas. However, in a case where a grave yard, un-knowingly, is found within the proposed route, the line will have to be re-surveyed in order not to disturb the grave yard which must respected in our rich Zambian culture.

QUESTION

wanted to know if more than one kiosk can be connected to a single meter.

ANSWER

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QUESTION

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ANSWER

ZESCO responded by informing that despite having an existing line, Mungwi was experiencing power deficit as can be evidenced by low voltages especially during peak periods and so the new line would reinforce the power supply to the area which will bring about safe and improved reliability of electricity.

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ANSWER

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ZESCO further emphasised that as the project will affect many villages, the people will be employed according to their respective areas in order to ensure that as many people as possible benefit from the project.

6.0 CLOSING REMARKS

thanked the ZESCO team for their visit and urged everyone present to disseminate the information to those that did not attend the meeting, after which he closed the meeting at 11:20hours.

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CHAIRPERSON

DATE.....

.....K. mbaye

SECRETARY

DATE.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
22 JUL 2014
P.O. BOX 50,
MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE – KAYAMBI 132 KV TRANSMISSION LINE PROJECT HELD AT THE MUNGWI DISTRICT'S COUNCIL CHAMBER IN MUNGWI DISTRICT ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	POSITION/ORGANISATION	CONTACT NO.
1		Branch Manager ZESCO **(Chairperson)**	
2		Procurement Officer - Health	
3		Office Assistance DC's Office	
4		Planner- Health	
5		Party Official-PF	
6		S.D.A Church Represanative	
7		Nurse-Mungwi Health	
8		Council	
9		Teacher(Labour Union)	
10		Enterpreneur	
11		District Stakeholder Committee	
12		HeadMan	
13		Pastor(Pastors Fellowship)	
14		Mulondolwa Jatropha	
15		ZANAPA	
16		Mungwi Court	
17		District Manager-Chambeshi Water	
18		Head Teacher-Musenga	

19		Deputy Treasurer MDC	
20		Committee Member-Mungwi Market	
21		Forestry	
22		Deputy Planner-Council	
23		ESO-ED	
24		MOH	
25		PeaceCoarp-Education	
26		Head Woman	
27		District Planner-Mungwi Council	
28		District Commissioner(DC)	
29		ZESCO-Ndola-ESD	
30		ZESCO-Ndola-ESD	
31		ZESCO-Ndola-ESD	
32		ZESCO-Ndola-ESD	
33		ZESCO-Ndola-ESD	
34		ZESCO-Ndola -ESD **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 14:56 hours with an opening prayer fro one of the participants. The Chairperson, **ZESCO Branch Manager,** I , introduced himself and further requested participants to introduce thems lves before proceeding into the deliberations of the meeting.

The Chairperson informed the meeting that there was a team from dola ZESCO working on a project called Kasama – Mungwi - Malole –Kayambi 132 kil Volts (kV) transmission line project. He told the meeting that Mungwi District has been facing challenges of insufficient electricity supply, hence the need for the new p oject which will boost power supply in Mungwi and the surrounding areas. The chairp rson further requested the ZESCO team from Ndola to explain the reason for the me ting to the people of Mungwi Central Business District community and other surroun ing villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO started by explaining that the purpose of the meeting was to gi e a project brief to the stakeholders and get their contributions and concerns on vario s aspects of the project and help in the implementation of the project. ZESCO further st ted that the objective of the project was to address the challenges of electricity suppl in Mwingu District and Northern Province as a whole. ZESCO explained that th quality of electricity supply in the Northern Province has over the years becom very poor because the current 66kV line from Kasama which also feeds Mungwi, a ong many other areas has been out-stripped by overwhelmingly increased demand f r electricity services hence resulting in areas experiencing very low voltage resulting int conducting of load shedding. He further added that ZESCO has embarked on other proj cts such as the construction of the proposed Pensulo-Kasama 330kV transmissi n line and upgrading and rehabilitation of Chishimba falls Power Station, Itezhi-Tezh 330kV and Kafue George lower 330kV transmission line projects in order to enhance r liability and sufficient electricity supply in the Northern area and the country as a whole.

The Kasama – Mungwi – Malole – Kayambi 132kV transmission line will be apped from the new 330/132/66kV substation to be constructed in Kasama 's Brown fula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line wil initially run parallel with the existing Mpika – Kasama 66kV transmission line and will ass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO furthe added that this project is in line with and aims at achieving the objectives o the Rural

Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community and relevant stakeholders on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, the floor was opened for questions contributions.

QUESTION

wanted to know when the project is likely to commence.

ANSWER

ZESCO in response explained that the project had started and the scoping meeting was part of the process. In addition, the meeting was informed that survey works had stated.

QUESTION

wanted to know the construction period of the power line and if the budget of the affected parties had been done. Additionally, he wanted to find out if the tentative list of the affected people had been done since survey works had already started.

ANSWER

ZESCO explained that the purpose of the survey was to find a route for the power line and it's from the route-survey where the affected people by the project shall be identified. He told the meeting that an independent registered valuer shall be engaged to value the affected structures. Furthermore, it was stated that if fruit trees or crops shall be affected, ZESCO shall engage the services of the Ministry of Agriculture though the District Agriculture Coordinator's office to carry out an assessment of the affected fruit trees and crops and attach value to them the basis on which compensation shall be effected.

QUESTION

was interested in knowing whether ZESCO was working in collaboration with roads department considering the fact that roads become impassable during rainy season in Mungwi District particularly the Chimba – Makasa – Kayambi Road. He was concerned that the contractor might face some challenges in the transportation of construction materials.

ANSWER

ZESCO in response told the meeting that access roads to the project site areas would certainly need to worked on in order to allow for the smooth movement of project materials. In addition, the Government of the Republic of Zambia, the Road Development Agency (RDA), has also got it's programmes aimed improving the road infrastructure.

QUESTION

was trying to find out what would happen to rivers located in the line corridor.

ANSWER

ZESCO explained that prudent steps are taken during conducting of the detailed survey to ensure that river sources are not disturbed in all project work. The meeting was also informed that measures are put in place when crossing water bodies such as rivers and lakes in order to avoid putting such important natural resources.

QUESTION

was interested to know if ZESCO will employ som technicians and electricians from Mungwi during the construction of the power line. econdly, he was asking when the prepaid meters will be installed in Mungwi town.

ANSWER

In response, **ZESCO** explained that when it comes to employment in the roject area, local people are given first priority especially where semi-skilled a d unskilled manpower is concerned; outside labour may disturb the social set up in the project area.

Further, ZESCO added that the installation of prepaid meters in an ongoing project and soon that later the project might be rolled out in Mungwi District.

QUESTION

wanted to know whether ZESCO will do the co struction of the line or it will engage a contractor.

ANSWER

ZESCO in response explained that ZESCO will use a Contractor and that here will be tender procedures that will need to be followed as stipulated by the .aws of the Country.

QUESTION

was interested to know the methods ZESCO w s using to disseminate information to the people in the project area and if ZESCO i formed the people that they should be 50m way from the proposed line.

ANSWER

In answering the question, **ZESCO** explained that the meeting in the Ch mber was a fourth scoping meeting to be conducted in the project area. He further mentioned that stakeholders such as traditional leaders, Local Council Authorities, overnment Departments, Non-governmental Organisation and Councillors were ngaged to

disseminate the information in the villages and local languages were used during the meeting and interpretations done where necessary. It was further added that strategic stakeholder identification is done in order to fine tune the channel of communication as in the case of communicating yo government heads of departments, the Office of the District Commissioner is engaged and for the stakeholders in villages traditional leaders are engaged and this system has worked out very well.

COMMENT

expressed concern that most developers who carryout projects in Mungwi usually do not share with the local authorities the information they gather in the project area for their reports. He advised ZESCO to send a copy of an EIA to the Mungwi Council once it's done and approved by ZEMA.

6.0 CLOSING REMARKS

The Chairperson thanked everyone who attended the meeting. He further mentioned that the project came at the right time when development was needed in Mungwi. He added that the project was welcome and people of Mungwi shall support it.

The meeting was closed at 16:00 hours with a closing prayer from

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CHAIRPERSON

DATE.....15/11/12.....

.....

SECRETARY

DATE.....15/11/12.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE - KAYAMBIKV TRANSMISSION LINE PROJECT HELD AT MAKASA CATHOLIC CHURCH ON 3rd OCTOBER, 2012.

1.0 PRESENT

No.	NAME	OCCUPATION/ORGANISATION
1		Ward Councilor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Farmer
11		Farmer
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Farmer
17		Farmer
18		Farmer
19		Farmer
20		Farmer
21		Farmer
22		Farmer
23		Farmer
24		Farmer
25		Farmer
26		Farmer
27		Farmer
28		Farmer
29		Farmer
30		Farmer/V. Headman
31		Farmer
32		Farmer
33		Farmer

34		Farmer
35		Peasant Farmer
36		Peasant Farmer
37		Pastor
38		Farmer
39		Farmer
40		Farmer
41		Farmer
42		Farmer
43		Farmer
44		Farmer
45		Farmer
46		Barber Man
47		Barber Man
48		
49		
50		Barber Man
51		Brick layer
52		Brick layer
53		
54		
55		
56		
57		
58		
59		
60		
61		ZESCO – Lusaka
62		ZESCO – Ndola
63		ZESCO – Ndola
64		ZESCO – Ndola
65		ZESCO – Ndola
66		ZESCO – Ndola **(Secretary)**

2.0 AGENDA

- Prayer
- Opening Remarks
- Presentation of the project
- Questions and Comments
- Closing Remarks

3.0 OPENING REMARKS

The Chairperson, , called the meeting to order at 11:50hours after a prayer and welcomed everyone present. He then requested the ZESCO team to introduce its members.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

ZESCO mentioned that ZESCO had already paid a courtesy on Chief Makasa with the aim of explaining to His Royal Highness the proposed electrification project and getting permission to implement the same in his chiefdom. ZESCO further requested for cooperation and support from the people of Makasa Village and surrounding areas.

5.0 QUESTION AND ANSWERS

QUESTION

asked what kind of support ZESCO needed from the local people.

ANSWER

ZESCO responded by explaining that the electrification project was of great social and economic importance to the people of Makasa and surrounding areas. It was added that the Government of the Republic of Zambia has placed a very high premium on growth-stimulating interventions such as this proposed electrification project in Mungwi District which will, undoubtedly, greatly contribute to poverty reduction in the area. ZESCO further pointed out that access to clean, reliable and affordable electricity is fundamental to daily life and any level of socio-economic development.

ZESCO further stated that such a project to be fully implemented and bear its intended fruits, there is need for support from the local people just like the support given through attendance of the scoping meeting and by way of safeguarding of this important infrastructure and not engage in vices such theft and vandalism.

QUESTION

asked if the map for the proposed power line route was available for everyone.

ANSWER

ZESCO answered with an explanation that the map was not yet ready but once the survey works are done and concluded, then the line route for the proposed power line will be produced and shall certainly be made available through His Royal Highness Chief Makasa, respective village headmen and any other relevant local leadership.

QUESTION

wanted to know other places that will be electrified apart from Makasa.

ANSWER

ZESCO answered with an explanation that the proposed electrification project was an ambitious programme which will be implemented in line with the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratios in the rural areas from the current 3% to 51% by the year 2030.

As mentioned earlier, ZESCO added, the power line will take off from the new 330/132/66kV substation to be constructed in Kasama through Mungwi and Malole up to Kayambi and this indeed therefore means that there other places that will be electrified apart from Makasa among which include Mungwi District areas of Kayambi Mission, Mbesuma Ranch and other selected settlements in the Chambeshi Basin.

QUESTION

asked if the electricity tariffs will be the same as these charged in town.

ANSWER

ZESCO responded by informing the meeting that electricity tariff charges are uniform throughout the country regardless of the place or area one may be. It was further stated that people living in Kafue Gorge or Kariba, where electricity is generated, pay the same tariff charges as anyone else around Zambia.

QUESTION

asked when the works will commence.

ANSWER

ZESCO responded that the project has already started but as ZESCO we have to follow right procedures according to the legal requirements of the country such as the Zambia Environmental Management Agency (ZEMA)'s environmental regulations. It was added that actual construction works would commence soon after project approval by ZEMA.

QUESTION

wanted to know what criteria, ZESCO uses to employ people during such projects.

ANSWER

ZESCO answered by explaining that employment shall be done through consultations with the local leadership. It emphasised added that it is ZESCO's desire that as many

people, especially the youths, benefit from the project. There are many categories of works to be done such as bush clearing, digging of holes, construction of access roads to mention a few. Therefore different people shall be employed at different stages of the project.

COMMENT

was delighted to know that ZESCO was aware of the problem that Mungwi District is facing. In order for the town to attract investment in tourism and other sectors of the economy, it required electricity. He therefore, urged ZESCO to expedite the projects as soon as possible.

COMMENT

recommended ZESCO for the project because it would improve the livelihood of the people of Makasa, and assured ZESCO of full support. He further recommended ZESCO for the jobs that will be created during the project to the local people.

6.0 CLOSING REMARKS

The chairperson thanked the visiting team and the local participants for their time and attention during the meeting. A prayer was given by one of the participants and the meeting officially closed at 12.40hrs.

.....

Chairperson

Date.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
P.O. BOX 50,
MUNGWI

.....

Secretary

Date.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI - MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT CHIMBA BASIC SCHOOL IN MUNGWI ON 14TH NOVEMBER, 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISATION
1		Head-Teacher **(Chairperson)**
2		Teacher
3		Teacher
4		Teacher
5		Teacher
6		Teacher
7		Peasant farmer
8		Peasant farmer
9		Peasant farmer
10		Peasant farmer
11		
12		Peasant farmer
13		Peasant farmer
14		Peasant farmer
15		Agricultural assistant
16		Business man
17		
18		Business man
19		Peasant farmer
20		Peasant farmer
21		Peasant farmer
22		Teacher-Head (Chairperson)
23		Teacher-Deputy Head
24		Headman Masembe
25		Sub Chief Chimba
26		Head man Chasenama
27		Teacher
28		Business man
29		Business woman
30		Peasant farmer
31		
32		Peasant farmer

33		Peasant farmer
34		Peasant farmer
35		Peasant farmer
36		Peasant farmer
37		Peasant farmer
38		Peasant farmer
39		Business man
40		Peasant farmer
41		Peasant farmer
42		Peasant farmer
43		Peasant farmer
44		Peasant farmer
45		Peasant farmer
46		
47		Peasant farmer
48		Peasant farmer
49		ZESCO-Ndola
50		ZESCO-Ndola
51		ZESCO-Ndola
52		ZESCO-Ndola **(Secretary)**

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENNING REMARKS

The chairperson also Head teacher of Chimba basic school opened the meeting at 14:20 and requested one of the attendants to pray. The prayer was given by The chairperson proceeded into introduction of the distinguished guests present, the acting Chief Chitimukulu; Sub-Chief Chimba and his entourage from the Bashilubemba Royal Establishment and the ZESCO team themselves respectively. The chairperson further requested the ZESCO team to explain the reason for the meeting to the delegates of chimba community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will be tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO further added that this project is in line with and aims at achieving the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise to be carried out before the implementation of a project. This is to emphasise the importance of stakeholder or community participation at all stages of project implementation. **ZESCO** informed the meeting that it is through this process that possible impacts are identified and recommend mitigation measures for the purpose of minimizing or eliminating the anticipated negative impacts of the project.

In addition, **ZESCO** also explained that if there are any environmental or social concerns regarding the projects that stakeholders want considered, the time to raise such concerns is at this important meeting.

Further, **ZESCO** explained that the power line to be constructed will be a very high voltage transmission line and therefore no structures will be permitted to be built under this line. This therefore means that, for safety reasons, people are not allowed to settle within the cleared area under the power line's Right of Way (wayleave). **ZESCO** further stated that in selecting the most suitable route for the power line, ZESCO shall ensure that settlements are avoided by all means. This shall be done as a safety precaution for the people and their properties but most importantly, in order not to disturb settlements unnecessarily.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, **ZESCO** invited questions/comments and observations from the participants over the project.

QUESTION

wanted to find out, how ZESCO will compensate the community if the line passes through a school?

ANSWER

ZESCO answered by stating that the Corporation does always endeavor not to disturb any settlements and cause unnecessary displacement of people in undertaking all its projects. Therefore, in the selection of the line route for the project, surveyors shall make sure that no settlements or properties, both private or public, are affected unnecessarily, but in cases where it is found that no alternative route can be found, the affected person/s would be engaged and consents obtained. **It was** further stated that after obtaining the consent, ZESCO does engage the services of an independent registered property valuer to assess the value of the affected assets and attach monetary value to them. Based on the monetary value in the valuer's report, ZESCO would then enter into a mutual agreement with the affected person/s for compensation. After compensation is paid out the affected individual/s is requested to relocate, given a grace period of say 3 to 6 months depending on the nature of the project and the affected assets. Relocation will, however, not be done in the rain season.

QUESTION

wanted to know whether the power line will be able to benefit the household consumer.

ANSWER

ZESCO in response explained that the main objective of the project is that of increased access to clean and reliable electricity for household, commercial and industrial needs in Mungwi District and surrounding areas. And further it was explained that though the 132kV line is a high voltage transmission line, it will be stepped down to 33kV and 11kV line for distribution and finally to medium voltage (400v) for supply to households. In addition, the Rural Electrification Authority will also be able to carry out its rural electrification projects in Mungwi District and surrounding areas through this same project.

QUESTION

asked when the project will start.

ANSWER

ZESCO responded by explaining that the stakeholder involvement through the scoping meeting being held signified the beginning of the project. **ZESCO** further stated that the records of the meeting (minutes) forms part of the final report to be presented to the Zambia Environmental Management Agency (ZEMA) for project approval and once approved, the actual construction works of the 132kV transmission line would then commence. As stakeholders, you will be informed at each and every stage of the project implementation as part of continuous stakeholder engagement, **ZESCO** added.

QUESTION

wanted to know whether ZESCO will take power to Chimbola village, located a few kilometers from Chimba.

ANSWER

ZESCO in reply explained that the project is an important one as it will form a backbone for rural electrification projects in Mungwi District and surrounding areas as alluded to earlier. Further ZESCO added that in the Rural Electrification Master Plan, there are a good number of villages in Mungwi which are referred to as Rural Growth Centres (RGCs) that are earmarked to benefit from the project.

QUESTION

wanted to find out who will be responsible for power distribution to the local consumer (households).

ANSWER

ZESCO explained that the Corporation will be responsible for connecting customers to electricity but customers will need to pay for the new installation of electricity to their premises.

ZESCO also added that, the Government with other collaborating partners such as the World Bank, through ZESCO, has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among

other factors, by indiscriminate cutting down of trees for firewood and charc al burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, **ZESCO** explained that the total cost of conne ion can be by shared the number of new customers in a given settlement requirin electricity supply services. Each member pays an equal amount towards the tot l cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy Programme

In the subsidy programme, **ZESCO** informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increase access to electricity services is being promoted by a way of subsidizing the conne ion fees as new customers are only required to pay **K150,000.00** as the case in Chit ukulu and surrounding areas.

QUESTION

(teacher) wanted to know, referring to the electrific tion of the school, who will be responsible for the wiring and connection of teacher's c pound.

ANSWER

ZESCO, in response explained that the electrification under discus ion was a Government driven project and therefore, Government will ensure that all overnment institutions in the identified RGCs are connected to electricity and this incl des, among others, Rural Health Centres and Schools.

COMMENDATION

commended government through ZESCO over the power reinforcement and power supply to Mungwi district that will benefit the people and foster development in the long run.

COMMENDATION

commended ZESCO for the gesture tha will see the unemployed youths get employed during the project life cycle.

SUGGESTION

suggested that the chief should provide land where the affected people will be relocated to.

ANSWER

ZESCO acknowledged the suggestion by stressing that the influence of Chiefs is cardinal for successful implementation of any developmental project. To this effect, **He** further added that courtesy visits have been made to the Royal Highnesses in Mungwi and surrounding areas. **ZESCO** further mentioned that the Royal Highnesses, Acting Paramount Chief Chitimukulu, Senior Chief Mwamba, Chief Makasa and Sub-Chief Mutale Mukulu were among the Chiefs visited for the purpose of explaining the project to them getting their consents and support in order to successfully carry out project works in their respective chiefdoms.

ZESCO further clarified that unlike a mining project, the 132kV electrification project was a linear one and therefore affected people, if any, will not be required to relocate far away from their current settlement areas. **ZESCO** also added that the affected people will only move a few meters away from the wayleave to be proposed after detailed survey is carried out.

QUESTION

wanted to know how the employment process will be conducted since most villages are close to each other.

ANSWER

ZESCO responded that the Corporation will always seek the help of the local leadership in the recruitment of workers. This is because they are the ones who know the boundaries of the villages and the demography of a given village.

6.0 CLOSING REMARKS

(Chairperson) requested the Acting Chitimukulu Sub chief Chimba to address the audience, the acting Chitimukulu in his speech explained that the people of Chimba Village and other surrounding villages feel neglected, citing challenges being faced in the area such as poor road network that are impassable during rainy season and lack of electricity supply in the area. However, he said the electrification of Chimba, Makasa, Kayambi and other areas will be a milestone in the

history of the Bembaland. He therefore, commended ZESCO and wished the company well in their future endeavours.

ZESCO thanked the people of Chimba village and the surrounding villages for their audience and contributions. Furthermore, ZESCO assured the people present that all their concerns have been noted.

In his closing remarks, the chairperson thanked all the people present for their participation. He further requested any of the participants to close in a word of prayer. The prayer was given by . Following the closing prayer, the chairperson declared the meeting closed at exactly 15:15 hours.

.....

CHAIRPERSON

DATE.....14 - 11 - 2012.....

.....

SECRETARY

DATE.....14 - 11 - 12.....

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION, SCIENCE,
VOCATIONAL TRAINING & EARLY EDUCATION
14 NOV 2012
OFFICE OF THE HEADTEACHER
CHIMBA BASIC SCHOOL
P O BOX 48 - MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI - MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT CHIMBA BASIC SCHOOL IN MUNGWI ON 14TH NOVEMBER, 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISATION
1		Head-Teacher **(Chairperson)**
2		Teacher
3		Teacher
4		Teacher
5		Teacher
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8		Peasant farmer
9		Peasant farmer
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50		ZESCO-Ndola
51		ZESCO-Ndola
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2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENNING REMARKS

The chairperson | also Head teacher of Chimba basic school opened the meeting at 14:20 and requested one of the attendants to pray. The prayer was given by The chairperson proceeded into introduction of the distinguished guests present, the acting Chief Chitimukulu; Sub-Chief Chimba and his entourage from the Bashilubemba Royal Establishment and the ZESCO team themselves respectively. The chairperson further requested the ZESCO team to explain the reason for the meeting to the delegates of chimba community and other surrounding villages that were present.

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ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise to be carried out before the implementation of a project. This is to emphasise the importance of stakeholder or community participation at all stages of project implementation. **ZESCO** informed the meeting that it is through this process that possible impacts are identified and recommend mitigation measures for the purpose of minimizing or eliminating the anticipated negative impacts of the project.

In addition, **ZESCO** also explained that if there are any environmental or social concerns regarding the projects that stakeholders want considered, the time to raise such concerns is at this important meeting.

Further, **ZESCO** explained that the power line to be constructed will be a very high voltage transmission line and therefore no structures will be permitted to be built under this line. This therefore means that, for safety reasons, people are not allowed to settle within the cleared area under the power line's Right of Way (wayleave). **ZESCO** further stated that in selecting the most suitable route for the power line, ZESCO shall ensure that settlements are avoided by all means. This shall be done as a safety precaution for the people and their properties but most importantly, in order not to disturb settlements unnecessarily.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, **ZESCO** invited questions/comments and observations from the participants over the project.

QUESTION

wanted to find out, how ZESCO will compensate the community if the line passes through a school?

ANSWER

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ANSWER

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QUESTION

asked when the project will start.

ANSWER

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QUESTION

wanted to know whether ZESCO will take power to Chimbola village, located a few kilometers from Chimba.

ANSWER

ZESCO in reply explained that the project is an important one as it will form a backbone for rural electrification projects in Mungwi District and surrounding areas as alluded to earlier. Further ZESCO added that in the Rural Electrification Master Plan, there are a good number of villages in Mungwi which are referred to as Rural Growth Centres (RGCs) that are earmarked to benefit from the project.

QUESTION

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ANSWER

ZESCO explained that the Corporation will be responsible for connecting customers to electricity but customers will need to pay for the new installation of electricity to their premises.

ZESCO also added that, the Government with other collaborating partners such as the World Bank, through ZESCO, has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among

other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

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Under the scheme incentive, **ZESCO** explained that the total cost of connection can be by shared the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

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In the subsidy programme, **ZESCO** informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay **K150,000.00** as the case in Chitimukulu and surrounding areas.

QUESTION

wanted to know, referring to the electrification of the school, who will be responsible for the wiring and connection of teacher's compound.

ANSWER

ZESCO, in response explained that the electrification under discussion was a Government driven project and therefore, Government will ensure that all Government institutions in the identified RGCs are connected to electricity and this includes, among others, Rural Health Centres and Schools.

COMMENDATION

commended government through ZESCO over the power reinforcement and power supply to Mungwi district that will benefit the people and foster development in the long run.

COMMENDATION

commended ZESCO for the gesture that will see the unemployed youths get employed during the project life cycle.

SUGGESTION

suggested that the chief should provide land where t e affected people will be relocated to.

ANSWER

ZESCO acknowledged the suggestion by stressing that the influence o Chiefs is cardinal for successful implementation of any developmental project. To this effect, **He** further added that courtesy visits have been made to the Royal Highnesses in Mungwi and surrounding areas. **ZESCO** further mentioned that the Royal Highne s, Acting Paramount Chief Chitimukulu, Senior Chief Mwamba, Chief Makasa an Sub-Chief Mutale Mukulu were among the Chiefs visited for the purpose of explaining the project to them getting their consents and support in order to successfully carry ut project works in their respective chiefdoms.

ZESCO further clarified that unlike a mining project, the 132kV electrifica on project was a linear one and therefore affected people, if any, will not be required to relocate far away from their current settlement areas. **ZESCO** also added that e affected people will only move a few meters away from the wayleave to be pro osed after detailed survey is carried out.

QUESTION

wanted to know how the employment process will conducted since most villages are close to each other.

ANSWER

ZESCO responded that the Corporation will always seek the help f the local leadership in the recruitment of workers. This is because they are the one who know the boundaries of the villages and the demography of a given village.

6.0 CLOSING REMARKS

Chairperson) requested the Acting Chitimuku u Sub chief Chimba to address the audience, the acting Chitimukulu in his speech e plained that the people of Chimba Village and other surrounding villages feel negl ed, citing challenges being faced in the area such as poor road network that ar impassable during rainy season and lack of electricity supply in the area. However, he said the electrification of Chimba, Makasa, Kayambi and other areas will be a mil stone in the

history of the Bembaland. He therefore, commended ZESCO and wished the company well in their future endeavours.

ZESCO thanked the people of Chimba village and the surrounding villages for their audience and contributions. Furthermore, ZESCO assured the people present that all their concerns have been noted.

In his closing remarks, the chairperson thanked all the people present for their participation. He further requested any of the participants to close in a word of prayer. The prayer was given by . Following the closing prayer, the chairperson declared the meeting closed at exactly 15:15 hours.

.....

CHAIRPERSON

DATE.....14 - 11 - 2012.....

.....

SECRETARY

DATE.....14 - 11 - 2012.....

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION, SCIENCE,
VOCATIONAL TRAINING & EARLY EDUCATION
14 NOV 2012
OFFICE OF THE HEADTEACHER
CHIMBA BASIC SCHOOL
P.O BOX 48 - MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE - KAYAMBIKV TRANSMISSION LINE PROJECT HELD AT MAKASA CATHOLIC CHURCH ON 3rd OCTOBER, 2012.

1.0 PRESENT

No.	NAME	OCCUPATION/ORGANISATION
1		Ward Councilor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Farmer
11		Farmer
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Farmer
17		Farmer
18		Farmer
19		Farmer
20		Farmer
21		Farmer
22		Farmer
23		Farmer
24		Farmer
25		Farmer
26		Farmer
27		Farmer
28		Farmer
29		Farmer
30		Farmer/V. Headman
31		Farmer
32		Farmer
33		Farmer

34		Farmer
35		Peasant Farmer
36		Peasant Farmer
37		Pastor
38		Farmer
39		Farmer
40		Farmer
41		Farmer
42		Farmer
43		Farmer
44		Farmer
45		Farmer
46		Barber Man
47		Barber Man
48		
49		
50		Barber Man
51		Brick layer
52		Brick layer
53		
54		
55		
56		
57		
58		
59		
60		
61		ZESCO – Lusaka
62		ZESCO – Ndola
63		ZESCO – Ndola
64		ZESCO – Ndola
65		ZESCO – Ndola
66		ZESCO – Ndola **(Secretary)**

2.0 AGENDA

- Prayer
- Opening Remarks
- Presentation of the project
- Questions and Comments
- Closing Remarks

3.0 OPENING REMARKS

The Chairperson, , called the meeting to order at 11:50hours after a prayer and welcomed everyone present. He then requested the ZESCO team to introduce its members.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

ZESCO mentioned that ZESCO had already paid a courtesy on Chief Makasa with the aim of explaining to His Royal Highness the proposed electrification project and getting permission to implement the same in his chiefdom. ZESCO further requested for cooperation and support from the people of Makasa Village and surrounding areas.

5.0 QUESTION AND ANSWERS

QUESTION

asked what kind of support ZESCO needed from the local people.

ANSWER

ZESCO responded by explaining that the electrification project was of great social and economic importance to the people of Makasa and surrounding areas. It was added that the Government of the Republic of Zambia has placed a very high premium on growth-stimulating interventions such as this proposed electrification project in Mungwi District which will, undoubtedly, greatly contribute to poverty reduction in the area. ZESCO further pointed out that access to clean, reliable and affordable electricity is fundamental to daily life and any level of socio-economic development.

ZESCO further stated that such a project to be fully implemented and bear its intended fruits, there is need for support from the local people just like the support given through attendance of the scoping meeting and by way of safeguarding of this important infrastructure and not engage in vices such theft and vandalism.

QUESTION

asked if the map for the proposed power line route was available for everyone.

ANSWER

ZESCO answered with an explanation that the map was not yet ready but once the survey works are done and concluded, then the line route for the proposed power line will be produced and shall certainly be made available through His Royal Highness Chief Makasa, respective village headmen and any other relevant local leadership.

QUESTION

wanted to know other places that will be electrified apart from Makasa.

ANSWER

ZESCO answered with an explanation that the proposed electrification project was an ambitious programme which will be implemented in line with the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratios in the rural areas from the current 3% to 51% by the year 2030.

As mentioned earlier, ZESCO added, the power line will take off from the new 330/132/66kV substation to be constructed in Kasama through Mungwi and Malole up to Kayambi and this indeed therefore means that there other places that will be electrified apart from Makasa among which include Mungwi District areas of Kayambi Mission, Mbesuma Ranch and other selected settlements in the Chambeshi Basin.

QUESTION

asked if the electricity tariffs will be the same as these charged in town.

ANSWER

ZESCO responded by informing the meeting that electricity tariff charges are uniform throughout the country regardless of the place or area one may be. It was further stated that people living in Kafue Gorge or Kariba, where electricity is generated, pay the same tariff charges as anyone else around Zambia.

QUESTION

asked when the works will commence.

ANSWER

ZESCO responded that the project has already started but as ZESCO we have to follow right procedures according to the legal requirements of the country such as the Zambia Environmental Management Agency (ZEMA)'s environmental regulations. It was added that actual construction works would commence soon after project approval by ZEMA.

QUESTION

wanted to know what criteria, ZESCO uses to employ people during such projects.

ANSWER

ZESCO answered by explaining that employment shall be done through consultations with the local leadership. It emphasised added that it is ZESCO's desire that as many

people, especially the youths, benefit from the project. There are many categories of works to be done such as bush clearing, digging of holes, construction of access roads to mention a few. Therefore different people shall be employed at different stages of the project.

COMMENT

I was delighted to know that ZESCO was aware of the problem that Mungwi District is facing. In order for the town to attract investment in tourism and other sectors of the economy, it required electricity. He therefore, urged ZESCO to expedite the projects as soon as possible.

COMMENT

recommended ZESCO for the project because it would improve the livelihood of the people of Makasa, and assured ZESCO of full support. He further recommended ZESCO for the jobs that will be created during the project to the local people.

6.0 CLOSING REMARKS

The chairperson thanked the visiting team and the local participants for their time and attention during the meeting. A prayer was given by one of the participants and the meeting officially closed at 12.40hrs.

.....

Chairperson

Date.....22.....

.....M. Mbulo.....

Secretary

Date.....

MUNGWI DISTRICT COUNCIL
COUNCIL SECRETARY
P.O. BOX 50,
MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE – KAYAMBI 132 KV TRANSMISSION LINE PROJECT HELD AT THE MUNGWI DISTRICT'S COUNCIL CHAMBER IN MUNGWI DISTRICT ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	POSITION/ORGANISATION	CONTACT NO.
1		Branch Manager ZESCO **(Chairperson)**	
2		Procurement Officer - Health	
3		Office Assistance DC's Office	
4		Planner- Health	
5		Party Official-PF	
6		S.D.A Church Represanative	
7		Nurse-Mungwi Health	
8		Council	
9		Teacher(Labour Union)	
10		Enterpreneur	
11		District Stakeholder Committee	
12		HeadMan	
13		Pastor(Pastors Fellowship)	
14		Mulondolwa Jatropha	
15		ZANAPA	
16		Mungwi Court	
17		District Manager-Chambeshi Water	
18		Head Teacher-Musenga	
19		Deputy Treasurer MDC	

20	Committee Member-Mungwi Market	
21	Forestry	
22	Deputy Planner-Council	
23	ESO-ED	
24	MOH	
25	PeaceCoarp-Education	
26	Head Woman	
27	District Planner-Mungwi Council	
2	District Commissioner(DC)	
29	ZESCO-Ndola-ESD	
30	ZESCO-Ndola-ESD	
31	ZESCO-Ndola-ESD	
32	ZESCO-Ndola-ESD	
33	ZESCO-Ndola-ESD	
34	ZESCO-Ndola -ESD **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 14:56 hours with an opening prayer from one of the participants. The Chairperson, **ZESCO Branch Manager,** , introduced himself and further requested participants to introduce themselves before proceeding into the deliberations of the meeting.

The Chairperson informed the meeting that there was a team from Ndola ZESCO working on a project called Kasama – Mungwi - Malole –Kayambi 132 kilo Volts (kV) transmission line project. He told the meeting that Mungwi District has been facing challenges of insufficient electricity supply, hence the need for the new project which will boost power supply in Mungwi and the surrounding areas. The chairperson further requested the ZESCO team from Ndola to explain the reason for the meeting to the people of Mungwi Central Business District community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO started by explaining that the purpose of the meeting was to give a project brief to the stakeholders and get their contributions and concerns on various aspects of the project and help in the implementation of the project. ZESCO further stated that the objective of the project was to address the challenges of electricity supply in Mwingu District and Northern Province as a whole. ZESCO explained that the quality of electricity supply in the Northern Province has over the years become very poor because the current 66kV line from Kasama which also feeds Mungwi, among many other areas has been out-stripped by overwhelmingly increased demand for electricity services hence resulting in areas experiencing very low voltage resulting into conducting of load shedding. He further added that ZESCO has embarked on other projects such as the construction of the proposed Pensulo-Kasama 330kV transmission line and upgrading and rehabilitation of Chishimba falls Power Station, Itezhi-Tezhi 330kV and Kafue George lower 330kV transmission line projects in order to enhance reliability and sufficient electricity supply in the Northern area and the country as a whole.

The Kasama – Mungwi – Malole – Kayambi 132kV transmission line will be tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO further added that this project is in line with and aims at achieving the objectives of the Rural

Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community and relevant stakeholders on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, the floor was opened for questions contributions.

QUESTION

wanted to know when the project is likely to commence.

ANSWER

ZESCO in response explained that the project had started and the scoping meeting was part of the process. In addition, the meeting was informed that survey works had stated.

QUESTION

wanted to know the construction period of the power line and if the budget of the affected parties had been done. Additionally, he wanted to find out if the tentative list of the affected people had been done since survey works had already started.

ANSWER

ZESCO explained that the purpose of the survey was to find a route for the p wer line and it's from the route-survey where the affected people by the project hall be identified. He told the meeting that an independent registered valuer shall be engaged to value the affected structures. Furthermore, it was stated that if fruit trees r crops shall be affected, ZESCO shall engage the services of the Ministry of Agricultur though the District Agriculture Coordinator's office to carry out an assessment of the affected fruit trees and crops and attach value to them the basis on which compensatio shall be effected.

QUESTION

was interested in knowing whether ZESCO was w rking in collaboration with roads department considering the fact that roads become im assable during rainy season in Mungwi District particularly the Chimba – Makasa – ayambi Road. He was concerned that the contractor might face some challenge in the transportation of construction materials.

ANSWER

ZESCO in response told the meeting that access roads to the project site are s would certainly need to worked on in order to allow for the smooth movement o project materials. In addition, the Government of the Republic of Zambia, t e Road Development Agency (RDA), has also got it's programmes aimed improving e road infrastructure.

QUESTION

was trying to find out what would happen to rivers l cated in the line corridor.

ANSWER

ZESCO explained that prudent steps are taken during conducting of the detail d survey to ensure that river sources are not disturbed in all project work. The meeting was also informed that measures are put in place when crossing water bodies such as vers and lakes in order to avoid putting such important natural resources.

QUESTION

was interested to know if ZESCO will employ some technicians and electricians from Mungwi during the construction of the power line. Secondly, he was asking when the prepaid meters will be installed in Mungwi town.

ANSWER

In response, **ZESCO** explained that when it comes to employment in the project area, local people are given first priority especially where semi-skilled and unskilled manpower is concerned; outside labour may disturb the social set up in the project area.

Further, ZESCO added that the installation of prepaid meters in an ongoing project and soon that later the project might be rolled out in Mungwi District.

QUESTION

wanted to know whether ZESCO will do the construction of the line or it will engage a contractor.

ANSWER

ZESCO in response explained that ZESCO will use a Contractor and that there will be tender procedures that will need to be followed as stipulated by the Laws of the Country.

QUESTION

was interested to know the methods ZESCO was using to disseminate information to the people in the project area and if ZESCO informed the people that they should be 50m way from the proposed line.

ANSWER

In answering the question, **ZESCO** explained that the meeting in the Chamber was a fourth scoping meeting to be conducted in the project area. He further mentioned that stakeholders such as traditional leaders, Local Council Authorities, Government Departments, Non-governmental Organisation and Councillors were engaged to disseminate the information in the villages and local languages were used during the

meeting and interpretations done where necessary. It was further added that strategic stakeholder identification is done in order to fine tune the channel of communication as in the case of communicating yo government heads of departments, the Office of the District Commissioner is engaged and for the stakeholders in villages traditional leaders are engaged and this system has worked out very well.

COMMENT

expressed concern that most developers who carryout projects in Mungwi usually do not share with the local authorities the information they gather in the project area for their reports. He advised ZESCO to send a copy of an EIA to the Mungwi Council once it's done and approved by ZEMA.

6.0 CLOSING REMARKS

The Chairperson thanked everyone who attended the meeting. He further mentioned that the project came at the right time when development was needed in Mungwi. He added that the project was welcome and people of Mungwi shall support it.

The meeting was closed at 16:00 hours with a closing prayer

.....
CHAIRPERSON

DATE.....15/11/12.....

.....
SECRETARY

DATE.....15/11/12.....

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA - MUNGWI – MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT ST. JOHN'S SECONDARY SCHOOL IN MALOLE ON 15TH NOVEMBER 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISTATION
1		Area Councillor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Crafts
11		Crafts
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Business woman

17		Farmer	
18		Farmer/ Headman	
19		Headman	
20		Farmer	
21		Teacher	
22		Farmer	
23		Farmer	
24		Farmer	
25		Farmer	
26		Farmer	
27		ZESCO LTD-Ndola	
28		ZESCO LTD-Ndola	
28		ZESCO LTD-Ndola	
30		ZESCO LTD-Ndola	
31		ZESCO LTD-Ndola	
32		ZESCO LTD-Ndola (**Secretary**)	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The chairperson, -Area councillor, opened the meeting at 09:36 hours and welcomed everyone present. He then allowed the ZESCO team to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

5.0 QUESTIONS AND ANSWERS

The people present at the meeting were then given a chance to ask questions and make necessary contributions:

QUESTIONS

wanted to know:

I. How ZESCO will ensure that the houses in the community are wired by genuine, qualified people, stating the fact that if houses are not wired properly accidents such as fires due to short circuits might occur.
II. How much the installation of power will cost?
III. What would happen if compensation is delayed and if there is a grace period given for how long a person should take to build a new house?

ANSWER

ZESCO responded by explaining that ZESCO's responsibility in connecting customers to electricity ends at the metering point. However, before making a new electricity connection, ZESCO does conduct a thorough inspection on the premises to be connected in order to ensure that it meets the acceptable wiring standards for the safety of the people and the property itself. **ZESCO** implored the people present to use qualified electricians in the wiring of their premises in order not to compromise their safety and that of their property.

In answering the second question, **ZESCO** responded by informing the meeting that this is an important project of national economic importance as Government recognizes the importance of rural electrification as a key to enhance growth and socio-economic development and thereby contribute greatly in poverty reduction. He further informed the meeting that the total cost of the project is estimated at US$25 Million.

Finally, **ZESCO** explained that no affected person/s shall be asked to relocate before compensation is made and that the grace period is only agreed upon once compensation is fully effected. The grace period may range from 3 to 6 months depending on the nature of the project and the affected assets. Further ZESCO emphasised no relocation is done during the rain season.

QUESTION

wanted to find out if an individual who wants to have access to power will have to buy the cables required for the connections themselves as well as pay the installer.

ANSWER

ZESCO answered by stating that when a customer applies for new electricity connection, ZESCO shall assess the total cost of the new connection, taking into consideration the cost of materials and other associated costs, the customer to be connected only pay a small percentage of non-refundable fee which is referred to as 'Capital Contribution'. ZESCO further added by informing the meeting that upon payment of the capital contribution, ZESCO provides the service cable, and any other associated connection materials that runs from the electric pole to the distribution box. However, the cost of wiring the premises is totally incurred by the respective customer.

QUESTIONS

asked:

I. If the charges for having ones house wired will be based on their house's distance from the line.
II. If he should wait for the new line to be constructed in order to apply for power or he can still get power from the already existing line.

ANSWER

ZESCO responded by explaining that under normal circumstances, the distance between the premises to be connected and the source of connection does play a major role in quantity of material to be used in the new connection undertaking. The longer the distance, the more the material to be used and subsequently the higher the total cost of connection.

However, ZESCO added that, the Government with other collaborating partners such as the World Bank through has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, ZESCO explained that the total cost of connection can be shared by the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy programme

In the subsidy programme, ZESCO informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay K150,000.00 (K 150) as the case in Chitimukulu and surrounding areas.

ZESCO also informed the meeting that the project was government-driven and so the exact time when construction works would commence cannot be stated now but however the meeting being held signifies the actual commencement. ZESCO further encouraged and many others to go ahead and apply for power supply from the existing supply lines.

QUESTION

asked the ZESCO team what would be done if cemeteries were found within the proposed route.

ANSWER

ZESCO answered by explaining that ZESCO has made it a mandate to avoid all grave yards, shrines and any other areas of social or cultural importance to the people hence the involvement of the local people so that they can guide ZESCO on the location of such areas. However, in a case where a grave yard, un-knowingly, is found within the proposed route, the line will have to be re-surveyed in order not to disturb the grave yard which must respected in our rich Zambian culture.

QUESTION

wanted to know if more than one kiosk can be connected to a single meter.

ANSWER

ZESCO responded by informing the meeting that such connections were not allowed as the corporation might make losses. It was added that the use of electric power in the kiosks will be different and so some owners might find they end up paying for power they have not used and hence make losses as well. ZESCO further added by advising that each kiosk is supposed to have its own separate connection and this same applies to residential areas, as each house is supposed to have its own connection no matter how close they may be.

QUESTION

wanted to find out if grass thatched houses can also be electrified.

ANSWER

ZESCO in response explained that safety is of paramount importance in all ZESCO's operations and therefore, as explained earlier, all premises are inspected in order to ensure that acceptable safety standards are met before making a new electricity connection is made to the respective premises. This is done in order to safeguard the lives of the people and that of the property. Therefore, the condition or state in which the grass thatched or any other property is found in, at the time of inspection, would either qualify or disqualify it for electricity connectivity.

ZESCO further added that ZESCO will conduct safety awareness programmes in and around the project area as electricity is potentially dangerous if not used properly.

QUESTION

wanted to find when the project would start.

ANSWER

ZESCO responded by explaining that the project has many stages, including the location of protected areas, acquiring consents from chiefs and carrying out survey works to determine the route. The scoping meetings held were part of the project phases and therefore in short, the project had commenced.

QUESTION

wanted to know why another line was being brought to their area when there was already an existing line.

ANSWER

ZESCO responded by informing that despite having an existing line, Mungwi was experiencing power deficit as can be evidenced by low voltages especially during peak periods and so the new line would reinforce the power supply to the area which will bring about safe and improved reliability of electricity.

QUESTION

asked if the local people will be employed when construction works commence.

ANSWER

ZESCO answered by stating that in order to empower and maximize project benefits to the local communities, it is ZESCO's policy that local people are given priority when employing workers during the construction of the power line. It was also added that ZESCO has made it policy to engage local cooperatives, at village level, during annual wayleave maintenance. All these measures are aimed at preserving the social and cultural values of respective villages or areas in which ZESCO is carrying out developmental projects, thereby mitigating against adverse effects of cultural-diffusion that comes in when people are brought in an area from different places and backgrounds.

ZESCO further emphasised that as the project will affect many villages, the people will be employed according to their respective areas in order to ensure that as many people as possible benefit from the project.

6.0 CLOSING REMARKS

thanked the ZESCO team for their visit and urged everyone present to disseminate the information to those that did not attend the meeting, after which he closed the meeting at 11:20hours.

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CHAIRPERSON

DATE.....

.....

SECRETARY

DATE.....

MUNGWI DISTRICT COUNCIL
22 JUL 2014
P.O. BOX 50,
MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE PROPOSED KASAMA-MUNGWI-MALOLE-KAYAMBI 132KV PROJECT HELD AT KAYAMBI AGRICULTURE OFFICE IN MUNGWI DISTRICT ON 2ND DECEMBER, 2014

1.0 **PRESENT**

No.	NAME	POSITION/ORGANISATION	PHONE NUMBER
1		Area Councillor **(Chairperson)**	
2		Farmer	
3		Farmer	
4		Farmer	
5		Farmer	
6		Farmer	
7		Farmer	
8		Farmer	
9		Farmer	
10		Farmer	
11		Farmer	
12		Farmer	
13		Farmer	
14		Farmer	
15		Farmer	
16			
17			
18			
19			
20			
21			
22		Farmer	
23		Business man	
24		Farmer	
25		Farmer	
26		Farmer	
27		Farmer	
28		Farmer	
29		Social Scientist-ZESCO	
30		Surveyor-ZESCO	
31		Social Scientist-ZESCO **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 09:40 hrs. The chairperson welcomed everyone present and invited the team from ZESCO to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

The team from ZESCO Limited informed the meeting that the Government of the Republic of Zambia, through ZESCO plans to carry out an ambitious electrification project in Mungwi district. The meeting heard that the intended electrification project will involve the construction of a 132 Kilo Volt (kV) transmission line starting from Kasama via Mungwi, Malole up to Kayambi and will cover a distance of 171km and that it will provide sufficient power. A plan to construct substations at Chimba, Malole and Kayambi was revealed and the meeting was told that the Area Councilor with some members of the community had already selected areas for the proposed substations. The meeting was further informed of the plan to tap power from the substations and that people wanting to have access to electricity would be requested to apply.

The ZESCO team explained further that as a company, there were procedures to be followed when starting a project and that the company was particular on the need to engage the community for discussions before commencing construction works in order to hear the people's views concerning the project. The meeting also heard that the scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011.

In addition, the meeting was informed that due to the high voltage of the line, people were not allowed to leave along the transmission line as it was risky to their lives. Hence the meeting was told that to prevent accidents, people were expected to avoid settling within or along the line.

The meeting was further informed that the initial survey which was carried out indicated that there were no people to be affected by the project. However, in case any properties were to be found during the detailed survey, the affected people would be engaged and adequately compensated. The need to engage agricultural experts to assess the value of agricultural fields and fruit trees for compensation in an event that crops or fruits are

affected was also explained. The meeting was also informed about the Environmental Impact Assessment (EIA) report to be prepared for the project. The importance of the EIA document was explained with emphasis on the identification of the positive and adverse impacts of the project regarding the environment and social issues and also provide mitigation measures Further, the meeting was informed that the EIA for the project will have to be approved by Zambia Environmental Management Agency (ZEMA) for the construction work can commence.

ZESCO also informed the meeting that they consider local people for semi-skilled jobs during project implementation. Therefore, when works commence, the company will not come with people to do semi-skilled works but to depend on local labour from the community. The chairperson emphasized to the members of the community the need to be fair when identifying the people to provide the required semi-skilled labour as this would ensure fair distribution of benefits.

5.0 QUESTIONS AND ANSWERS

The people at the meeting were given an opportunity to ask questions and express their views:

QUESTION

asked whether it was possible to share the connection fee as neighbors, especially for those that would not want to use a lot of electricity.

ANSWER

In response, **ZESCO** explained the introduction of the prepayment metering system where installation of the meter at the customer's premises with the benefit of the customer to control consumption and usage. Therefore, sharing of the meter was discouraged as this would not allow individuals to monitor and control their consumption and to get the freedom of budgeting and buying the power according to each household consumption. Furthermore, company regulations do not allow sharing of prepaid meters as this is an offence hence the connection fee cannot be shared.

QUESTION

asked what would happen in a situation where someone had a katemba (kiosk) within his premises.

ANSWER

ZESCO responded by stating that a kiosk was an extension from the main house and since it is used for trading, it would be captured under the commercial tariff. Therefore the

two would be treated as separate even if they were in the same premises. People were encouraged to provide all the necessary information and to be truthful and transparent when filling in the application forms. People were also discouraged from tapping power to extensions once ZESCO had done the installation as this was an illegal practice that would attract penalty charges and other further actions against the customer. This is also a crime case and the normal procedure for meter separation was explained for cases where the customers had more than one property on the same premises.

QUESTION

Mrs. Sarah Chikombe said she lives at a farm and wanted to find out whether the connection charge was also K150.00

ANSWER

ZESCO explained the procedures involved in the application for new installation which involved an assessment of the premises before the production of a quotation by planners and that the amount to be paid depended on the assessment and location of the premises. It was further explained that currently, Kayambi was a subsidized area where people were required to pay K150.00 only as capital contribution under the increased access to electricity a World Bank funded program with **ZESCO**. Women were encouraged to take advantage of the programme as it supported them under the women empowerment to electricity scheme.

QUESTION

wanted to know how long it takes for **ZESCO** to respond to applications for new connections. He expressed worry that the process took too long basing on what had heard from other people. He further urged the company exercise fairness when connecting people citing the case of REA (Rural Electrification Authority) where he felt there was no fairness in the way they handled their project .(i.e. the 33KV overhead line from Chozi to Makasa via Kayambi).

ANSWER

In answering the question, **ZESCO** explained the guidelines stating that it should take 14 days (2 weeks) for a quotation to be ready after receipt of an application form and 12 weeks (3 months) to be connected after a full payment is made. However, people were encouraged to make follow ups where they felt the company was taking long to respond. **ZESCO** further assured the meeting that as a company, they worked differently and separately according to the agreed terms. In addition, the meeting was informed that when REA constructed a line, they handed it over to **ZESCO** for operations. Therefore, the fear of impartial treatment as referred to should not arise as **ZESCO** would be in charge of the operations.

QUESTION

wanted to know when the project was starting and when it would finish.

ANSWER

In response, the **ZESCO** team informed the meeting that constructors had been on the ground already, with 10 companies having done the assessment and that **ZESCO** was just waiting for bids after which a contractor would be picked to commence the works hopefully in the 1st quarter of 2015.

QUESTION

asked how effective the project was going to be considering the bad state of the road.

ANSWER

ZESCO responded that the challenges of the road depended on how quickly the Government would assist with the road works. However, the chairperson assured the meeting that the road issue had been included in phase three of the Government's plan on road works.

QUESTION

wanted to know how REA were going to hand over their project ZESCO when they still owed money to casuals for the labour provided during the project. He appealed to the **ZESCO** team to take the issue to the attention of Management for consideration before handover so as to ensure that the 45 casual workers that were engaged by Prince Construction, a company engaged by REA, were going to settle the salary arrears.

QUESTION

In response, the **ZESCO** team assured the meeting that they would present the matter to Management before the project starts.

6.0 CLOSING REMARKS

The chairperson thanked the team from **ZESCO** for the visit and expressed happiness on the practice of involving people from the community to hear their views on the project. He also thanked all the people present at the meeting and encouraged everyone to support

the project as it would bring benefits to the community stating that the project was not for one person but for everyone hence the need for the whole community to get invol ed and give support.

There being no further business to discuss, the meeting was closed by at 10:50 hrs.

....

CHAIRPERSON **SECRETARY**

DATE 2/12/2014 **DATE** 6/12/14

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI - MALOLE – KAYAMBI 132KV TRANSMISSION LINE PROJECT HELD AT CHIMBA BASIC SCHOOL IN MUNGWI ON 14TH NOVEMBER, 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISATION
1		Head-Teacher **(Chairperson)**
2		Teacher
3		Teacher
4		Teacher
5		Teacher
6		Teacher
7		Peasant farmer
8		Peasant farmer
9		Peasant farmer
10		Peasant farmer
11		
12		Peasant farmer
13		Peasant farmer
14		Peasant farmer
15		Agricultural assistant
16		Business man
17		
18		Business man
19		Peasant farmer
20		Peasant farmer
21		Peasant farmer
22		Teacher-Head (Chairperson)
23		Teacher-Deputy Head
24		Headman Masembe
25		Sub Chief Chimba
26		Head man Chasenama
27		Teacher
28		Business man
29		Business woman
30		Peasant farmer
31		
32		Peasant farmer

33		Peasant farmer
34		Peasant farmer
35		Peasant farmer
36		Peasant farmer
37		Peasant farmer
38		Peasant farmer
39		Business man
40		Peasant farmer
41		Peasant farmer
42		Peasant farmer
43		Peasant farmer
44		Peasant farmer
45		Peasant farmer
46		
47		Peasant farmer
48		Peasant farmer
49		ZESCO-Ndola
50		ZESCO-Ndola
51		ZESCO-Ndola
52		ZESCO-Ndola **(Secretary)**

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENNING REMARKS

The chairperson also Head teacher of Chimba basic school opened the meeting at 14:20 and requested one of the attendants to pray. The prayer was given by **Mr. Joseph Chanda**. The chairperson proceeded into introduction of the distinguished guests present, the acting Chief Chitimukulu; Sub-Chief Chimba and his entourage from the Bashilubemba Royal Establishment and the ZESCO team themselves respectively. The chairperson further requested the ZESCO team to explain the reason for the meeting to the delegates of chimba community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will be tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO further added that this project is in line with and aims at achieving the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise to be carried out before the implementation of a project. This is to emphasise the importance of stakeholder or community participation at all stages of project implementation. **ZESCO** informed the meeting that it is through this process that possible impacts are identified and recommend mitigation measures for the purpose of minimizing or eliminating the anticipated negative impacts of the project.

In addition, **ZESCO** also explained that if there are any environmental or social concerns regarding the projects that stakeholders want considered, the time to raise such concerns is at this important meeting.

Further, **ZESCO** explained that the power line to be constructed will be a very high voltage transmission line and therefore no structures will be permitted to be built under this line. This therefore means that, for safety reasons, people are not allowed to settle within the cleared area under the power line's Right of Way (wayleave). **ZESCO** further stated that in selecting the most suitable route for the power line, ZESCO shall ensure that settlements are avoided by all means. This shall be done as a safety precaution for the people and their properties but most importantly, in order not to disturb settlements unnecessarily.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, **ZESCO** invited questions/commen and observations from the participants over the project.

QUESTION

wanted to find out, how ZESCO will compensate the comm nity if the line passes through a school?

ANSWER

ZESCO answered by stating that the Corporation does always endeavor not to isturb any settlements and cause unnecessary displacement of people in undertaking all its projects. Therefore, in the selection of the line route for the project, surveyo shall make sure that no settlements or properties, both private or public, are a ected unnecessarily, but in cases where it is found that no alternative route can be fou d, the affected person/s would be engaged and consents obtained. **It was** further stat that after obtaining the consent, ZESCO does engage the services of an inde ndent registered property valuer to assess the value of the affected assets and attach monetary value to them. Based on the monetary value in the valuer's report, ZESCO would then enter into a mutual agreement with the affected person/s for compe sation. After compensation is paid out the affected individual/s is requested to relocate, iven a grace period of say 3 to 6 months depending on the nature of the project nd the affected assets. Relocation will, however, not be done in the rain season.

QUESTION

wanted to know whether the power line will be able to benefit the household consumer.

ANSWER

ZESCO in response explained that the main objective of the project is that of i creased access to clean and reliable electricity for household, commercial and industrial eeds in Mungwi District and surrounding areas. And further it was explained that th ugh the 132kV line is a high voltage transmission line, it will be stepped down to 33kV a d 11kV line for distribution and finally to medium voltage (400v) for supply to house olds. In addition, the Rural Electrification Authority will also be able to carry out ts rural electrification projects in Mungwi District and surrounding areas through t is same project.

QUESTION

asked when the project will start.

ANSWER

ZESCO responded by explaining that the stakeholder involvement through the scoping meeting being held signified the beginning of the project. **ZESCO** further stated that the records of the meeting (minutes) forms part of the final report to be presented to the Zambia Environmental Management Agency (ZEMA) for project approval and once approved, the actual construction works of the 132kV transmission line would then commence. As stakeholders, you will be informed at each and every stage of the project implementation as part of continuous stakeholder engagement, **ZESCO** added.

QUESTION

wanted to know whether ZESCO will take power to Chimbola village, located a few kilometers from Chimba.

ANSWER

ZESCO in reply explained that the project is an important one as it will form a backbone for rural electrification projects in Mungwi District and surrounding areas as alluded to earlier. Further ZESCO added that in the Rural Electrification Master Plan, there are a good number of villages in Mungwi which are referred to as Rural Growth Centres (RGCs) that are earmarked to benefit from the project.

QUESTION

wanted to find out who will be responsible for power distribution to the local consumer (households).

ANSWER

ZESCO explained that the Corporation will be responsible for connecting customers to electricity but customers will need to pay for the new installation of electricity to their premises.

ZESCO also added that, the Government with other collaborating partners such as the World Bank, through ZESCO, has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among

other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, **ZESCO** explained that the total cost of connection can be by shared the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy Programme

In the subsidy programme, **ZESCO** informed the people present that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay **K150,000.00** as the case in Chitimukulu and surrounding areas.

QUESTION

wanted to know, referring to the electrification of the school, who will be responsible for the wiring and connection of teacher's compound.

ANSWER

ZESCO, in response explained that the electrification under discussion was a Government driven project and therefore, Government will ensure that all Government institutions in the identified RGCs are connected to electricity and this includes, among others, Rural Health Centres and Schools.

COMMENDATION

commended government through ZESCO over the power reinforcement and power supply to Mungwi district that will benefit the people and foster development in the long run.

COMMENDATION

commended ZESCO for the gesture that will see the unemployed youths get employed during the project life cycle.

SUGGESTION

suggested that the chief should provide land where the affected people will be relocated to.

ANSWER

ZESCO acknowledged the suggestion by stressing that the influence of Chiefs is cardinal for successful implementation of any developmental project. To this effect, **He** further added that courtesy visits have been made to the Royal Highnesses in Mungwi and surrounding areas. **ZESCO** further mentioned that the Royal Highnesses, Acting Paramount Chief Chitimukulu, Senior Chief Mwamba, Chief Makasa and Sub-Chief Mutale Mukulu were among the Chiefs visited for the purpose of explaining the project to them getting their consents and support in order to successfully carry out project works in their respective chiefdoms.

ZESCO further clarified that unlike a mining project, the 132kV electrification project was a linear one and therefore affected people, if any, will not be required to relocate far away from their current settlement areas. **ZESCO** also added that the affected people will only move a few meters away from the wayleave to be proposed after detailed survey is carried out.

QUESTION

wanted to know how the employment process will be conducted since most villages are close to each other.

ANSWER

ZESCO responded that the Corporation will always seek the help of the local leadership in the recruitment of workers. This is because they are the ones who know the boundaries of the villages and the demography of a given village.

6.0 CLOSING REMARKS

requested the Acting Chitimukulu Sub chief Chimba to address the audience, the acting Chitimukulu in his speech explained that the people of Chimba Village and other surrounding villages feel neglected, citing challenges being faced in the area such as poor road network that are impassable during rainy season and lack of electricity supply in the area. However, he said the electrification of Chimba, Makasa, Kayambi and other areas will be a milestone in the

history of the Bembaland. He therefore, commended ZESCO and wished the company well in their future endeavours.

ZESCO thanked the people of Chimba village and the surrounding villages for their audience and contributions. Furthermore, ZESCO assured the people present that all their concerns have been noted.

In his closing remarks, the chairperson thanked all the people present for their participation. He further requested any of the participants to close in a word of prayer. The prayer was given . Following the closing prayer, the chairperson declared the meeting closed at exactly 15:15 hours.

.....

CHAIRPERSON

DATE 14-11-2012

.....

SECRETARY

DATE

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE KASAMA – MUNGWI – MALOLE - KAYAMBIKV TRANSMISSION LINE PROJECT HELD AT MAKASA CATHOLIC CHURCH ON 3rd OCTOBER, 2012.

1.0 PRESENT

No.	NAME	OCCUPATION/ORGANISATION
1		Ward Councilor **(Chairman)**
2		Farmer
3		Farmer
4		Farmer
5		Farmer
6		Farmer
7		Farmer
8		Farmer
9		Farmer
10		Farmer
11		Farmer
12		Farmer
13		Farmer
14		Farmer
15		Farmer
16		Farmer
17		Farmer
18		Farmer
19		Farmer
20		Farmer
21		Farmer
22		Farmer
23		Farmer
24		Farmer
25		Farmer
26		Farmer
27		Farmer
28		Farmer
29		Farmer
30		Farmer/V. Headman
31		Farmer
32		Farmer
33		Farmer

34		Farmer
35		Peasant Farmer
36		Peasant Farmer
37		Pastor
38		Farmer
39		Farmer
40		Farmer
41		Farmer
42		Farmer
43		Farmer
44		Farmer
45		Farmer
46		Barber Man
47		Barber Man
48		
49		
50		Barber Man
51		Brick layer
52		Brick layer
53		
54		
55		
56		
57		
58		
59		
60		
61		ZESCO – Lusaka
62		ZESCO – Ndola
63		ZESCO – Ndola
64		ZESCO – Ndola
65		ZESCO – Ndola
66		ZESCO – Ndola **(Secretary)**

2.0 AGENDA

- Prayer
- Opening Remarks
- Presentation of the project
- Questions and Comments
- Closing Remarks

3.0 OPENING REMARKS

The Chairperson called the meeting to order at 11:50hours after a prayer and welcomed everyone present. He then requested the ZESCO team to introduce its members.

4.0 PRESENTATION OF THE PROJECT

ZESCO Limited began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. It was explained that the intended electrification project will involve the construction of a 132 kilo volt (kV) transmission line that will tapped from the new 330/132/66kV substation to be constructed in Kasama 's Brown Kafula Village in Senior Mwamba 's Chiefdom. The meeting was informed that the line will initially run parallel with the existing Mpika – Kasama 66kV transmission line and will pass through Mungwi, Malole, Chimba and through Makasa up to Kayambi. ZESCO also mentioned that most of these areas in Mungwi District have no access to electricity and those areas that are electrified have been experiencing low voltage due to increased demand for electricity services, hence the reason this project would turn out to be beneficial to Mungwi District as a whole.

ZESCO further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise be carried out before the implementation of a project.

In addition, **ZESCO** also explained that people are not allowed to settle within the wayleave of the line in order to avoid accidents since the line will carry a high voltage. However, some property might still be found along the proposed route and as such the respective owners will be engaged and adequately compensated, that is, after an independent valuer carries out an assessment of the same.

ZESCO mentioned that ZESCO had already paid a courtesy on Chief Makasa with the aim of explaining to His Royal Highness the proposed electrification project and getting permission to implement the same in his chiefdom. ZESCO further requested for cooperation and support from the people of Makasa Village and surrounding areas.

5.0 QUESTION AND ANSWERS

QUESTION

asked what kind of support ZESCO needed. from the local people.

ANSWER

ZESCO responded by explaining that the electrification project was of great social and economic importance to the people of Makasa and surrounding areas. It was added that the Government of the Republic of Zambia has placed a very high premium on growth-stimulating interventions such as this proposed electrification project in Mungwi District which will, undoubtedly, greatly contribute to poverty reduction in the area. ZESCO further pointed out that access to clean, reliable and affordable electricity is fundamental to daily life and any level of socio-economic development.

ZESCO further stated that such a project to be fully implemented and bear its intended fruits, there is need for support from the local people just like the support given through attendance of the scoping meeting and by way of safeguarding of this important infrastructure and not engage in vices such theft and vandalism.

QUESTION

asked if the map for the proposed power line route was available for everyone.

ANSWER

ZESCO answered with an explanation that the map was not yet ready but once the survey works are done and concluded, then the line route for the proposed power line will be produced and shall certainly be made available through His Royal Highness Chief Makasa, respective village headmen and any other relevant local leadership.

QUESTION

wanted to know other places that will be electrified apart from Makasa.

ANSWER

ZESCO answered with an explanation that the proposed electrification project was an ambitious programme which will be implemented in line with the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratios in the rural areas from the current 3% to 51% by the year 2030.

As mentioned earlier, ZESCO added, the power line will take off from the new 330/132/66kV substation to be constructed in Kasama through Mungwi and Malole up to Kayambi and this indeed therefore means that there other places that will be electrified apart from Makasa among which include Mungwi District areas of Kayambi Mission, Mbesuma Ranch and other selected settlements in the Chambeshi Basin.

QUESTION

asked if the electricity tariffs will be the same as these charged in town.

ANSWER

ZESCO responded by informing the meeting that electricity tariff charges are uniform throughout the country regardless of the place or area one may be. It was further stated that people living in Kafue Gorge or Kariba, where electricity is generated, pay the same tariff charges as anyone else around Zambia.

QUESTION

asked when the works will commence.

ANSWER

ZESCO responded that the project has already started but as ZESCO we have to follow right procedures according to the legal requirements of the country such as the Zambia Environmental Management Agency (ZEMA)'s environmental regulations. It was added that actual construction works would commence soon after project approval by ZEMA.

QUESTION

wanted to know what criteria, ZESCO uses to employ people during such projects.

ANSWER

ZESCO answered by explaining that employment shall be done through consultations with the local leadership. It emphasised added that it is ZESCO's desire that as many

people, especially the youths, benefit from the project. There are many categories of works to be done such as bush clearing, digging of holes, construction of access roads to mention a few. Therefore different people shall be employed at different stages of the project.

COMMENT

was delighted to know that ZESCO was aware of the problem that Mungwi District is facing. In order for the town to attract investment in tourism and other sectors of the economy, it required electricity. He therefore, urged ZESCO to expedite the projects as soon as possible.

COMMENT

recommended ZESCO for the project because it would improve the livelihood of the people of Makasa, and assured ZESCO of full support. He further recommended ZESCO for the jobs that will be created during the project to the local people.

6.0 CLOSING REMARKS

The chairperson thanked the visiting team and the local participants for their time and attention during the meeting. A prayer was given by one of the participants and the meeting officially closed at 12.40hrs.

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Chairperson **Secretary**

Date.....22..... **Date**.....

P.O. BOX 50,
MUNGWI

MINUTES OF THE SCOPING MEETING FOR THE PROPOSED KASAMA-MUNGWI-MALOLE-KAYAMBI 132KV PROJECT HELD AT KAYAMBI AGRICULTURE OFFICE IN MUNGWI DISTRICT ON 2ND DECEMBER, 2014

1.0 **PRESENT**

No.	NAME	POSITION/ORGANISATION	PHONE NUMBER
1		Area Councillor **(Chairperson)**	
2		Farmer	
3		Farmer	
4		Farmer	
5		Farmer	
6		Farmer	
7		Farmer	
8		Farmer	
9		Farmer	
10		Farmer	
11		Farmer	
12		Farmer	
13		Farmer	
14		Farmer	
15		Farmer	
16			
17			
18			
19			
20			
21			
22		Farmer	
23		Business man	
24		Farmer	
25		Farmer	
26		Farmer	
27		Farmer	
28		Farmer	
29		Social Scientist-ZESCO	
30		Surveyor-ZESCO	
31		Social Scientist-ZESCO **(Secretary)**	

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENING REMARKS

The meeting was called to order at 09:40 hrs. The chairperson welcomed everyone present and invited the team from ZESCO to introduce themselves.

4.0 PRESENTATION OF THE PROJECT

The team from ZESCO Limited informed the meeting that the Government of the Republic of Zambia, through ZESCO plans to carry out an ambitious electrification project in Mungwi district. The meeting heard that the intended electrification project will involve the construction of a 132 Kilo Volt (kV) transmission line starting from Kasama via Mungwi, Malole up to Kayambi and will cover a distance of 171km and that it will provide sufficient power. A plan to construct substations at Chimba, Malole and Kayambi was revealed and the meeting was told that the Area Councilor with some members of the community had already selected areas for the proposed substations. The meeting was further informed of the plan to tap power from the substations and that people wanting to have access to electricity would be requested to apply.

The ZESCO team explained further that as a company, there were procedures to be followed when starting a project and that the company was particular on the need to engage the community for discussions before commencing construction works in order to hear the people's views concerning the project. The meeting also heard that the scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011.

In addition, the meeting was informed that due to the high voltage of the line, people were not allowed to leave along the transmission line as it was risky to their lives. Hence the meeting was told that to prevent accidents, people were expected to avoid settling within or along the line.

The meeting was further informed that the initial survey which was carried out indicated that there were no people to be affected by the project. However, in case any properties were to be found during the detailed survey, the affected people would be engaged and adequately compensated. The need to engage agricultural experts to assess the value of agricultural fields and fruit trees for compensation in an event that crops or fruits are

affected was also explained. The meeting was also informed about the Environmental Impact Assessment (EIA) report to be prepared for the project. The importance of the EIA document was explained with emphasis on the identification of the positive and adverse impacts of the project regarding the environment and social issues and also provide mitigation measures Further, the meeting was informed that the EIA for the project will have to be approved by Zambia Environmental Management Agency (ZEMA) for the construction work can commence.

ZESCO also informed the meeting that they consider local people for semi-skilled jobs during project implementation. Therefore, when works commence, the company will not come with people to do semi-skilled works but to depend on local labour from the community. The chairperson emphasized to the members of the community the need to be fair when identifying the people to provide the required semi-skilled labour as this would ensure fair distribution of benefits.

5.0 QUESTIONS AND ANSWERS

The people at the meeting were given an opportunity to ask questions and express their views:

QUESTION

asked whether it was possible to share the connection fee as neighbors, especially for those that would not want to use a lot of electricity.

ANSWER

In response, **ZESCO** explained the introduction of the prepayment metering system where installation of the meter at the customer's premises with the benefit of the customer to control consumption and usage. Therefore, sharing of the meter was discouraged as this would not allow individuals to monitor and control their consumption and to get the freedom of budgeting and buying the power according to each household consumption. Furthermore, company regulations do not allow sharing of prepaid meters as this is an offence hence the connection fee cannot be shared.

QUESTION

asked what would happen in a situation where someone had a katemba (kiosk) within his premises.

ANSWER

ZESCO responded by stating that a kiosk was an extension from the main house and since it is used for trading, it would be captured under the commercial tariff. Therefore the

two would be treated as separate even if they were in the same premises. People were encouraged to provide all the necessary information and to be truthful and transparent when filling in the application forms. People were also discouraged from tapping power to extensions once ZESCO had done the installation as this was an illegal practice that would attract penalty charges and other further actions against the customer. This is also a crime case and the normal procedure for meter separation was explained for cases where the customers had more than one property on the same premises.

QUESTION

said she lives at a farm and wanted to find out whether the connection charge was also K150.00

ANSWER

ZESCO explained the procedures involved in the application for new installation which involved an assessment of the premises before the production of a quotation by planners and that the amount to be paid depended on the assessment and location of the premises. It was further explained that currently, Kayambi was a subsidized area where people were required to pay K150.00 only as capital contribution under the increased access to electricity a World Bank funded program with **ZESCO**. Women were encouraged to take advantage of the programme as it supported them under the women empowerment to electricity scheme.

QUESTION

wanted to know how long it takes for **ZESCO** to respond to applications for new connections. He expressed worry that the process took too long basing on what he had heard from other people. He further urged the company exercise fairness when connecting people citing the case of REA (Rural Electrification Authority) where he felt there was no fairness in the way they handled their project .(i.e. the 33KV overhead line from Chozi to Makasa via Kayambi).

ANSWER

In answering the question, **ZESCO** explained the guidelines stating that it should take 14 days (2 weeks) for a quotation to be ready after receipt of an application form and 12 weeks (3 months) to be connected after a full payment is made. However, people were encouraged to make follow ups where they felt the company was taking long to respond. **ZESCO** further assured the meeting that as a company, they worked differently and separately according to the agreed terms. In addition, the meeting was informed that when REA constructed a line, they handed it over to **ZESCO** for operations. Therefore, the fear of impartial treatment as referred to should not arise as **ZESCO** would be in charge of the operations.

QUESTION

wanted to know when the project was starting and when it would finish.

ANSWER

In response, the **ZESCO** team informed the meeting that constructors had been on the ground already, with 10 companies having done the assessment and that **ZESCO** was just waiting for bids after which a contractor would be picked to commence the works hopefully in the 1st quarter of 2015.

QUESTION

asked how effective the project was going to be considering the bad state of the road.

ANSWER

ZESCO responded that the challenges of the road depended on how quickly the Government would assist with the road works. However, the chairperson assured the meeting that the road issue had been included in phase three of the Government's plan on road works.

QUESTION

wanted to know how REA were going to hand over their project to ZESCO when they still owed money to casuals for the labour provided during the project. He appealed to the **ZESCO** team to take the issue to the attention of Management for consideration before handover so as to ensure that the 45 casual workers that were engaged by Prince Construction, a company engaged by REA, were going to settle the salary arrears.

QUESTION

In response, the **ZESCO** team assured the meeting that they would present the matter to Management before the project starts.

6.0 CLOSING REMARKS

The chairperson thanked the team from **ZESCO** for the visit and expressed happiness on the practice of involving people from the community to hear their views on the project. He also thanked all the people present at the meeting and encouraged everyone to support

the project as it would bring benefits to the community stating that the project was not for one person but for everyone hence the need for the whole community to get involved and give support.

There being no further business to discuss, the meeting was closed by at 10:50 hrs.

.....
CHAIRPERSON

DATE 02nd December 2014

.....
SECRETARY

DATE 02/12/14

MINUTES OF THE SCOPING MEETING FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE NSELUKA – MALOLE – MAKASA 66KV TRANSMISSION LINE PROJECT HELD AT CHIMBA BASIC SCHOOL IN MUNGWI ON 14TH NOVEMBER, 2012

1.0 PRESENT

NO.	NAME	OCCUPATION/ORGANISATION
1		Head-Teacher **(Chairperson)**
2		Teacher
3		Teacher
4		Teacher
5		Teacher
6		Teacher
7		Peasant farmer
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22		Teacher-Head (Chairperson)
23		Teacher-Deputy Head
24		Headman Masembe
25		Sub Chief Chimba
26		Head man Chasenama
27		Teacher
28		Business man
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47		Peasant farmer
48		Peasant farmer
49		ZESCO-Ndola
50		ZESCO-Ndola
51		ZESCO-Ndola
52		ZESCO-Ndola **(Secretary)**

2.0 AGENDA

- Opening remarks
- Project presentation
- Project discussion
- Closing remarks

3.0 OPENNING REMARKS

The chairperson also Head teacher of Chimba basic school opened the meeting at 14:20 and requested one of the attendants to pray. The prayer was given by . The chairperson proceeded into introduction of the distinguished guests present, the acting chief Chitimukulu; chief Chimba and his entourage from the Lubemba Royal Establishment and the ZESCO team themselves respectively. The chairperson further requested the ZESCO team to explain the reason for the meeting to the delegates of chimba community and other surrounding villages that were present.

4.0 PRESENTATION OF THE PROJECT

began by informing the meeting that the Government of the Republic of Zambia, through ZESCO, plans to carry out an ambitious electrification project in Mungwi District. He explained that the intended electrification project will involve the construction of a 66 kilo volt (kV) transmission line that will run from Nseluka to Makasa with a tee off at Chimba to take the line to Malole. He further added that this project is in line with and aims at achieving the objectives of the Rural Electrification Master Plan (REMP) whose overall objective is increasing electrification ratio in the rural areas from the current 3% to 51% by the year 2030. He mentioned that most parts of Mungwi District have no access to electricity and those that are electrified experience low voltages (Mungwi, Malole and Chitimukulu).

further explained that the scoping meeting was held in order to inform the community on the proposed project and also get their views and concerns relating to the same, pointing out that scoping meetings are held in accordance with the Environmental Management Act No 12 of 2011 which calls for such an exercise to be carried out before the implementation of a project. This is to emphasise the importance of stakeholder or community participation at all stages of project implementation.

informed the meeting that it is through this process that possible impacts are identified and recommend mitigation measures for the purpose of minimizing or eliminating the anticipated negative impacts of the project.

In addition, also explained that if there are any environmental or social concerns regarding the projects that stakeholders want considered, the time to raise such concerns is at this important meeting.

In addition, explained that the power line to be constructed will be a very high voltage transmission line and therefore no structures will be permitted to be built under this line. This therefore means that, for safety reasons, people are not allowed to settle within the cleared area under the power line's Right of Way (wayleave). further stated that in selecting the most suitable route for the power line, ZESCO shall ensure that settlements are avoided by all means. This shall be done as a safety precaution for the people and their properties but most importantly, in order not to disturb settlements unnecessarily.

5.0 QUESTIONS AND ANSWERS

After the presentation of the project, invited questions from the participants over the project.

QUESTION

wanted to find out, how ZESCO will compensate the community if the line passes through a school?

ANSWER

answered by stating that ZESCO does always endeavor not to disturb any settlements and cause unnecessary displacement of people in undertaking all its projects. Therefore, in the selection of the line route for the project, surveyors shall make sure that no settlements or properties, both private or public, are affected unnecessarily, but in cases where it is found that no alternative route can be found, the affected person/s would be engaged and consents obtained. **He** further stated that after obtaining the consent, ZESCO does engage the services of an independent registered property valuer to assess the value of the affected assets and attach monetary value to them. Based on the monetary value in the valuer's report, ZESCO would then enter into a mutual agreement with the affected person/s for compensation. After compensation is paid out the affected individual/s is requested to relocate, given a grace period of say 3 to 6 months depending on the nature of the project and the affected assets. Relocation will, however, not be done in the rain season.

QUESTION

wanted to know whether the power line will be able to benefit the household consumer.

ANSWER

in response explained that the main objective of the project is that of increased access to clean and reliable electricity for household, commercial and industrial needs in Mungwi District and surrounding areas. He further explained that though the 66kV line is a high voltage transmission line, it will be stepped down to 33kV and 11kV line for distribution and finally to medium voltage (400v) for supply to households. In addition, the Rural Electrification Authority will also be able to carry out its rural electrification projects in Mungwi District and surrounding areas through this same project.

QUESTION

asked when the project will start.

ANSWER

responded by explaining that the stakeholder involvement through the scoping meeting being held signified the beginning of the project. **He** further stated that the records of the meeting (minutes) forms part of the final report to be presented to the Zambia Environmental Management Agency (ZEMA) for project approval and once approved, the actual construction works of the 66kV transmission line would then commence. As stakeholders, you will be informed at each and every stage of the project implementation, added.

QUESTION

wanted to know whether ZESCO will take power to Chimbola village, located a few kilometers from Chimba.

ANSWER

in response explained that the project is an important one as it will form a backbone for rural electrification projects in Mungwi District and surrounding areas as alluded to earlier. He further added that in the Rural Electrification Master Plan, there are a good number of villages in Mungwi which are referred to as Rural Growth Centres (RGCs) that are earmarked to benefit from the project.

QUESTION

wanted to find out who will be responsible for power distribution to the local consumer (households).

ANSWER

explained that ZESCO will be responsible for connecting customers to electricity but customers will need to pay for the new installation of electricity to their premises.

added that, the Government with other collaborating partners such as the World Bank, through ZESCO, has come up with a number of deliberate programmes which are aimed at promoting the use of the clean and renewable energy sources as a way of combating the adverse effects of climate which has been brought about, among other factors, by indiscriminate cutting down of trees for firewood and charcoal burning. Among these programmes two of which are as follows;

A. The scheme incentive

Under the scheme incentive, explained that the total cost of connection can be by the number of new customers in a given settlement requiring electricity supply services. Each member pays an equal amount towards the total cost and therefore reduces the burden of paying of the total cost by one person.

B. The subsidy Programme

In the subsidy programme, He informed the people that there are certain identified Rural Growth Centres and Peri-urban areas in which increased access to electricity services is being promoted by a way of subsidizing the connection fees as new customers are only required to pay **K150,000.00** as the case in Chitimukulu and surrounding areas.

QUESTION

wanted to know, referring to the electrification of the school, who will be responsible for the wiring and connection of teacher's compound.

ANSWER

in response explained that the electrification under discussion was a Government driven project and therefore, Government will ensure that all Government institutions in the identified RGCs are connected to electricity and this includes, among others, Rural Health Centres and Schools.

COMMENDATION

commended government through ZESCO over the power reinforcement and power supply to Mungwi district that will benefit the people and foster development in the long run.

COMMENDATION

commended ZESCO for the gesture that will see the unemployed youths get employed during the project life cycle.

SUGGESTION

suggested that the chief should provide land where the affected people will be relocated to.

ANSWER

acknowledged the suggestion by stressing that the influence of Chiefs is cardinal for successful implementation of any developmental project. To this effect, **He** further added that courtesy visits have been made to the Royal Highnesses in Mungwi and surrounding areas. mentioned that the Royal Highnesses Acting Paramount Chief Chitimukulu, Senior Chief Mwamba, Chief Makasa and Sub-Chief Mutale Mukulu were among the Chiefs visited for the purpose of explaining the project to them getting their consents and support in order to successfully carry out project works in their respective chiefdoms.

further clarified that unlike a mining project, the 66kV electrification project was a linear one and therefore affected people, if any, will not be required to relocate far away from their current settlement areas. **He** also added that the affected people will only move a few meters away from the wayleave to be proposed after detailed survey is carried out.

QUESTION

wanted to know how the employment process will be conducted since most villages are close to each other.

ANSWER

responded that ZESCO will seek the help of the local leadership in the recruitment of workers. This is because they are the ones who know the boundaries of the villages and the demography of a given village.

6.0 CLOSING REMARKS

requested the Acting Chitimukulu Sub chief Chimba to address the audience, the acting Chitimukulu in his speech explained that the people of Chimba Village and other surrounding villages feel neglected, citing challenges being faced in the area such as poor road network that are impassable during rainy season and lack of electricity supply in the area. However, he said the electrification of Chimba, Makasa, Kayambi and other areas will be a milestone in the history of the Bembaland. He therefore, commended ZESCO and wished the company well in their future endeavours.

thanked the people of Chimba village and the surrounding villages for their audience and contributions. Furthermore, he assured them that all their concerns have been noted.

In his closing remarks, the chairperson thanked all the people present for their participation. He further requested any of the participants to close in a word of prayer. The prayer was given by Mr. Tembo Makopa. Following the closing prayer, the chairperson declared the meeting closed at exactly 15:15 hours.

.....

CHAIRPERSON

DATE.....24/04/13.....

.....

SECRETARY

DATE.....

21 APR 2013

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APPENDIX

7-3 *MINUTES ROUND 2A*

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: ~~**ZEMA, EIA Unit**~~ KASAMA DISTRICT ACTING ADMINISTRATIVE OFFICER

QUESTIONS: 5

Date: 16/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

- , ACTING ADMINISTRATIVE OFFICER
-
-

Consultant's representative(s):

- ANTOINE MOREAU
- GEOFFREY SIAME
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required

measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
    - Scoping study and drafting of EIA's Terms of Reference (in progress);
    - ToR approval by national authorities;
    - Undertaking of environmental and social baseline studies;
    - Impact identification and assessment;
    - Preparation of Environmental and Social Management Plans (ESMP);
    - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with Inter-Consult Ltd., has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Transmission lines may bring about damage to vegetation and wildlife habitat through way-leave clearance;
- Transmission lines may have effects on land use and restrict agricultural activities within right-of-way;
- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	MORE ENERGY IN KASAMA WILL BE ACCESSIBLE, ECOMIC BENEFIT TO REGION SOME INDUSTRY SUFFER FROM LOW VOLTAGE
2.	~~SOM~~ COMPENSATION IN NATURE NOT IN CASH
3.	TO CONSULT THE ~~MAMBA~~ CHIEF ~~OF~~ MAMWIBA IN LUKUPA. ~~MAMBA~~ MWAMBA
4.	
5.	

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	Ag/ DISTRICT COMMUNICATIVE OFFICER	
Name	Function	Signature

On behalf of the Consultant:

GEOFFREY SIAME	AMC - CONSULTANT	
ANTOINE MOREAU	GENIVAR	
BERARD GOMO	AMC - CONSULTANT	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

16/12/2013

Consulted Organization: Northern Province Permanent Secretary + technical services

QUESTIONS: 3,4,5,6,7,11,12,13,15,16,17,18,19,20,21,22, 23

Date: 16/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

- PERMANENT SECRETARY
-
-

Consultant's representative(s):

- ANTOINE MOREAU
- GEOFFREY SIAME
-

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The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

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- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

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measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

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The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

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- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	THE PROJECT IS VERY INTERESTING
	BECAUSE THE NORTHERN PROVINCE
	IS POWER HUNGRY FOR INDUSTRIAL
2.	~~OTHER PROJ~~ PURPOSE
3	RESETTLEMENT IS AN ISSUE BUT
	BESIDE THAT THERE IS NO BIG ISSUES
	BECAUSE THERE IS NO CONSERVATION AREA, ETC.
4	IN PROJECT AREA
5.	

7. CONCLUSION

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Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: Kasama Municipal Council, Executive and technical directors

QUESTIONS: 3,4,5,6,7,11,12,13,15,16,17,18,19,20,21,22, 23

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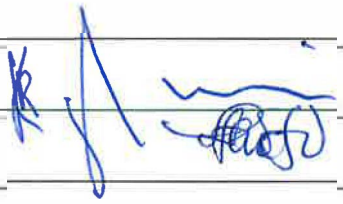
1. -> THE TOWN IS EXTENDING TOWARD KISORA ROAD (APPLY) IS DONE TO ~~PROVINCIAL~~ NATIONAL AUTHORITIES) TOO MUCH PRESSURE ON LAND.
2. TO BE AWARE OF THE NEW EXPANSION PLAN OF KASOMIA (SEE PLAN) (HOUSING / COMMERCIAL AREA)
3. NEED TO INVOLVE LOCAL CHIEF ALL THE WAY DURING THE ESIA PROCESS
4.
5.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	COUNCIL CARER TOWN PLANNER	
Name	Function	Signature

On behalf of the Consultant:

M. A. MOREAU	GENIVAR	
G. Siame	AMC	
B. GOMO	AMC	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: ~~Ministry of Gender and Child Development~~ MINISTRY OF FORESTRY

QUESTIONS: 4,7,8,11-19-22

Date: 16/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

ZULU NGUVULU, PRINCIPAL FORESTRY OFFICER

PRINCIPAL FORESTRY TECHNICIAN

Consultant's representative(s):

-
-
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required

measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
    - Scoping study and drafting of EIA's Terms of Reference (in progress);
    - ToR approval by national authorities;
    - Undertaking of environmental and social baseline studies;
    - Impact identification and assessment;
    - Preparation of Environmental and Social Management Plans (ESMP);
    - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with Inter-Consult Ltd., has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Transmission lines may bring about damage to vegetation and wildlife habitat through way-leave clearance;
- Transmission lines may have effects on land use and restrict agricultural activities within right-of-way;
- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	IMPACT ON TREES / RESERVE AREA FOR FOREST NEED TO BE ACCOUTED.
2.	STREAM ARE DRYING ~~(et)~~ IN THE REGION BECAUSE OF DEFORESTRATION - THIS WILL ADD TO DEFORESTRATION -
3.	IN MARASA AREA ~~is~~ THERE IS A LOT OF SHRINES // TREES SPECIES ~~(et)~~ NATIONAL SHRINES, TRADITIONAL CHIEFS KINGS.
4.	~~SENS~~ LOCAL COMMUNITIES NATURAL RESSOURCES NEED TO BE PROTECTED
5.	

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Name	Function	Signature
	JL NGUVULY, P.F.O.	
	PRINCIPAL FORESTRY ~~CHIEF~~ TECHNICIAN	

On behalf of the Consultant:

Name	Function	Signature
ANTOINE MORIEAU	GENIVAR	
GEOFFREY SIAME	AMC	

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

16/12/2013

Consulted Organization: National Heritage Conservation Commission Northern Region regional office

QUESTIONS: 11

Date: 16/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

- , SENIOR CONSERVATION OFFICER
-
-

Consultant's representative(s):

- ANTOINE MOREAU
- GEOFFREY SIAME
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

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  - ToR approval by national authorities;
  - Undertaking of environmental and social baseline studies;
  - Impact identification and assessment;
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- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with Inter-Consult Ltd., has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

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- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. SOME HERITAGE OR ARCHEOLOGICAL SITE ARE PRESENT. ROSA MISSION & ~~AND~~ IN ROSA AND LATE STONE-AGE REMAINS
2. NEAR MAKASA OR LUCHIEWE FLOOD PLAIN / SOME REMAINS WAS FOUND IN ISOKA REGION RECENTLY
3. MUST TAKE INTO ACCOUNT NATIONAL PROTECTED AREAS.

3. IF THERE IS A CHANCE FIND OF ANY NATURAL OR CULTURAL SITE THE MINISTRY HAS TO BE INFORM
4. TO ASSES THE SITUATION.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	SENIOR CONSERVATION OFFICER - NATURAL	
Name	Function	Signature

On behalf of the Consultant:

ANTOINE MORFAU	GENIVAR	
GEOFFREY SIAME	AMC	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

17/12/2013

Consulted Organization: ~~National Heritage Conservation Commission~~ MUNGWE DISTRICT,

QUESTIONS: 11

Date: 17/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

, DISTRICT COMMISSIONER,

-
-

Consultant's representative(s):

- ANTOINE MOREAU, GENIVAR
- GEOFFREY SIAME, AMC
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;
- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;
- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);
- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;
- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;
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  - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with Inter-Consult Ltd., has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

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- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	THIS PROJECT IS INTERESTING FOR THE DISTRICT BECAUSE IT WILL HELP THE RURAL ELECTRIFICATION PROGRAM
2.	HEALTH SERVICES ~~ARE~~ DOWNGRADED BECAUSE OF LACK OF POWER
3.	#1-2 ~~OF~~ CORRIDORS OPTION ARE THE MOST INTERESTING.
4.	TO CONSULT THE CHIEFS OF MARASA, CHIMBOLA, CHITIMUKULU (NO CHIEF ACTUALLY)
5.	~~THE~~ THIS COMPENSATION IS BETTER GIVEN IN NATURE (~~THEIR~~ NEW HOUSE) THAN IN CASH. IT IS OK FOR CASH FOR ~~CASH~~ CROP COMPENSATION.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	DISTRICT COMMISSINER	
Name	Function	Signature

On behalf of the Consultant:

ANTOINE MORIEAU	GENIVAR	
GEOFFREY SIAME	ENVIRO CONSULT	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

17/12/2013

Consulted Organization: Muchinga Province Permanent Secretary + technical services

QUESTIONS: 3,4,5,6,7,11,12,13,15,16,17,18,19,20,21,22, 23

Date: 17/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

- , ASSISTANT SECRETARY,
-
-

Consultant's representative(s):

- ANTOINE MOREAU
- GEOFFREY SIAMI
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

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- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

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measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

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5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

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6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	THIS PROJECT IS INTERESTING FOR THE DISTRICT BECAUSE IT WILL HELP THE RURAL ELECTRIFICATION PROGRAM
2.	HEALTH SERVICES ~~ARE~~ DOWNGRADED BECAUSE OF LACK OF POWER
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5.	~~THE~~ THIS COMPENSATION IS BETTER GIVEN IN NATURE (~~THEIR~~ NEW HOUSE) THAN IN CASH. IT IS OK FOR CASH FOR ~~CASH~~ CROP COMPENSATION.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	ASSISTANT SECRETARY	
Name	Function	Signature

On behalf of the Consultant:

ANTOINE MOREAU	GENIVAR	
Geoffrey Sigmie	AMC	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

17/12/2013

Consulted Organization: [redacted] District Council, Executive and technical directors

MONGWE

QUESTIONS: 3,4,5,6,7,11,12,13,15,16,17,18,19,20,21,22, 23

Date: 17/12/2013

1. PARTICIPANTS

Consulted organization's representative(s):

- COUNCIL SECRETARY (Ag)

Consultant's representative(s):

- ANTOINE MOREAU
- GEOFFREY SIAME
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

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- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

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- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.	TO HAVE ANOTHER MEETING TO MEET LOCAL ~~COUNCILLOR~~ CONSELOR
2.	THE CORRIDOR # 3 IS THE LEAST DISRUPTIVE FROM # OF HOUSEHOLD AFFECTED.
3.	THE EXPLANATION OF THE PURPOSE OF THE LINE IS IMPORTANT. LOCAL COUNCIL/CHIEF AND COMMUNITY NEED TO BE CONSULTED.
4.	ELECTRICITY SHOULD BE MADE AVAILABLE, AND CHEAPER ~~TO~~ TO PERMIT PEOPLE TO ACCESS ELECTRICITY.
5.	IT IS BETTER TO OFFER COMPENSATION IN NATURE INSTEAD THAN CASH.
(6)	~~#~~ THE LINE SHOULD BE PLACE NEAR ACTIVITY AND VILLAGES SO THAT PEOPLE CAN ~~BE~~ PROFIT FROM POWER.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

[illegible]	C. S.	
Name	Function	Signature

On behalf of the Consultant:

ANTOINE MOREAU	GENIVAR	
GEOFFREY SIAME	A MC	
Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: WWF Zambia

QUESTIONS: 11,15

Date:

1. PARTICIPANTS

Consulted organization's representative(s):

- M. SICHILONGO, INTERIM COUNTRY DIRECTOR / COORDINATOR,
-

Consultant's representative(s):

- PHILIPPE A. PAQUETTE
- ANTOINE MORIEAU
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

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- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required

measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
    - Scoping study and drafting of EIA's Terms of Reference (in progress);
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    - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with Inter-Consult Ltd., has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Transmission lines may bring about damage to vegetation and wildlife habitat through way-leave clearance;
- Transmission lines may have effects on land use and restrict agricultural activities within right-of-way;
- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. WE HAVE TO GET INFORMATION FROM BIRDWATCH ZAMBIA. FOR MIGRATORY BIRDS IN THE AREA. IT IS A MAJOR BIRD MIGRATING CORRIDOR
2. WE HAVE TO TAKE CARE OF THE IMPACT ON MIGRATORY BIRD. THE ~~MAFINGA~~ MOUNTAIN RANGE IS AN IMPORTANT BIRD AREA.
3. MITIGATION MEASURES TO TREES CLEARANCE IN ~~OF~~ RIGHT-OF-WAY NEED TO BE LOOKED AT CAREFULLY.
4. POACHING BY WORKERS DURING CONSTRUCTION IS A ~~THE~~ ISSUE, ~~IT~~ MUST BE CONTROLED
5. PROTECTION OF WATER STREAMS DURING CONSTRUCTION
6. ~~CHAMBESHE~~ CHAMBESHE ~~CHAMBE SHE~~ FLOOD PLAIN IS ~~THE~~ MOST IMPORTANT ECOLOGICAL RIVER SYSTEM IN THE NORTH

POLLUTION OF WATER, DURING CONSTRUTION AND MAINTENANCE (USE OF HERBICIDES), ETC.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

	DIRECTOR	
	COORDINATOR	
Name	Function	Signature

On behalf of the Consultant:

Philippe Alary-Paquette	ESIA Coordinator	
ANTOINE MORIN	" SOCIAL	
Name	Function	Signature

(7) SEXUALLY T. DISEASE
AIDS MITIGATION MEASURES NEED TO BE CONTROLED.

(8) WATER CATCHMENT PROTECTION ~~ORS~~ AND ~~NEEDS TO~~ ~~BE~~ COMPENSATION MEASURES NEED TO BE ~~NEED~~ PROPOSED

(9) THE OPTION PREFERABLE IS ~~THE~~ ~~ONE~~ # 2 ~~THAT~~, BECAUSE REDUCE IMPACT ON WETLAND & AND PRESENCE OF SERVICE ROAD

(10) TO PREPARE AGAINST THE ARGUMENT OF CHOOSING THE OPTION THAT CREATE MORE JOBS.

(11) NEED TO GIVE MORE ACCESS TO ALTERNATIVE ENERGY OVER AND ABOVE RURAL ELECTRIFICATION BECAUSE ELECTRICITY IS NOT ACCESSIBLE (ECONOMICALLY) TO RURAL AREAS.

~~(12) THERE IS CHARCOAL TRAFFIC BETWEEN~~

(12) INDEPENDANT SUPERVISION OF PCRS ~~TO~~ IS NEEDED TO HELP THE IMPLEMENTATION OF SOCIAL AND ENVIRONMENTAL MEASURES.
~~FOR~~ CARE, WORLD VISION, HABITAT FOR HUMANNATARIAN ETC CAN BE USED. WWF FOR ENVIRONME

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: ZESCO

Date: 18-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

Consultant's representative(s):

- Philippe Alary Paquette
- Benard T. Gomo
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Zambia, the Districts of Kasama, Mbala, Mungwi and Nakonde (Northern and Muchinga Provinces) over a distance of approximately 200 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive

impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
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- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with AMC, has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
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- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Adjust scope of work with find project design
   - ↳ substation in Nakonde (400-330 kV)
   - ↳ 330 kV to Kasama + substation
   - ↳ Double circuit 330 kV to Kabwe
2. Social issues : subsistence farming, shifting cultivations, presence of shrines, unemployment
3. Migratory birds in wetlands
4. Stream crossings, deforestation, opening new areas to deforestation, compensation # for felled trees in forest reserves
5. Acceleration of deforestation for charcoal production/export to TZ → corridor # 3

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Name	Function	Signature
[illegible]	, Senior social scientist ental technician-hydrology hief engineer, Transmission projects Environmental Manager	

On behalf of the Consultant:

Name	Function	Signature
Philippe Alary-Paquette	EIA coordinator, Genivar	
Bernard T. Gomo	EIA specialist, AMC	

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: Ministry of Lands, Natural Resources & Environmental Protection

Date: 18-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

-
-

Consultant's representative(s):

- Philippe Alary-Paquette
-
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

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- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Zambia, the Districts of Kasama, Mbala, Mungwi and Nakonde (Northern and Muchinga Provinces) over a distance of approximately 200 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA Regulations*;

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impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

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- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with AMC, has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

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- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Resettlement, using satellite imagery
2. Use up-to-date topographic/satellite/mapping for ESIA completion
3. The required information can be Superimposed on the other Topographical maps / Satellite imagery in order to check if there has been any Changes. For a detailed information maps I will Suggest of 1:50,000 Scale map sheets to be used in the project and with Survey Department can be incorporated in all GIS related matters.
4.
5.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

cartographer

Name	Function	Signature

On behalf of the Consultant:

Philippe Alary-Paquette, EIA coordinator

Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: Ministry of Agriculture & Livestock

Date: 18-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

➢

Consultant's representative(s):

➢ Philippe Alary-Paquette

➢ Benard T. Gomo

➢

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

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- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Zambia, the Districts of Kasama, Mbala, Mungwi and Nakonde (Northern and Muchinga Provinces) over a distance of approximately 200 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

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- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Corridor #2: Farm development along Tazara corridor. Re: small & medium owners
2. Consider existing farm block & farm block projects
3. Consider resettlement & compensation issues
4. Mbesuma ranch on corridor 1 + future rice cultivation area in floodplain → prefered corridor
5. Allow agricultural activities in wayleave

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Name	Function	Signature
	Director, Agriculture AGRIC SPECIALIST - LH.	

On behalf of the Consultant:

Name	Function	Signature
Philippe Alary-Paquette Benard T. Gomo	ESIA coordinator	

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: ZEMA

Date: 18-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

➢

Consultant's representative(s):

➢ Philippe Alary-Paquette

➢ Bernard T. Gomo

➢

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

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During the meeting, the following project background information was provided by the Consultant:

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6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Resettlement + agricultural activities
2. Wetlands, waterways, flora, fauna, forest
3. Submit scoping report & ToRs directly, no project brief ↳ Otherwise, follow EIA Regulation requirements
4. Add any relevant issues as they come up during the EIA process
5.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

, EIA Inspector
,, Acting senior Inspector, EIA 28/3

Name	Function	Signature

On behalf of the Consultant:

Philippe Alary-Paquette, EIA Coordinator, Genivar
Bernard T. Como, Environmental consultant, AMC

Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization:

Date:

1. PARTICIPANTS

Consulted organization's representative(s):

-
-
-

Consultant's representative(s):

-
-
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

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6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1.

2.

3.

4.

5.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Name	Function	Signature

On behalf of the Consultant:

Name	Function	Signature

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: Zambia Wildlife authority

Date: 9-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

- See list of presence
-
-

Consultant's representative(s):

- Antoine Moreau
- Philippe Alary-Paquette
- LEONARD LUKANGA

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

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During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Zambia, the Districts of Kasama, Mbala, Mungwi and Nakonde (Northern and Muchinga Provinces) over a distance of approximately 200 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive

impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
    - Scoping study and drafting of EIA's Terms of Reference (in progress);
    - ToR approval by national authorities;
    - Undertaking of environmental and social baseline studies;
    - Impact identification and assessment;
    - Preparation of Environmental and Social Management Plans (ESMP);
    - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada, in collaboration with AMC, has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Transmission lines may bring about damage to vegetation and wildlife habitat through way-leave clearance;
- Transmission lines may have effects on land use and restrict agricultural activities within right-of-way;
- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Avoid resettlement in areas adjacent to protected areas
   Social impacts, including HIV & STDs
   NEED TO CONSULT THE RESETTLEMENT DEPARTMENT
2. Consult communities in the floodplains area in order not to hinder their subsistence activities
3. Ensure no RAMSAR site is affected
4. -Increased poaching if opening of new territory
   -Increased human-wildlife conflicts
5. Sensitize people + workers to dangerous wildlife
6. Main impact: opening of wayleave
   ↳ Include mitigation measure: compensation of the deforestation → See forest department to find where

Voir verso dernière page

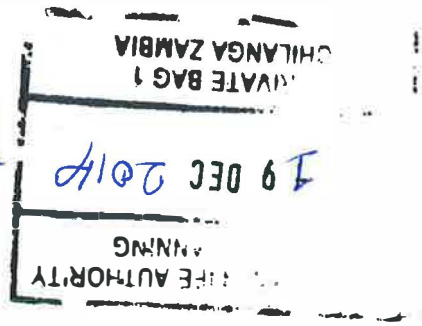
7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Senior Planning Officer



Name	Function	Signature

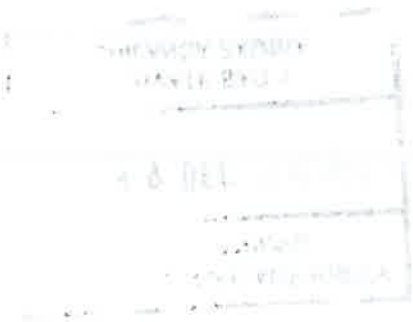
On behalf of the Consultant:

Philippe Alary-Paquette EIA Coordinator
Antoine Moreau, Lead Social Specialist
Leonard Lukanga Logistics Officer, AMC

Name	Function	Signature

(7) Inventory private game ranches or wildlife estates in the area

(8) Consult National Heritage Commission

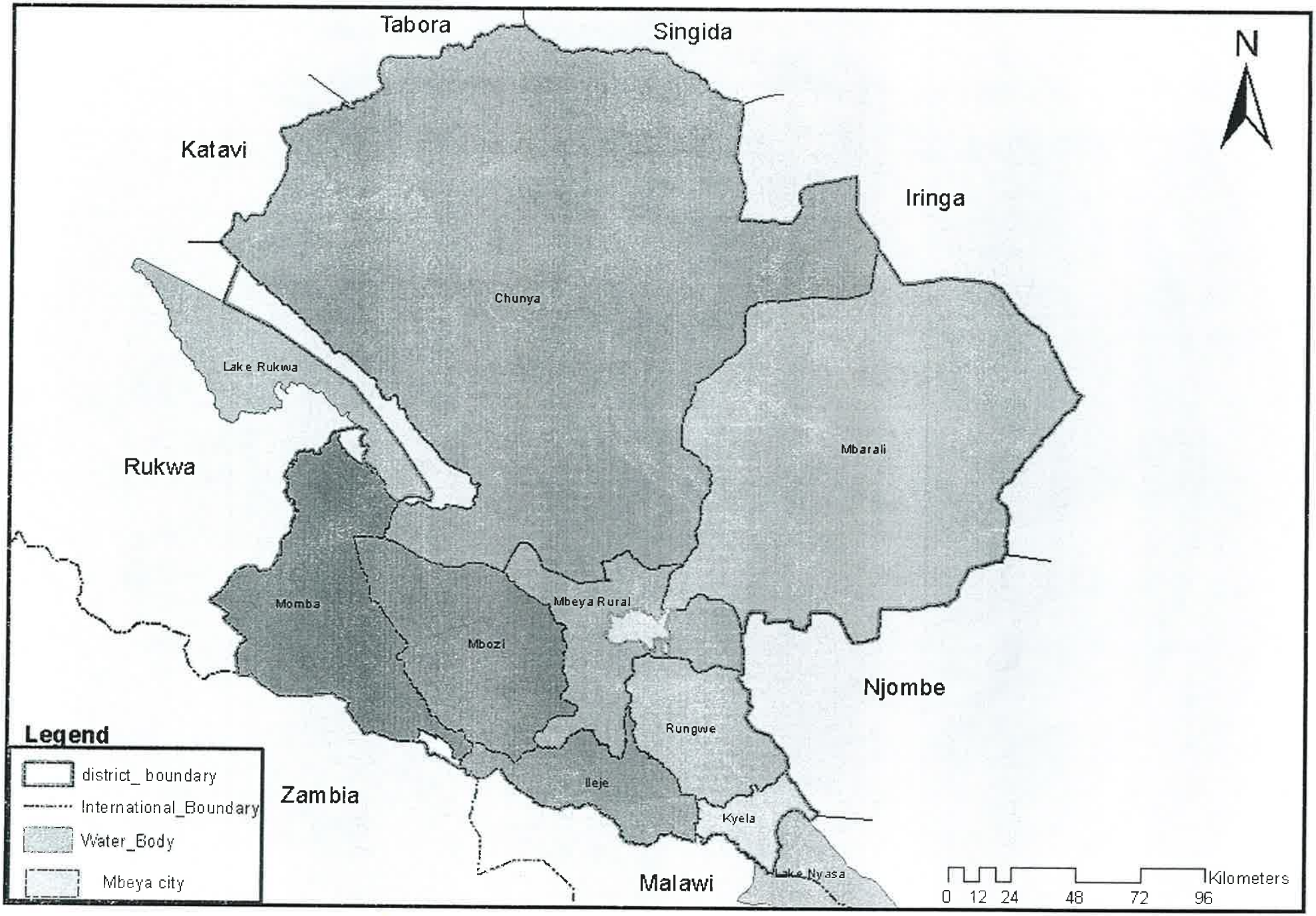


Tanzania – Zambia Power Transmission Line Project

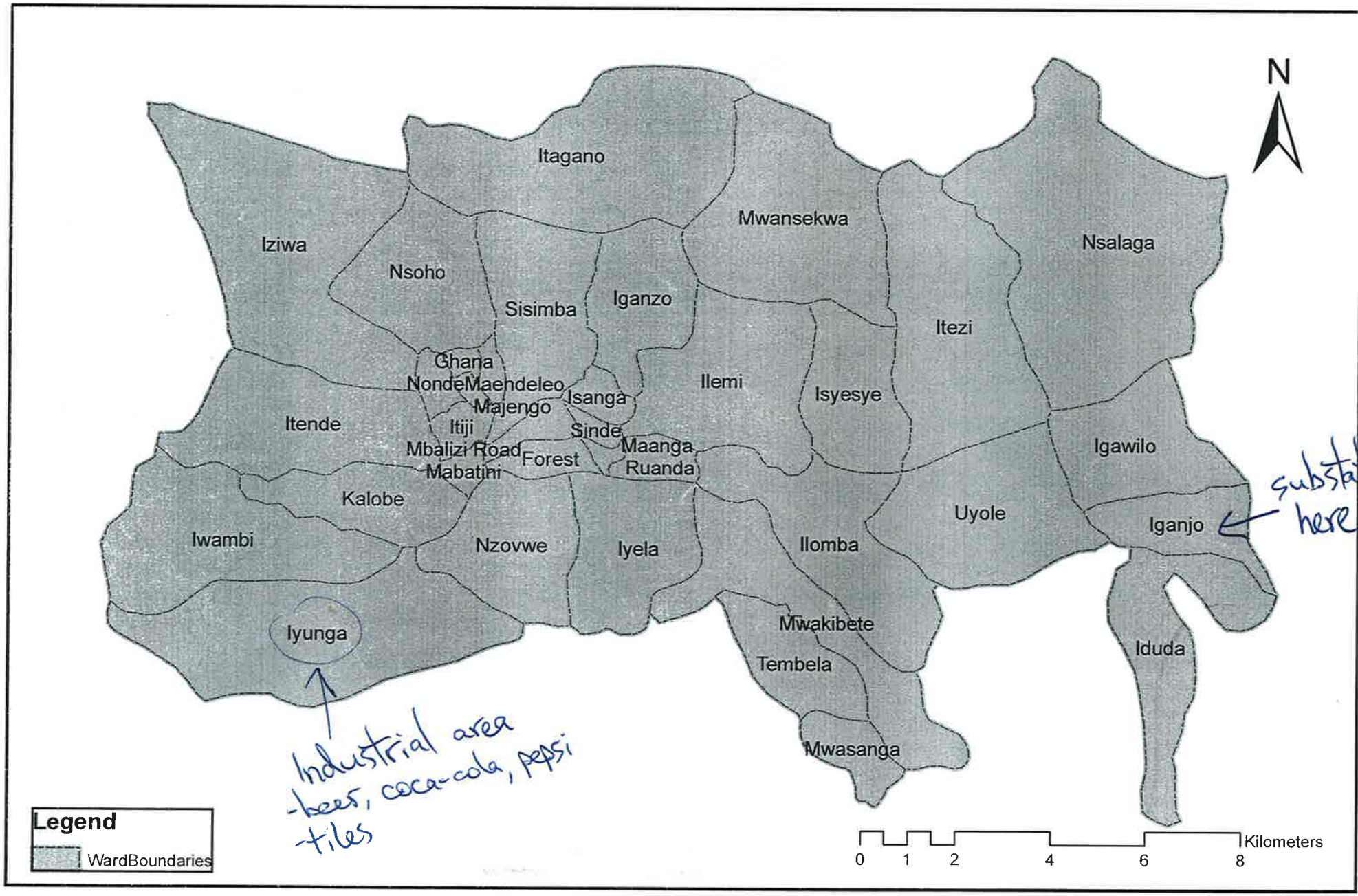
Environmental and Social Scoping Study

Stakeholder information and consultation meetings - ESIA /RAP Inception phase

Date	Name / Surname	Fonction	Organization	Signature
19/12/13		WARDEN	ZAWA	
19/12/13		Senior Planner	ZAWA	
〃		Planning Officer	ZAWA	
19/12/13		Wildlife Ecologist	ZAWA	
		intern	ZAWA	
19/12/13		Intern	ZAWA	
19/12/13		Intern	ZAWA	
19/12/13		PROCUREMENT OFFICER	ZAWA	
19/12/13		Wildlife Ecologist	ZAWA	
19/12/13		planning dep.	ZAWA	
19/12/13		Research dept.	ZAWA	
〃		Head of Planning	〃	



National Bureau of Statistics 2012


N
Itagano
Mwansekwa
Iziwa
Nsoho
Sisimba
Iganzo
Nsalaga
Itezi
Ghana
Nonde
Maendeleo
Majengo
Isanga
Ilemi
Isyesye
Itende
Itiji
Sinde
Mbalizi Road
Forest
Maanga
Ruanda
Mabatini
Igawilo
Kalobe
Uyole
Iganjo
Iwambi
Nzovwe
Iyela
Ilomba
Iyunga
Mwakibete
Tembela
Iduda
Mwasanga
Industrial area
-beer, coca-cola, pepsi
-tiles
Legend
WardBoundaries
0 1 2 4 6 8
Kilometers

Environmental and Social Scoping Study for the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project

Meeting minutes

Consulted Organization: Kitulo National Park

Date: 12-12-2013

1. PARTICIPANTS

Consulted organization's representative(s):

Consultant's representative(s):

- Philippe Alary-Paquette
- Antoine Moreau
-

2. MEETING OBJECTIVES

The meeting has allowed the Consultant to: a) briefly present the Tanzania (Mbeya) – Zambia (Kasama) Power Interconnection Project, its objectives and main components, (b) provide information on steps and deadlines for the completion of the EIA and RAP studies, and (c) document the consulted organization's concerns and expectations on both the Project and the EIA and RAP process.

3. PROJECT OVERVIEW

During the meeting, the following project background information was provided by the Consultant:

- The Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NBI/NELSAP) has embarked on the creation of a regional power market amongst the NELSAP Countries through development of regional power infrastructure and exchange in the Nile Equatorial Lakes (NEL) region;

- The Governments of Zambia, Tanzania and Kenya have agreed to connect their power systems with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration;

- The project is being developed in multiple phases, most of which are already at an advanced preparation stage. The remaining section that needs final preparation is the Mbeya (Tanzania) – Kasama (Zambia);

- Tanzania and Zambia have therefore agreed to carry out last preparation of the Mbeya – Kasama Interconnection transmission line (400 kV), which is approximately 300 km long, through the auspices of the NELSAP. This includes the completion of an Environmental and Social Impact Assessment and Resettlement Action Plan study, accordingly with respective national regulations;

- Although unknown at this stage, the route of the proposed power transmission line is likely to affect, in Tanzania, the Districts of Mbeya and MBozi (Region of Mbeya) over a distance of approximately 100 km.

4. PRESENTATION OF THE EIA PROCESS

During the meeting, the following information on the environmental impact assessment (EIA) process was provided by the Consultant:

- Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National *EIA and Audit Regulations*;

- The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive

impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

- The implementation of the EIA study is expected to occur over a period of 8 months. The main stages are as follows:
    - Scoping study and drafting of EIA's Terms of Reference (in progress);
    - ToR approval by national authorities;
    - Undertaking of environmental and social baseline studies;
    - Impact identification and assessment;
    - Preparation of Environmental and Social Management Plans (ESMP);
    - Preparation of environmental impact statement report and submission to national authorities for review and approval.
- Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;
- WSP Canada has been mandated to undertake the EIA study.

5. ENVIRONMENTAL AND SOCIAL ISSUES POTENTIALLY ASSOCIATED TO THE PROJECT

The following issues were mentioned by the Consultant as potential negative impacts that are generally associated to power transmission line projects:

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Transmission lines may bring about damage to vegetation and wildlife habitat through way-leave clearance;
- Transmission lines may have effects on land use and restrict agricultural activities within right-of-way;
- Transmission lines may have effects on migratory birds and low flying aircrafts;

- Construction works may disturb seasonal crops, affect nearby population and, if inadequately undertaken, induce environmental contamination;
- Transmission lines may, for safety reasons, require people to resettle outside the way leave.

6. CONCERNS AND EXPECTATIONS EXPRESSED BY THE CONSULTED ORGANIZATION

Concerns and expectations expressed by the consulted organization are summarized below:

1. Migratory birds
2. Encroachment by farm expansion
3. Black market of orchid potatoes going into Zambia
   & ground orchids
4. Landscape
5.

7. CONCLUSION

The Consultant has expressed its gratitude to the consulted organization for the time allocated and has emphasized that this is the beginning of an ongoing collaborative process that will continue throughout the implementation of the EIA.

SIGNATORIES

On behalf of the consulted organization:

Name	Function	Signature
Mzimbe	Chief Park Warden	
	Outreach warden	

On behalf of the Consultant:

Name	Function	Signature
Philippe Alary Paquette	ESIA coordinator	
Antoine Moreau	Head social specialist	

APPENDIX

7-4 *MINUTES ROUND 3A*

Meeting Minutes

Meeting: Scoping Meeting for the Proposed Tanzania-Zambia Interconnector Power line, Environmental and Social Impact Assessment (ESIA)

Date Held: 28/02/2014 **Time:** 14:30 hrs **Venue:** Provincial Headquarters Conference Hall

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Sunday Ngambi, Peter Mwenya, Colonel Mumba	Department of water affairs, aids council and chief police in command north.	Knowing that electricity tariffs are very high in Zambia, so how will the project bring down the costs in line with what you have shown us in the presentation?	The project has a potential of bringing down the investment costs for nearby areas that do not have power at present. For example, If connection is required today at the Mbesuma Pontoon at the Chambeshi River; the only option would be to connect from Kasama which is 100 km metres, now with this project was implemented and the nearest point to the Powerline was 20km from the pontoon, the investment cost would significantly be lower. This project is an investment for future openings that really will cut down the cost of connecting power on projects such as the Rural Electrification **- Benard Tembo**.	Community Benefit
		Looking at the magnitude of the project, the potential impact of HIV AIDS will be very high. What measures will be put in place to mitigate the impact of this disease?	This project is just on feasibility study now and part of the study which is the socioeconomic study will look at the social and economic activities surrounding the proposed corridors including the prevailing HIV/AIDS situation and projecting the impacting for project implementation. In most projects there is labour migration that have negative impacts HIV/AIDS unfortunately. On so as the Project (as we go on with the studies) we work with organisations like AIDS COUNCIL to see how best we could mitigate HIV and related issues **- Benard Tembo**.	HIV/AIDS Issues
		What happened to the area assessment that was done for the same project which was funded by the World Bank in the past?	We don't have any information about the previous World Bank funded assessments or project. Maybe our colleagues from government would be in the better position to answer that question and not for the private company like ourselves **- Benard Tembo**.	Project related issues and Financing
Mr Simbeye	Kasama Resident	The presentation has only highlighted the bright side of the project. What are the possible challenges or difficulties that the project will bring in the future?	Like every project, if implemented this project has a possibility of impacts or challenges. Among the possible challenges are the resettling people and also the propagating of HIV / AIDS. We are here today in this meeting so that we start early identifying both the positive and negative issues that will need to be addressed on this project. We will then at a later stage develop appropriate mitigation measures **- Benard Tembo**.	Project Benefits and Impacts
		When will the project commence and how much will it cost?	The project is just at the feasibility study and a lot of activities need to be done first before the actual	Project Implementation

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
			implementation schedule is known – activities such as final corridor selection, engineering design etc. So at the final consultation meeting we will be able to know when the project will likely start **- Benard Tembo.**	
Sunday Ngambi, Tryson Lweendo	Department of Housing and Planning	What compensation plans will you put in place, knowing that people have resettled everywhere?	The ESIA study beginning now will help us to know how people will be resettled along the proposed areas. And after selection of the preferred corridor detailed socioeconomic analysis will be done that could lead to resettlement of the affected households as well as development of Resettlement Action Plan (RAP) **- Benard Tembo.**	Compensation
		Why Kasama and Mbeya. Why not other towns?	The project is meant to connect people as well in areas where it's possible to bring in more power or take out power. Kasama and Mbeya were chosen on that basis. It's worth noting that Kasama and Mpika are the potential options on the Zambian side **- Benard Tembo.**	Community benefit
Colonel Mumba	Department of Water Affairs	During the world bank funded project from kasama to Kenya, people were resettled and compensated. So how many times are we going to be paying for the same project?	Like we said earlier, the World Bank Project was a different project and this is different one. This is under the Nile Basin Initiative and so it's difficult to comment on the project I was not involved in and later on aware. We can however take the comments to Zesco or other relevant government institutions **- Benard Tembo.**	Project Implementation

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

28/02/2014

	Date	Name / Surname	Fonction	Organization	Signature
17	28/02/14		TEACHER/DIRECTOR	KABANGA TRUST SCHOOL	
18	28/02/14		Executive Officer	Provincial Admin	JBliga
19	28/2/14		SESO-SS	PROVINCIAL EDUCATION	
20	28/02/14		Resident Engineer	Provincial Education office	
21	28/02/14		Statistical Officer	Ministry of Tourism & Arts	
22	28/02/14		PPU	Provincial Planning Unit	
23	28/02/14		O.I.C	CIVIL AVIATION	
24	28/02/14		A/ PROV METEOROLOGICAL OFFICER	METEOROLOGICAL	
25	28/2/14		MANAGER	R.T.S.A	
26	28/2/14		NATIONAL AIDS COUNCIL		
	28/2/14		M&E OFFICER	NATIONAL AIDS COUNCIL	
			Chairmans sun-monk/Supervisor	KABANGA M.C	
			AEIR/Resident	ZAR-MISANFU	

KASAMA – PPU CONFERENCE HALL

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

28/02/2014

Date	Name / Surname	Fonction	Organization	Signature
28/02/14		POLICE	ZP	
"		YOUTH DEPT	MINISTRY OF Y/SPORTS	
"		CHIEF AFFAIRS	MINISTRY OF CHIEFS	
"		PROV-AGR/COORDINATOR	MINISTRY OF LIVE STOCKS	
"		CIVIL ENGINEER	R.D.A	
		PROV-WATER/OFFICER	WATER AFFAIRS	
		F-RA-SUPERVISER	KASAMA LODGE	
		EX MEMBER	CHAMBER OF COMMERCE	
		PROV-ACCT	PROV-ADMIN	
		FAULTS MAN	ZESCO	
		INSPECTOR	MINI OF EDUCATION	
		O-I R	OFFICE EQUIPMENT	
		PLANNER	ZESCO	
		SURVEY/ASSISTANT	LANDS	
		REGIONAL MANAGER	DEC	
		BUILDINGS	BUILDING DEPT	

KASAMA — PPU CONFERENCE ROOM

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

28/02/2014

	Date	Name / Surname	Fonction	Organization	Signature
1	28/02/14		ADC	KASAMA M. COUNCIL	
2	28/02/14		PLANNER	PPH	
3	28/02/14		Civil Engineer	Kasama M. Council	
4	28/2/14		Forestry Officer	forestry Dept	
5	28/2/14		FORESTRY OFFICER	FORESTRY DEPT	
6	28/2/14		Forestry Office	Forestry Dept	
7	28/2/14		INTERNAL AUDITOR	PROVINCIAL ADMINISTRATION	
8	28/02/14		SENIOR AUDITOR	LOCAL GOVT	
9	28/02/14		VICE CHAIRMAN	KDFA	
10	28/2/14		AG/PCDO	Comm. Dev	
11	28/2/14		RIO	Immigration	
12	28/02/14		prov. sports dev Coord SPORTS	SPORTS	
13	28/02/14		PMC	FRA	
14	28/2/14		PEO	FORESTRY	
15	28/2/14		Prov. Agric. Officer	PROV. Hqtrs	
16	28/2/14		Regional Planning Statistician	CSO	

Meeting Minutes

Meeting: Scoping Meeting for the Proposed Tanzania-Zambia Interconnector Power line, Environmental and Social Impact Assessment (ESIA)

Date Held: 01/03/2014 **Time:** 14:30 **Venue:** Along Proposed Corridor #2

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Almost all the people spoken to during focused group meetings	Villages along Corridor #2	Requesting for corridor #2 to be selected so that the people could also benefit from the power in the long run	The request would be taken to the relevant authorities **- Benard Tembo.**	Project Implementation

CHIMBA

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

01/02/2014

Date	Name / Surname	Fonction	Organization	Signature
03/				
		Bussnessman	Chimba	
		Bussnessman	chimba	
		"	chimba	S.S.
		r farmer	chimba	Jande
		FARM	Chimba	B-M.
		farmer	Kapundu	
		farmer	Chimba	
		farmer	chimba	
		farmer	Calombo	
		C. DRIVER	CHIMBA	
		TEACHER	CHIMBA	
		Business man	CHIMBA	J. Chanda
		farmer	CHIMBA	
		Health worker	CHIMBA	R. Chanjili

Meeting Minutes

Meeting: Scoping Meeting for the Proposed Tanzania-Zambia Interconnector Power line, Environmental and Social Impact Assessment (ESIA)

Date Held: 03/03/2014 **Time:** 12:00 to 17:00hrs **Venue:** Along Corridors #1 and 4

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Lizzy Banda	Environmental Planner, Isoka District Council	How will the project ensure that endangered species of trees are not affected especially during construction phase?	Thorough assessments, including flora, will be done during all the stages beginning now aimed at identifying endangered species and then proposing appropriate mitigation measures such as changing the course of the corridor where necessary **- Benard Tembo.**	Environmental Assessment
Pasmore Luapula	District Planning Officer, Isoka District Council	The Districts welcomes the project and we know that powerline projects do not have a lot of issues besides the land required for the way leaves		Project Implementation
Mesungo Sichizya	Farmer, Katongo Village	Are the local people going to get jobs from the project?	The local people will be given first priority when it comes to jobs **- Benard Tembo.**	Community Benefit
Timothy Siame	Farmer, Katongo Village, Kalungu Village	Request so that the corridor passing in our area is selected so that the communities could benefit from the power connection.	We will not assure the people that this corridor will be selected but we have taken note of your requested and we will take it to the relevant authorities **- Benard Tembo.**	Community Benefit
Keni Sinkala,				
Emeldah Nambeya				
Kasawa Alinani				
Joseph Sulwimba				
Kafula Evans				
Peter Saukani				
Reagan Simuyala				
Josephine Susa				

~~CHIMSA~~ KALUNGU

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

02/07/2014

Date	Name / Surname	Fonction	Organization	Signature
		DRIVER	KALUZUNGU	
		SIM REGISTRATION	KALUNGU	
		FARMER	KALUNGU	
		TRANSPORTER	KALUNGU CHECK POINT	
		BUSINESS MAN	KALUNGU.	
		BUSINESSMAN	Kalungu	
		B/LAYER	KALUNGU	
		BUSINESS	KALUNGU	
		BUSINESS	KALUNGU	
		FARMER	MAKUNGA.	
		FARMER	KALUNGU	
		FARMER	KALUNGU	
		farmer	Kalungu	A H Banda
		F/Busnes	Kalungu	F. Mutambo
		F/Busines	Kalungu	
		COUNCIL WORKER	Kalungu	

~~KATANGA – PPC CONFERENCE HALL~~

KATONGO

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

~~28/02/14~~ 03/03/14

	Date	Name / Surname	Fonction	Organization	Signature
30	~~28/02/14~~		~~POLICE OFFICER~~	~~ZAMBIA POLICE~~	
31	~~28/02/14~~		~~Youth dept~~	~~MINISTRY OF YOUTH & SPORT~~	
32	~~28/02/14~~		~~CHIEFS AFFAIRS~~	~~MINISTRY OF CHIEFS~~	
	03/03/14		Farmer	Katongo	Simutakala
			Farmer	Kantongo	F Ndalamwe
			Farmer	Kantongo	
	03/03/14		farmer	Co-operative	
	03/03/14		Farmer	Co-operative	
	03/3/14		farmer	Kantongo	M. Nambaye
	03/3/14		FARMER	KANTONGO	
	03/3/14		B/MAN	KANTONGO	AMKaseng.
	03/03/14		B/man	KANTONGO	
	03/03/14		farmer	KANTONGO	Simutowe
	03/03/14		Farma	KANTONGO	Simuta
	03/03/14		farmer	Manyilla	
	03/03/14		farmer	~~KA~~ Co-operative	

~~KATANINA~~ ~~PRO~~ CONFERENCE HALL

KATONGO

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

~~28/10/2014~~ 08/08/2014

~~28/10/2014~~

Date	Name / Surname	Fonction	Organization	Signature
36 ~~28/10/2014~~		~~BUILDINGS~~	~~BUILDINGS DEPT~~	
		Driver	Association	
		Farmer	Co-operative	
		farmer	Kantongo	
		Farmer	Kantongo	E. Nambeye
		farmer	Kantongo	J. Nalwimba
		Farmer	KONTONGO	T. SIAME.
		Farmer	Kantongo	S K
		Famer	Chilowe	

ISOKA

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

03/03/2014

Date	Name / Surname	Fonction	Organization	Signature
03/03/2014		DISTRICT PLANNING OFFICER	ISOKA DISTRICT COUNCIL	
03/03/2014		Environmental Planner	Isoka District Council	

Meeting
Minutes

Meeting: Scoping Meeting for the proposed Tanzania –Zambia Interconnector power line Power Environmental and Social Impact Assessment (ESIA)

Date Held: 03/03/2014 **Time:** 09:00 hrs **Venue:** Mweetwa Guesthouse - Nakonde

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Given Sinkala, Erika Siame, Morris Sinkonde	Chief advisor, Village Secretary and residence, Chilonga Village	We have heard that people will be compensated, but history has shown from the number of projects that companies do not fulfil their promises. What assurance can you give us that this company will compensate the people?	The company will work closely with the government, the chiefs and all the relevant people/institutions to ensure that if there will be that will be people will require to be compensated, and they will get a fair compensation in line with the international requirements - **Benard Tembo**.	Compensation /Community benefit
		If someone was to be resettled, can they choose his or her preferred place to be resettled?	As we go on with the EISA study and from the assessment it's seen that some people have to be resettled, options will be offered to the affected people in consultation with the government departments, traditional leaders and the affected people - **Benard Tembo**.	Community Benefit / Compensation
		What criterion is being used to find the best corridor?	The EISA study will used to determine the best corridor for the project, hence the need for consultations like we are doing. Inputs from the people consulted will also be used to determine the best corridor and this is expected within the next few weeks. Full studies will then be conducted on the selected corridor - **Benard Tembo**	ESIA Process / Corridor Selection
Sichizya katindi	Village headman, Kafwimbi village	Who should determine how much to be compensated, the affected or the company?	The first stage will be to determine if there will be people that will be affected along the preferred corridor once selected. Then assessments will be made in terms of what the affected people have to determine the compensation system. This will be done in consultation with the affected people and through the government approved system - **Benard Tembo**	Compensation Community Benefit
		Where will the workers for the project come from?	The project like this one will require both skilled and unskilled labour force. So the companies will engage people based on the skill. If skilled people will be found from the communities, first preference will be given to them but all the unskilled man power will have to come from the affected communities. People should, however note that the nature of the project will not provide a lot of jobs such as in the mining industry - **Benard Tembo**	Employment / Community Benefit

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Stanley Sikaona	Secretary, Chilonga Village	Zambia has been exporting electricity to Tanzania and yet electricity is cheaper in other countries such as Tanzania but expensive where this electricity is coming from. Is the said project going to bring some improvement in terms of the cost of electricity?	The issue electricity tariffs being high locally is the matter that is beyond our scope as consultants. We are here working on the Powerline interconnector project and we think the best people who could handle the issue of the tariffs are either the government or Zesco. We can only encourage the people with this question to visit ZESCO offices in your area. ZESCO team will be in the better position to explain the reason why - **Benard Tembo**	Electricity Tariffs / Community benefit

NAKONDE

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

03/03/2014
~~28/02/2014~~

	Date	Name / Surname	Fonction	Organization	Signature
37	~~28.02.2014~~	~~KENNEDY NYOMUI~~	~~AGRIC RESEARCH~~	~~ZARI MISSAMFU~~	
(1)	3/03/14		FARMER	CHIYANGA VILLAGE SECRETA	
2	"		FARMER	KATOZI VILLAGE	
3	"		FARMER	MUKOMA	
4	"		FARMER	CHIYANGA VILLAGE HEADMAN	
5	"		"	(CHIEF'S REP.) CHILONGA VILLAGE	
6	"		"	CADE NTIDO1	
	"		VILLAGE HEADMAN	CHIYANGA	
	"		FARMER	KATOZI	G SIYAMBE
	"		FARMER	KATOZI	I NAKAIVALA
	"		FARMER	KATOZI	
	"		FARMER	YOLO	
	"		FARMER	YOLO	
	"		FARMER	YOLO	
	"		FARMER	Mulenda	L. Sichone
	"		FARMER	MULENDA	

IVA ROUTE

~~KASAMA – DRUM CONFERENCE HALL~~

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

03/03/14

~~28/02/2014~~

Date	Name / Surname	Fonction	Organization	Signature
38 ~~01~~		CHAMBESHI MARKET ~~SUPERVISOR~~	~~KASAMA MUNICIPAL C~~	
		FAMER.	MATIPA.	
		V. Headman	Mukuti	M. Simumba.
		Famer	Mulenda	J. Nakamba.
		FARMER	V/GE HEADMAN WULONGO	T. Sikanyika
		V/ HEADMAN	MABWA	S. Sikaona
		RESIDENT	KATOZI EXTETION	H Hamberge.
		~~V/Head Man~~ FAMER	V/HEADMAN MUN	E. Sambeye
		FAMER	V/SECRETARY	
		FARMER	NTINDI	
		V. Secretary	NEGA	Signature
		V. Headman	NEGA	
		V. SECRETARY	MALANJE	
		V/HEADMAN	MALANJE	
		SECRETARY	MABWA	
		SECRETARY	WULONGO	

NAKONDE

Tanzania – Zambia Power Transmission Line Project

~~Environmental and Social~~ Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

03/03/2014

	Date	Name / Surname	Fonction	Organization	Signature
27	~~28/02/14~~		~~CIVIL ENGINEER~~	~~ROADS DEVELOPMENT AGENCY~~	
28	~~28/02/14~~		~~Prov Agric Coordinator~~	~~Min of Agric & LIVESTOCK~~	
29	~~28/02/14~~		~~PROVINCIAL OFFICER~~	~~WATER AFFAIRS~~	
	03/03/14		Farmer	Musesengoma	
	03/03/14		Farmer	musesengoma	
	03/03/14		DISTRICT ADMN. OFFICER	DC'S OFFICE	
	03/03/14		FARMER	CHILENJE	
	03/03/14		Farmer	Nchelenje	
	03/03/14		V/CE. SECRETARY	NTINDI VILLAGE-NAKONDE	
	03/03/14		CDO	COUNCIL	
	03/03/14		AREA MANAGER	ZESCO	

Meeting Minutes

Meeting: Scoping Meeting for the Proposed Tanzania-Zambia Interconnector Power line, Environmental and Social Impact Assessment (ESIA)

Date Held: 04/03/2014 **Time:** 07:00 to 18:00 **Venue:** Along Corridor #1 from Isoka to Kasama via Mungwi

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
James Chunda	Kaso Village	How are the people going to benefit in terms of power when the power line is constructed?	The benefit will be there in the sense that it will be easier for projects such as the Rural Electrification Authority to connect more rural areas at a cheaper cost when there is a high voltage Powerline nearby as compared to doing their own Powerline stretching many hundreds of kilometres. - **Benard Tembo.**	Project Impacts
Scola Lupinsha	Kaso Village	The people are looking forward to such project as they are an engine for development. We as the people will wait to hear more from you as consultants on this project and we urge you to pass the line near Kaso/TongoTongo area so that the people can benefit.	We appreciate your comments. We will continue engaging the people **- Benard Tembo.**	Community Benefit
Choongo Muleya	Head Teacher, Tongotongo Basic School.	We urge you to make sure the powerline passes near Tongotongo as the benefit will be more here than anywhere else	We appreciate your comments. We will continue engaging the people **- Benard Tembo.**	Community Benefit
Kunda Evans	Farmer, Mbesuma Pontoon	What will be the benefit to the community?	The benefit to the people living near where the powerline will pass will be that it will be easier in future to get connected to the powerline **- Benard Tembo.**	Community Benefit
		How will the people of Mbesuma be affected with the project	The people living in the corridors maybe affected in the sense that there may be a potential for resettlement. The people may also be affected in a positive sense my getting jobs and an increased income **- Benard Tembo.**	Community Benefit

MBESUMA

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

04/03/2014

Date	Name / Surname	Fonction	Organization	Signature
		Farmer	Mbesuma	
		FARMER	MBESUMA	
04/03/14		Business/Farmer	MBESUMA	
04/03/14		ESCO WORKER	ESCO	
		BUSUMA	AAS	
		Farmer	MBESUMA	
		Farmer	MBESUMA	
		Farmer	MBESUMA	
				EKAGWA
		ESCO	MBESUMA	
		Farmer	MBESUMA	
		VS farmer	MBESUMA	
		Farmer	KASO	
		Farmer	MBESUMA	
		FARMER	MBESUMA	
		FARMER	MBESUMA	
		FARMER	"	

MBESUMA

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

04/10/2024

Date	Name / Surname	Fonction	Organization	Signature
04/02/24		FARMER	BESUMA	Ali
"		farmer	Mbensuma	J. Bwalya.
"		FARMER	MBESUMA	
"		FARMER	MBESUMA	
"		FARMER	MBESUMA	

KASO / TONGOTONGO /

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

04/03/2014

Date	Name / Surname	Fonction	Organization	Signature
04/03/14		FARMER	KASO	
		FARMER	KASO.	J. Chimuka
		FARMER	KASO	E Kapondo
		FARMER	KASO	J. Sasa
		11	11	Mwela
		farmer	mutale lyaruseni	
		FARMER	Kaso	J Katongo
		FARMER	KASO	S. LUPINSHA
		D. HEAD TEACHER	TONGO TONGO	
		HEAD TEACHER	TONGOTONGO	

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

04/03/2014

Date	Name / Surname	Fonction	Organization	Signature
04/03/2014		Socio-Economic planner	Council	

Meeting Minutes

Meeting: Scoping Meeting for the Proposed Tanzania-Zambia Interconnector Power line, Environmental and Social Impact Assessment (ESIA)

Date Held: 05/03/2014 **Time:** 07:00 to 14:00 hrs **Venue:** Along Corridor #4 from Isoka to Mpika

Person Commenting	Community / Organisation	Issue Raised/Comment	Response Given - Responder	Category of Issue Raised
Pastor Kampasa Mwamba	Pastor	Will there be any compensation for the affected people?	All the affected people will have to be compensated after thorough assessments **- Benard Tembo.**	Community benefit
Annie Chiwala	Business Woman			Project Implementation

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study

Stakeholder information and consultation meetings - Preliminary phase

05/03/2014

Date	Name / Surname	Fonction	Organization	Signature
05/03/14		VILLAGE HEADMAN	SHIWANGANDU	
05/03/14		BUSINESS WOMAN	SHIWANGANDU	
05/03/14		BUSINESS WOMAN	SHIWANGANDU	
05/03/14		Pastor	Pentecostal Assemblies	
05/3/14		District Works Supe	Ministry of Works & Sup	
05/03/14		DDPO – Mpika	Mpika Council	
"		D. Director of Works	"	B. NGAMBWE

African Mining Consultants Limited,
1564/5 Miseshi Road,
P.O. Box 20106, KITWE.

ENVIRONMENTAL / SOCIAL IMPACT ASSESSMENT FOR THE TANZANIA/ ZAMBIA INTERCONNECTION PROJECT

WSP-Canada, in collaboration with African Mining Consultants (AMC) Limited, is undertaking an Environment and Social Impact Assessment for the proposed Mbeya (Tanzania) to Kasama (Zambia) Power Transmission Line. The study has been commissioned by the Nile Basin Initiative under its Nile Equatorial Basin Subsidiary Action Program (NELSAP).

In compliance with the Environmental Management Act (No. 12 of 2011) and appropriate International Best Practices, NELSAP is required to submit an Environmental and Social Impact Assessment (ESIA) report to the Zambia Environmental Management Agency (ZEMA) for consideration. WSP-Canada and African Mining Consultants (AMC) were appointed by NELSAP to conduct an ESIA for the project.

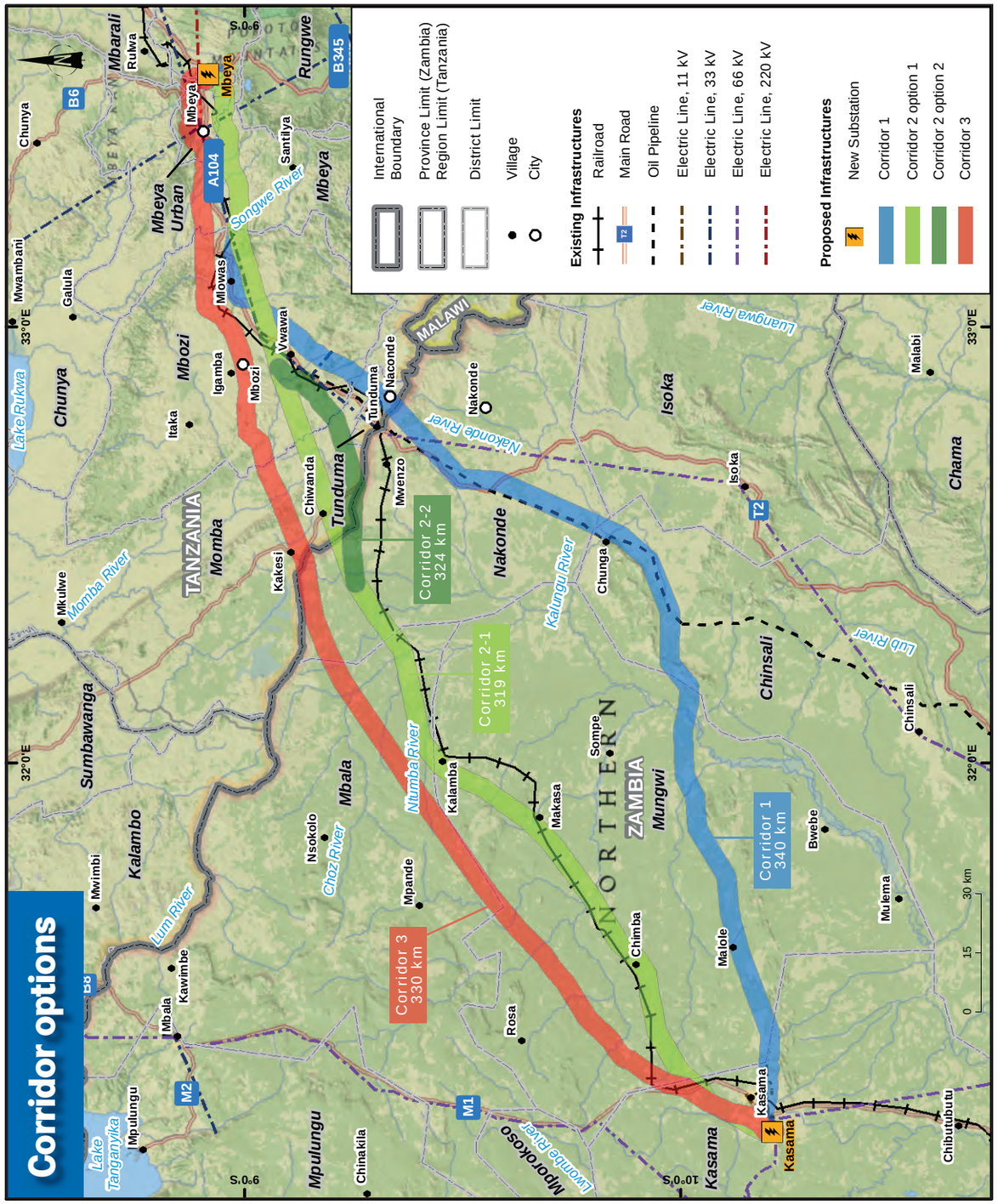
To ensure that public views are taken into account during the preparation of the Terms of Reference, consultative meetings with key stakeholders are planned as shown in the table below.

Area	Venue	Day	Time
Kasama	Provincial Planning Unit Conference Hall	February 28, 2014	14:30hrs
Kasama to Nakonde	Communities along Rail Line	February 28, 2014 to March 2, 2014	open
Kasama to Nakonde	Communities along Rail Line		open
Nakonde	Mwetwa Guest house	March 3, 2014	09:30hrs
Nakonde to Kasama	Communities along the isoka – Mbesuma - Kasama Route	March 3, 2014 to March 4, 2014	open
Nakonde to Kasama	Communities along the isoka – Mbesuma - Kasama Route		open

Should you require any further information, you may contact the following:-

Geoffrey Siame **Environmental Manager AMC** Cell +260 979 569 310 (GSiame@amc-africa.com)	**Benard Gomo Tembo** **Environmental Engineer, AMC** Cell +260 977 643 117 (gomobt@live.com)

10/02/2014





Contact

For more information, please contact:

NELSAP
M. Floribert **KANYARUSHATSI**
Engineer and Project Coordinator
fkanyarushatsi@nilebasin.org

WSP
M. Philippe ALARY PAQUETTE
Project Coordinator
Philippe.Alary.Paquette@wspgroup.com

The preparation of the ESIA and Resettlement Plan was mandated to WSP-Canada Inc., an international consulting firm experienced in conducting these types of studies.

WSP

Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP)



Tanzania-Zambia Power Interconnection Project

NILE BASIN INITIATIVE
Initiative du Bassin du Nil

TANESCO

ZESCO

Public information document
Prefeasibility phase
February – March 2014

Project Summary

The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Mbeya (Tanzania) to Kasama (Zambia).

The project is part of the ongoing regional energy integration process. It involves:

- The construction of a high voltage transmission line (400 kV)
- The construction of new electrical substations in Mbeya (Tanzania) and Kasama (Zambia)
- The construction of access and maintenance roads along the proposed power line

Three corridor options are being proposed for the electrical transmission line. The selection of the final corridor and transmission line route within the selected corridor will be made on the basis of the technical, environmental and social studies currently in progress.

Project benefits for the region

- Increased reliability and security of the electrical energy supply
- Connection of isolated national electricity grids
- Increased capacity for energy exchanges between the countries
- Encourage regional development through access to electricity at lower costs
- Optimal use of the energy produced in the region
- New opportunities for rural electrification



Potential impacts

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Wayleave clearance may bring about damage to vegetation and wildlife habitat;
- Restriction of land use and agricultural activities under the line (within wayleave);
- Transmission lines may have effects on migratory birds and low flying aircrafts;
- Construction works may disturb seasonal crops and affect nearby population;
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave.

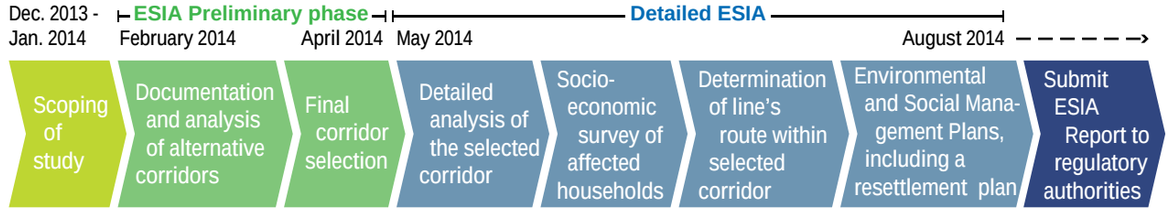
The Environmental and Social Impact Assessment

According to the existing laws in Tanzania and Zambia, an Environmental and Social Impact Assessment (ESIA), together with a compensation and resettlement plan, are prerequisites to the implementation of the Tanzania – Zambia Power Interconnection Project.

The ESIA aims to identify:

- Potential impacts on the natural environments (both physical and biological)
- Potential impacts on populations and human activities (social, cultural and economic)
- Applicable measures to mitigate negative impacts and to enhance positive impacts
- Required environmental and social monitoring and follow-up activities

Key steps of the ESIA process





Public consultation and disclosure

Information and consultation sessions with project stakeholders will take place throughout the ESIA process, including:

- Ministerial, administrative and customary authorities
- Government technical services
- Potentially affected communities and individuals
- NGOs, civil organizations and other interest groups
- Any other public and private stakeholders concerned by the project

Participants to public consultation sessions will have the opportunity to:

- Receive information about the project
- Express their concerns and expectations in relation to the project
- Comment on the preliminary results of the ESIA and the resettlement plan

Population Resettlement

The Tanzania – Zambia Power Interconnection Project will possibly displace some households, affect some agricultural lands and disturb other subsistence activities. Therefore, a Resettlement Action Plan (RAP) will be developed as part of the ESIA. The affected communities and their representatives will be consulted on compensation and resettlement issues. A socio-economic survey will also be conducted with the potentially affected households and individuals to determine the impact of the electrical transmission line.



APPENDIX

7-5 *MINUTES ROUND 2B*

REPORT N^{O} 131-23540-00

CONSULTATION REPORT

ESIA - Tanzania – Zambia Interconnection Project: Revised Scoping for the Kasama – Kabwe Section

Initial Consultations
July 28th to August 1st 2014

NELSAP

AUGUST 2014

WSP

CONSULTATION REPORT

ESIA for the Tanzania – Zambia Interconnection Project: Revised Scoping for the Kasama – Kabwe Section

Initial Consultations - July 28th to August 1st 2014

NELSAP

Report (final version)

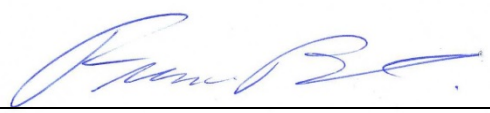
Project n^{o} : 131-23540-00
Date : August 2014

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www.wspgroup.com

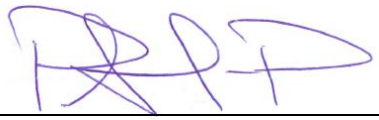
SIGNATURES

PREPARED BY



Francis Barbe, M. Env.
Stakeholder Engagement Coordinator

REVISED BY



Philippe Alary Paquette, LL.B., M.Env.
Project Coordinator

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APPENDIX A BACKGROUND INFORMATION DOCUMENT

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1 INTRODUCTION

As part of the revised environmental and social scoping exercise for the Kasama – Kabwe section of the Tanzania – Zambia Power Interconnection Project (the Project), a field observation and initial consultation mission was performed by WSP from July 28th 2014 to August 3rd, 2014. The initial consultations have consisted, for the most part, of individual interviews with central, provincial and district authorities and technical services, in addition to conservancy NGOs. These meetings highlighted some of the key environmental and social issues associated with the Project and for which a public, professional or legal concern arises. As such, this effort complements the consultations previously performed for the Mbeya – Kasama section, in December 2013 and March 2014.

Results from initial consultations for the Kasama – Kabwe section are briefly described hereafter, including the general consultation approach, the organizations and individuals that were met, and the key concerns and expectations that were raised. It is complemented by detailed meeting minutes and a register of participants' signatures, presented in Appendices. Consultation meetings were facilitated by Francis BARBE (WSP), Hélène CHOUINARD (WSP) and Bernard GOMO (AMC), with the participation of Stella KAYOPE and Monique NSANZA (ZESCO).

2 GENERAL APPROACH

2.1 ENGAGEMENT OBJECTIVES

- Provide stakeholders with updated information on the Tanzania – Zambia Power Interconnection Project and its ESIA process;
- Consult on key concerns and expectations associated with the Kasama – Kabwe section of the Project;
- Identify sensitive elements of the territory that should influence the determination of study corridor alternatives for the Kasama – Kabwe section;
- Consult on most suitable stakeholder engagement approaches;
- Identify and gather existing secondary data of relevance.

2.2 GENERAL AGENDA FOR MEETINGS

Meetings were generally structured as follows:

- Greetings and presentation of participants;
- Overview of the Project and the ESIA process;
- Discussion on concerns and expectations associated with the Project and power lines in general;
- Discussion on elements of the study area that should influence the determination of study corridor alternatives;
- Identification of existing secondary data of relevance;
- Discussion on preferred communication channels and stakeholder groups.

2.3 COMMUNICATION TOOLS

- Background information document on the Project and the ESIA process, in a project Memo format (see Appendix A);
- Printed maps of the study area (large format);
- Printed pictures (large format) of the type of towers that are likely to be used (single and double pylons options).

3 STAKEHOLDERS THAT WERE MET

Date	Organization	Individuals	Team
July 28	ZEMA – EIA unit	Constantino MWEMBELA, senior inspector EIA; Dickson KABONSE, inspector EIA	FB, SK
July 28	Min. of Local Government and Housing – Department of Physical Planning	Mukuka CHIBWE, assistant director	FB, SK
July 28	ZESCO – Department of Environment and Social Affairs	Elenestina MWELWA, Senior manager TMS; Bonje MVYUNDA, principal environmental scientist	FB
July 28	National Heritage Conservation Commission	Kagosi MWAMULOWE, Active executing director; Mudenda MEMILLAN, Chef cultural heritage office; Christabel SIMATAA, Assistant conservation officer anthropology	FB, SK
July 28	MLNREP – Department of Environmental Protection	Eplelilique MWEGYA, Chief officer	HC, BG, MN
July 28	MLNREP – Department of Forestry	Wiseman L. SANGULUBE, Chief of Forestry Officer; Deuteronomy KASARO, National REDD+ Coordinator	HC, BG, MN
July 28	Birdwacth International	Chaoma PHIVI, Biodiversity Monitoring; Kelvin MILANDAWIDE, Administration and Logistics	HC, BG, MN
July 29	ZESCO – Central Province	Mulonda BRIGHT, Regional manager Central – SD	FB, SK, MN
July 29	Central Province - Office of the Permanent Secretary	Abigail MALUKUTILA, assistant secretary; Gabriel MPONGUI, chief planner; Harry ZULU, senior planning assistant	FB, SK
July 29	Road Development Agency	Joseph Masinga, regional manager	FB, SK
July 29	Department of Forestry – Central Province	Godfrey MILUSOLEDA Provincial Forestry officer; Webby MWAPE, Principal Technician	FB, HC, BG, SK, MN
July 29	Department of Agriculture – Central Province	Patrick LONGWANI, Administrator; John TONGA, Land use activity	HC, BG, MN
July 30	Serenje District Council	Kennedy KAZANDA, district secretary; Precious MUKAMBA, district chief planner	FB, HC, BG, SK, MN
July 31	ZAWA – Mpika office	Peter S.INDALA, Ranger Operations; Rhoda N.KACHALI, Ecologist	HC, SK, MN
July 31	Department of Forestry – District of Mpika	Francis MUTALE, District Forestry Officer	HC, SK, MN
July 31	Mpika District Council	Chibwili M. Sampa, District planning officer	FB, BG
July 31	Department of Agriculture – Mpika District	E. M. USSORBWA, Executive Officer	FB, BG
August 1	Group meeting with Muchinga Province's technical services: ZAWA, Physical planning and Forestry.	Martin SODALA, Chief planner; Anthony KAMANISHA, Security officer; Everisto NONDE, Forest officer; Patrick KAMBITA, Chinsali municipal council; Alex SINKALA, Adj. district officer; Leah M. NSOKOLO, Planner; Kasula CHINSANWA, Principal planner; Peter MULIYA, Senior planner; John AKAYANBOKWA, Senior engineer; Godfrey SICHALI, ZAWA	FB, HC, BG, SK, MN

Team: FB: Francis BARBE (WSP); HC: Hélène CHOUINARD (WSP); BG: Bernard GOMO (AMC); MN: Monique NSANZA (ZESCO); SK: Stella KAYOPE (ZESCO).

4 CONCERNS AND OPPORTUNITIES RAISED BY STAKEHOLDERS

Key concerns, expectations and opportunities expressed by stakeholders are summarized below. These relate to the socioeconomic, biological and physical environments, as well as to the resettlement and compensation process, stakeholder engagement and new electrification opportunities. Detailed meeting minutes are presented at appendix A.

4.1 CONCERNS RELATED TO THE SOCIOECONOMIC ENVIRONMENT

- Road and railway crossings: For security reasons, the transmission line should minimize road and railway crossings and avoid any encroachment of these infrastructures' right-of-ways. Road crossings may eventually become a constraint for future road extension projects, which is why repeated crossings over short distances should be avoided.
- Conservation of national heritage sites: Numerous natural and cultural heritage sites are found in the study area and should be avoided by the transmission line. Potential for new archeological discoveries is high.
- Impacts on emerging farm blocks: A number of new agriculture development schemes (farm blocks) are currently underway in the Project area. These government-led projects entail major investments to create clusters of both large and small-scale commercial farms. New farm blocks are found in the districts of Mkushi, Serenje and Mpika. They should be avoided as much as possible by the transmission line.
- New urban extension areas: Many district councils are currently developing new urban development plans (Local Area Plans) which imply the extension of the urban perimeters of major towns such as Nakonde, Isoka, Chinsali, Shiwa Ngandu and Mpika. Provincial and district authorities consider that the transmission line should avoid these new urban development areas where it would create a considerable constraint to urban planning.
- Consideration of existing and planned power lines: A number of high voltage power lines already exist in the Project area, and many new development projects are currently underway. The Project should consider these existing and future infrastructures and seek to juxtapose right-of-ways so as to reduce the fragmentation of natural habitats and minimize constraints on land planning and development.

4.2 CONCERNS RELATED TO THE BIOLOGICAL ENVIRONMENT

- Integrity of national parks and forest reserves: The transmission line should avoid any encroachment on national parks and forest reserves in order to reduce habitats fragmentation and new entry points for illegal activities.
- Restoration of wildlife migration corridors: Conservancy actors are currently joining efforts to re-establish a migration corridor for large mammals between the Bangwelu swamps and the Luangwa valley. One of the most important initiatives is the creation of the Mpumba Game Management Area, connecting the Mutinondo Wilderness National Forest and the Lavushi Manda National park. This area will inevitably be affected by the transmission line and mitigation measures, including reforestation in key areas, will be required.
- Protection of migratory birds: Two major migration flyways cross the Project area. Species involved are numerous and all fly at different altitudes. Protection of migratory birds is an international concern. The study area also comprises many designated Important Bird Areas that are of primary importance for conservancy.

- Protection of wetlands: Many wetlands are found in the Project area and their protection is considered critical to ecosystems' sustainability.
- Compensation for cut trees and reforestation: Financial compensations are required for cut trees inside forest reserves. However, since compensation money is channeled to a national fund, it is feel that it does not directly benefit to communities and districts affected by the cuts. It is thus considered critical to integrate reforestation efforts to the Project's environmental and social management measures.
- Impacts of right-of-way clearing on nearby communities: Communities in rural areas rely on the multiple ecosystem services provided by forests for their subsistence. Right-of-way clearing may therefore generate a significant impact on nearby communities. Adequate livelihood restoration assistance measures should be provided.
- Poaching control: Poaching and illegal trade of bush meat are important activities in the study area. Poaching activities usually increase during right-of-way clearing works. Poaching control measures, including the reinforcement of ZAWA rangers' patrol capacities, should be included in the Project's ESMP.

4.3 CONCERNS RELATED TO PHYSICAL ENVIRONMENT

- Protection of water catchment areas: Protection of headwaters and rivers is considered critical for the subsistence of local population and agriculture development. Many forest reserves were established to protect headwaters and upper catchment areas and, therefore, their protection is seen as critical to water resource protection.

4.4 CONCERNS RELATED TO THE RESETTLEMENT AND COMPENSATION PROCESS

- Minimize resettlement needs: Resettlement is considered a critical issue and it is expected that all efforts will be made to minimize resettlement needs. Settlements are mostly concentred along the main roads and therefore, to reduce resettlement needs, the transmission line should remain distant from roads (a minimal distance of one 1 km is suggested).
- Fair compensation: Fair compensations to displaced households and farmers are seen as critical to the Project's acceptability. Concerns are raised about ZESCO not paying fair compensations in the past.
- Impact of resettlement on national heritage sites: Areas receiving the resettled population are also likely to possess a natural or cultural heritage value. Investigation on sensitive heritage sites should also include resettlement areas.
- Impact of resettlement on forest reserves: Displaced population often ends up entering forest reserves where it finds lands and natural resources for subsistence. Resettlement sites should be located far from forest reserves and adequate livelihood restoration assistance should be provided to displaced households.

4.5 CONCERNS RELATED TO STAKEHOLDER ENGAGEMENT

- Engagement of local authorities: Provincial and district authorities and technical services should be informed and consulted throughout the ESIA process.
- Engagement of traditional leaders: Traditional leaders are very influential amongst local population and need to be involved in the ESIA process, in particular when it comes to land issues.
- Engagement of agroindustrial farmers: Large private farms are found in the study area, in particular around Mkushi and Kabwe. In recent years, agroindustrial farmers have strongly opposed to

proposed power lines affecting their lands. Early and continuous engagement with them, through the Zambia National Farmers' Union (ZNFU), is critical.

4.6 PERCEIVED OPPORTUNITIES

Authorities and other stakeholders generally acknowledged the national importance of the Project and offered their full support to its implementation. Since power availability and security is a major constraint to local development, stakeholders expect a lot from power line developments and wish that this power transmission project will somehow contribute to increase local power distribution capacities. As such, the integration to the Project of a few step-down stations would greatly contribute to its social and political acceptability.

Opportunities associated with to project as perceived by stakeholders include:

- The electrification of new or existing touristic facilities;
- The expansion of the irrigation network (water pumping and distribution);
- The reinforcement of power supply for the many emerging farm blocks;
- The reinforcement of power supply for the new extended urban areas and development projects.

Appendix A

BACKGROUND INFORMATION DOCUMENT

Tanzania – Zambia Power Interconnection Project

EIA - Information Memo - July and August 2014

This document was prepared by WSP to support the informative and consultative meetings with the project's stakeholders as part of the scoping exercise for the Kasama - Kabwe section, in July and August 2014.

Project overview:

1. The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Tanzania to Zambia.
2. The project is part of the ongoing regional energy integration process, with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the three systems; and (iii) contribute to economic development and regional integration.
3. Preliminary studies were initiated in Dec. 2013 for the Mbeya (Tanzania) – Kasama (Zambia) section. Upon results of the preliminary studies, the project's Steering Committee (which integrates ZESCO and TANESCO and other key stakeholders), has decided to extend the study area to include the Kasama – Kabwe section.
4. The project involves:
   - The construction of a high voltage transmission line (400 kV or 330kV) over 950 km (300 km for the Mbeya-Kasama section, and 650 km for the Kasama – Kabwe section);
   - The construction of new electrical substations, or upgrade of existing ones, in Mbeya (Tanzania), Kabwe and potentially in Nakonde (Zambia);
   - The construction of access and maintenance roads along the proposed power line.
5. The line could be mounted on single or double pylons. This configuration is not yet finalized. The double pylon option would ensure greater reliability, but would represent higher construction and resettlement costs.
6. At this early stage, the power line route is not known but is likely to affect a number of districts in the Northern, Muchinga and Central provinces.
7. Studies underway will determine the best route option based on technical and environmental / social considerations. The technical and environmental studies were initially expected to be finalized by August 2014 but, because of the extension to Kabwe, they are now expected to be finalized by the end of 2015.

Environmental and Social Impact Assessment (ESIA) process:

1. Conducting an EIA for the proposed transmission line is a legal requirement under the National Environmental Management Act. The procedures and requirements for EIA studies are defined by the National EIA Regulations;

2. The EIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The EIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project;

3. Informative and consultative meetings will be held several times during the EIA study allowing for inputs from authorities, affected communities and other stakeholders;

4. WSP Canada, in collaboration with AMC, has been mandated to undertake the EIA study.

Benefits and impacts generally associated with power interconnection projects

Potential benefits for the region associated to the Project include:

- The connection of isolated national electricity grids, increasing their reliability and security;
- Increased capacity for energy exchanges between the countries;
- Encourage regional development through access to electricity at lower costs;
- May also create new opportunities for rural and urban electrification.

Negative impacts sometimes associated to transmission lines include:

- Wayleave clearance may bring about damage to vegetation and wildlife habitat;
- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Restrictions may apply on land use and agricultural activities under the line (within wayleave);
- Transmission lines may have effects on migratory birds and low flying aircrafts;
- Construction works may disturb seasonal crops and affect nearby population;
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave.

Appendix B

MEETING MINUTES

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY – EIA UNIT
Date: July 28, 2014
Meeting location: ZEMA office in Lusaka
Participants: , senior inspector EIA; , inspector EIA; Francis BARBE (WSP); e (ZESCO).
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations**
1.1	Stakeholder engagement: Information and consultation of project's external stakeholders, including affected communities, is a priority for ZEMA. It needs to occur throughout the ESIA process. Traditional leaders should also be engaged in the process. Outlines of WSP's consultation framework were presented. Mr Mwembela indicated that the proposed approach, which includes four consultation rounds, is compliant with ZEMA's expectations. It is considered appropriate to wait until the third consultation round to hold public assemblies in affected communities, given that it is only at that stage that a final study corridor will have been chosen.
1.2	Alternative analysis: ZEMA expects at least three project alternatives to be studied in ESIAs. Alternatives should be on both technical design and location / alignment of infrastructures.
1.3	Resettlement Action Plan (RAP): Also a critical element of ESIAs according to ZEMA. It should include resettlement costs and schedule. ZEMA expects RAP to be aligned with its own guidelines (see ZEMA recommended format for RAP), as well as with IFC's performance standards.
1.4	Precisions on substations' location: ZEMA expects that the actual location of substations will be specified in the ToRs for the ESIA, otherwise such substations would need their own ESIA ToRs once their location is known.
1.5	Submission of new ToRs for the revised project: Considering the proposed extension to Kabwe, ZEMA considers that it is better to simply withdraw the former ToRs submitted in May and submit a new version for the revised project. It is mentioned that AMC has already made a request for the withdrawal of the former ToRs.
1.6	Continuous exchanges with ZEMA: ZEMA strongly recommends project promoters and consultants to maintain direct and frequent exchanges with the ESIA unit throughout the ESIA process.

1.7	Evidence of consultation: ZEMA now requires that the signatures of attendants to consultation sessions be provided with ESIA reports, along with meeting minutes.
2.	**Other information of interest**
2.1	Major transmission lines require full ESIA, as specified by the 2nd schedule of current environmental regulation.
2.2	New environmental regulations were drafted on 2011 but are still under review. Current regulation remains the one from 1997.
2.3	In Zambia, ESIA ToRs and Scoping report are usually integrated into one document
3.	**Collected data** Soft copies of : • ZEMA recommended formats for : the terms of reference; the scoping report; the RAP report; the environmental impact statement; • The Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, 1997

Prepared by: Francis Barbe, August 4th 2014

MINISTRY OF LOCAL GOVERNMENT AND HOUSING – DEPARTMENT OF PHYSICAL PLANNING AND HOUSING
Date: July 28, 2014
Meeting location: DPPH office in Lusaka
Participants: assistant director; Francis BARBE (WSP), ZESCO
Duration of meeting: 45 min
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	The DPPH key focus is on town / urban planning, but it is also involved in regional planning. As such, it should be involved in the EIA process as a primary stakeholder.
2.	**Existing data and reports of interest for the EIA**
2.1	The Sixth National Development Plan (SNDP) is the main planning document at central (National SNDP) and district (Districts SNDP) levels. Districts SNDP were produced in 2010 and 2011 and can be obtained from district councils. The National SNDP is available on the ministry's website (revised version 2012).
2.2	Most districts are currently developing new Integrated Development Plans (IDP), including Kapiri Mposhi, Mpika, Chinsali and Isoka. These documents are still at draft / early stage of development and, therefore, are not available to the public. Copies of draft documents could be obtained from provinces upon formal request.
2.3	District Statistic Analysis (DSA) documents exist for all districts, but are now getting old and the reliability of their data is questionable.
2.4	To date, data on land planning and development has not been centralized at the national department of physical planning. Such data, including existing infrastructures, can be found at the province level.
2.5	Central Statistical Office (CSO), from the Ministry of Finance, is likely to have GIS information on infrastructures, along with relevant thematic maps.

Prepared by: Francis Barbe, August 4th 2014

ZESCO – Environmental and Social Affairs Department
Date: July 28, 2014
Meeting location: ZESCO office in Lusaka
Participants: Senior manager TMS (ZESCO); principal environmental scientist (ZESCO); Francis BARBE (WSP)
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Risk of opposition from agroindustrial farmers: The southern area of the Kasama – Kabwe section, in particular around Mkushi and Kabwe, is characterized by the presence of large private farms. In recent years, agroindustrial farmers have shown to be very resistant to power line development and a strong opposition from them is to be expected if the project affects their lands. Large farmers, through the Zambia National Farmers' Union (ZNFU), need to be engaged throughout the EIA process and large commercial farms should be avoided as much as possible.
1.2	Distance from roads: In the project study area, human settlements are mainly concentred along roads, and in particular trunk / national roads. For this reason, so as to reduce resettlement needs, the transmission line should remain at a sufficient distance from those roads. A distance of at least one 1 km is suggested.
1.3	TAZARA railway: In the past, TAZARA has been very resistant to railway crossing by power lines, mainly for security reasons. The transmission line should therefore restrict railway crossings to the minimum and avoid any encroachment within the railway's own right-of-way.
1.4	Riparian buffer: According to national regulation and ZESCO usual practices, a 50 m wide riparian buffer should be respected along watercourses.
1.5	Consideration of the new transmission lines currently under development by ZESCO: These include a new 330 kV line from Kabwe to Pensulo (under study, would run parallel to the existing one), a new 330 kV line from Pensulo sub-station to Kasama (under construction), and a new 330 kV fron Pensulo to Chipata (under construction).
1.6	Vandalism: Steel robbery can be issue in isolated area (not so in urban areas).
2	**Other information of interest**

2.1	ZESCO's policy on land uses within ROW: ZESCO does not intend to buy land within ROW. Where titled land it found, it will search for a written / signed consent with individual owners. On traditional lands, negotiation takes place with district authorities and traditional chiefs. If negotiation fails, forced acquisition (expropriation) can occur, according to the Electrical Act. In all cases, crops less than 3 m high and grazing activities are tolerated within ROW, although officially prohibited. Compensations are offered for lost crops and assets, but not for the restriction of land uses.
2.2	Electrification of Mkushi farms: The construction of a transmission line from Mita Hills dam to Mkushi (private project) to increase large farms' power supply is currently under study.

Prepared by: Francis Barbe, August 4th 2014

BIRDWATCH ZAMBIA
Date: 28th July 2014 (am)
Meeting location:
Participants: Biodiversity Monitoring; Administration and Logistics; Hélène Chouinard (WSP); AMC; ZESCO
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.

No.	**Summary of discussions:**
1.	**Issues, concerns and expectations**
1.1	Needs to protect Important Birds Areas: The study area comprises multiple Important Birds Areas that are of primary importance in terms of protection from potential developments. The proximity of the power line to the Zambezian escarpment raises concerns because of the Wonder Gorges, which is an important breeding ground. The IBAs are mainly National Forests and National Parks consequently managed by the government. However, Mutinondo wilderness IBA and Shiwa Ng'andu IBA are private property managed by independents. The National Forests which are IBA are mostly degraded at some parts, but the North Shawa Block B is still intact and pristine.
1.2	Areas of ecological importance outside the protected areas networks: Kabwe represents the northeast part of the range of the Zambian barbet which is endemic to Zambia and is its emblematic bird. The fig trees, *Ficas encamoras*, are where this bird breeds and feeds and there are some of these trees around Kabwe. The Zambezian escarpment, particularly in front of Serenje, is an important area for birds that falls outside protected areas and IBA. It also hosts a lot of bats. They undertake migrations moving north, passing through Kasanka National Park and going to Mbala and Nieka.
1.3	Flyways crossing the Project area: There are two flyways crossing the Project area (Mediterranean/Black sea flyway and Asia/East Africa migration flyway). There is a variety of species involved and they all fly at different altitudes. Species flying along these flyways are of international concerns because they are migratory. They have put in place birds tracking in order to follow some species migration. As they have not been published yet, we can't have access to the data.
1.4	Small-scale migrations: There is supposedly no small scale migration crossing the study area. Migrations occur generally inside the connected protected areas, mainly from each side of the NR2. There are migration activities in between Mutinondo IBA and South and North Luangwa National Parks.

1.5	Important periods for birds: The migrations inside the flyways occur mainly in August during the hot season. Most of the birds breed from September to December.
1.6	Birds' electrocution: They monitor birds' collisions on power line. Need to ask the director for more information. Some species are more vulnerable to electrocution, as nocturnal raptors, Buffalo weavers and swallows. The raptors are also frequently observed nesting on towers.
2.	**Collected data**
2.1	They will send us the map of migratory patterns that also shows thermal winds used by birds.

Prepared by: Hélène Chouinard, August 4th 2014

MINISTRY OF LANDS, NATURAL RESOURCES & ENVIRONMENTAL PROTECTION – FORESTRY DEPARTMENT
Date: 28th July 2014 (am)
Meeting location:
Participants: Chief of Forestry Officer; National REDD+ Coordinator; Hélène Chouinard (WSP), AMC; ZESCO
Duration of meeting: 1h45
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.

No.	Summary of discussions:
1.	**Issues, concerns and expectations**
1.1	Potential interaction with National and Local Forests: The position of the Forestry Department is clear, economic and social benefits coming from the implementation of a power line are way more important that the impacts coming from the clearing of its associated wayleave in a Forest reserve. There is no need to degazetted the national or local forest, they just need to give the right-of-way. The Forestry Department just want the Project to succeed and will provide the land.
1.2	Management of Forests protected under the Forest Act: There are National and Local Forests that are managed by the government. Most of them are Local Forests and provide forest products to local communities. The important distance from the closest town, where there are technical services and the National Forests is a considerable reason why some of them have lost their forested cover. According to decentralized economical and human means of their technical services, the protection of the Forest Reserve is considered quite difficult. As local communities follow slash and burn practices for their agriculture and because land is getting poorer, they are entering within the Forest Reserves because they find better soil quality. A higher level of protection is generally given to Local Forests protecting sources of some rivers. National Forests are partly protected because mineral resources are found underground. According to the new Forest Act, some Local Forests will be managed locally by communities. However, sometimes, some forests are protected by communities and Forestry Department will help them to develop the management plan. There is no such type of forest in our study area. If the power line crosses any National or Forest Reserve, the local communities should be consulted in order to assess ecosystem services provided by the Forest.
1.3	Compensation in case the power line cross a Forest reserve: The illegals settlers that could be within a Forest reserve could not be compensated. Squatters can be found in

	Serenje Forest reserve and others around. What can be done, it is to resettle them in customary lands. When the final route will be selected, Forest inventories will need to be undertaken in order to estimate the cubic volume of wood. The compensation amount is also related to inventoried species. They have a price list (52??) where the price for economically important species is provided. A new price list is coming next month and should be used for the Project compensation determination.
1.4	Compensation measures outside Forest reserves: Compensation of cleared trees should be integrated in national programs. The National Tree Planting Program is one of them. Measures taken if the power line goes through a big settlement will need to follow the land act.
1.5	Commercial plantations considerations: Mainly around Kasama, there are commercial plantations. They are mostly pines and eucalyptus plantations. Technical aspects should lead the power line location; even the plantations should be removed and located elsewhere.
1.6	Needed studies: When a corridor will have been selected, botanical surveys will have to be undertaken in order to identify if there are not important trees species (protected, sacred or timber) or important and unique ecosystems that are not comprised within the protected areas network.
2.	**Collected data**
2.1	- Kowkw, M. & Mickels-Kowke, G. (2012). Forest Management practices with potential for REDD+ in Zambia, 97 p. - Vinya, R., Syampungani, S., Kasumu, E.C., Monde, C. & Kasubika, R. (2011). Preliminary Study on the Drivers of Deforestation and Potential for REDD+ in Zambia. A consultancy report prepared for Forestry Department and FAO under the national UN-REDD+ Programme Ministry of Lands & Natural Resources. Lusaka, Zambia. - Zambia Forestry Department & FAO. (2009). Integrated Land-Use Assessment – Zambia -2005/2008, 166 p.

Prepared by: Hélène Chouinard, August 4th 2014

MINISTRY OF LANDS, NATURAL RESOURCES & ENVIRONMENTAL PROTECTION – ENVIRONMENTAL DEPARTMENT
Date: 28th July 2014 (pm)
Meeting location: Lusaka
Participants: Chief officer; Hélène Chouinard (WSP), AMC, ZESCO
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.

No.	Summary of discussions:
1.	**Issues, concerns and expectations**
1.1	Important socio-economic benefits: This project is expected to have important positive socio-economic impacts. If the Project can comprise a few step-down stations, it will boost social acceptability if we say to local communities that there are possibilities for power supply in their villages. The electricity connection maybe not on their house but could be on public infrastructures. Communities are expecting a lot from power line implementation, and even more when they experiment resettlement and other negative impacts.
1.2	Power security in a climate changes context: Power security is really important in the context of climate changes. Zambia wants to develop in the coming years hydro-power and there is a risk in the future of water scarcity that can affect the electricity production.
1.3	Impacts on natural habitats: The natural habitats inside the Important Bird Areas, Protected areas, National and Local Forests and wetlands (comprising wetlands of international importance (RAMSAR)) as well as species that they host are susceptible to encounter negative impacts. However, impacts coming from power lines project are considered less damaging than the ones related to mining projects elsewhere in the country.
2.	**Existing data and reports of interest for the EIA**
2.1	• National Policy of Environment • National Policy on Climate Changes (not adapted yet, but should be before the end of this year) • REDD+ documents in general

Prepared by: Hélène Chouinard, August 4th 2014

NATIONAL HERITAGE CONSERVATION COMMISSION
Date: July 28, 2014
Meeting location: NCHC office in Lusaka
Participants: Active executing director (NHCC); Chef cultural heritage office (NHCC); Assistant conservation officer anthropology (NHCC); Francis BARBE (WSP), ZESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Identification and conservation of natural heritage sites: The study area is considered to present a high potential for natural and cultural heritage sites. An important number of known NH sites are found in the different districts likely to be affected. Since investigations to date have only covered a limited portion of the territory, it is considered that a high potential exist for the discovery of new sites of cultural and natural value. Chance findings procedures are required, and measures need to be taken to prevent perturbation.
1.2	Contribution to knowledge development: NHCC sees the EIA process as an opportunity to increase its knowledge of heritage sites, as currently unknown sensitive sites are likely to be found in the study area. NHCC suggests that results from biological inventories be transferred to them so as to support the identification of new natural sites of interest for conservation. If required, NHCC's archaeologists, anthropologists and ecologists could be made available to support the EIA team during fieldworks or any other step of the study.
1.3	Potential impact of resettlement on national heritage sites: The areas that will receive the resettled population are also likely to possess a natural or cultural heritage value. Investigation on sensitive heritage sites should also include those areas.
1.4	Integrity and security of touristic sites: The transmission line route should avoid touristic sites to preserve their aesthetic integrity and to avoid potential security issues for visitors during the construction or the operation of the line.
1.5	Opportunities for electrification of touristic sites: The proximity of a transmission line to some national heritage sites may represent an opportunity for the electrification of new or existing touristic facilities. The NHCC expects that it will have the chance to assess such opportunities with ZESCO once that the power line corridor is chosen.

1.6	Non-public character of data on national heritage sites' location: National heritage sites' location data (coordinates) is highly sensitive and non-public. It should not be made public in the EIA report. NHCC will share this information (list of known heritage sites and coordinates) upon formal request only (written request by WSP). This information should be used for the purpose of the EIA only and coordinates should not be divulgated.
2	**Other information of interest**
2.1	National Heritage sites include the following categories: *Natural Heritage sites:* - unique geological formation sites - unique geomorphological sites - unique fauna or flora sites *Cultural heritage sites:* - Archaeological sites - Anthropological sites - Historic / patrimonial buildings or sites - Engineering / industrial heritage sites

Prepared by: Francis Barbe, August 4th 2014

ZESCO – Central Province Office
Date: July 29, 2014
Meeting location: ZESCO provincial office in Kabwe
Participants: Regional manager Central – SD (ZESCO); Francis BARBE (WSP); ZESCO
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Consideration of existing and planned power lines: A number of high voltage power lines already exist in the project area, and many new development projects are currently underway. The project should consider these existing and future infrastructures and seek to align right-of-ways so as to reduce the fragmentation of natural habitat and mitigate constraints on land planning and development. Existing infrastructures include the 330 kV power line from Kabwe to Pensulo and the 66 kV power lines from Pensulo to Mpika, from Mpika to Kasama and from Mpika to Nakonde. Infrastructures under development include a 330 kV power line from Pensulo to Kasama (under construction), an additional 330 kV transmission line from Kabwe to Pensulo (under study), and two planned 330 kV transmission lines from Pensulo to Chipata.
1.2	Impacts on emerging farm blocks: New agriculture development schemes (farm blocks) are currently underway in the area, including one around Serenje. These are government-led projects that involve major investments to foster both agroindustrial developments and small-scale commercial agriculture. The transmission line should avoid these blocks as much as possible. District authorities and the Zambia National Farmers Union should be consulted to localize these developments.
1.3	Consultation of provincial and local authorities: Provincial permanent secretaries, district commissioners and council secretaries should be informed and consulted throughout the ESIA process.
2	**Other information of interest**
2.1	Muchinga hydro power generation project: Currently under study, this private project involves the construction of a dam at the confluence of the Mkushi and Lunsemfwa rivers, in the districts of Luano and Chibombo. It would become a major power generation station for the country.
2.2	ROW width for 66 kV power lines is 30 m.

Prepared by: Francis Barbe, August 4th 2014

Central Province - Office of the Permanent Secretary / Provincial Planner Office
Date: July 29, 2014
Meeting location: Office of the permanent secretary, Kabwe
Participants: assistant secretary, Central Province; chief planner, Central Province; senior planning assistant, Central Province; Francis BARBE (WSP), ZESCO
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	The provincial assistant secretary considers that the project is a good project for the nation and offers all its support to its development.
1.2	Consultation of provincial and district authorities: District commissioners and district councils know best their territory and should be engaged throughout the ESIA.
1.3	Consultation of traditional leaders: Traditional leaders are very influential and need to be involved in the ESIA process, in particular when it comes to land issues.
1.4	Scoping meetings: Provincial scoping meetings should be planned for, with the participation of representatives of provincial and district authorities, technical services and traditional chiefs. The office of the permanent secretary can help in the organisation and mobilisation for such meetings. These meeting should take place in the morning and use a power point presentation. A formal invitation letter, along with consultation documents, need to be send to participants two weeks in advance. A per diem for transportation costs is required for traditional chiefs.
1.5	Emergence of new farm blocks: Many new farm blocks are currently in development or planned in the project study area. These government-led projects aim to create clusters of both large and small-scale commercial farms. New blocks are located mainly in the Mkushi district, with an additional block in the Serenje district. Information on emerging farm blocks can be obtained from district authorities and agricultural offices.
2.	**Existing data of interest**
2.1	Most districts are currently in the process of developing Integrated Development Plans (IDPs). These planning documents are not yet public, but copies of some draft IDPs will be emailed to WSP by the chief planner.

2.2	District Statistical Analysis (DSA) are available for most districts, although their reliability is questionable.
2.3	The last official demographic census was conducted in 2010. Economic statistical data can be obtained from the Central Statistical Office (CSO).
2.4	Soft copies of the province's SNDP and province / districts profiles, along with a list of names and contact info for district commissioners, are provided to WSP
3.	**Other information of interest**
3.1	TAZARA's railway right-of-way is a 100 meter wide (50 m on each side).
3.2	There is only one pipeline in the province, TAZAMA's, which is mostly located along trunk road 2.
3.3	A number of new districts were created in 2013. One of them, Chitambo (north of Serenje), is likely to be affected by the project.

Prepared by: Francis Barbe, August 4th 2014

AGRICULTURAL DEPARTMENT – CENTRAL PROVINCIAL OFFICE	
Date: 29th July 2014 (am)	
Meeting location: Central province office, Kabwe	
Participants: Administrator; Land use activity; Hélène Chouinard (WSP); AMC; ZESCO	
Duration of meeting: 40 min.	
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.	
No.	**Summary of discussions:**
1.	**Issues, concerns and expectations**
1.1	Benefits from the Project: This project is expected to have important positive socio-economic impacts. It is more than welcomed as it could lead indirectly to an increase in crops production. There is a need to expand the irrigation network which relies on electricity to allow water pumping and distribution. Moreover, farmers actually sell mainly raw products because they cannot transform and process their agricultural production. The access to electricity could consequently improve productivity, processing and sales.
1.2	Needs for resettlement: Resettlement of commercial farms and private farms. Owners of large-scale farms will surely ask for compensation. Their agricultural complexes comprise multiple building and irrigation systems. They usually have no serious complaints from local small farmers in case of resettlement. Need to find alternatives for small farmers in the valley because you find really good soils and water that both allow raising specific crops. The resettlement should be somewhere close to the owned land. There will have a need to assess what activities could be lost because of resettlement for all types of farms.
1.3	Agricultural developments: There are couple of farm brooks and skims. About 70 km from Serenje, in Davalla, there is a complex of 9000 ha, which is surrounded by big farms (approximately 1000 ha), surrounded by 300 ha. Three dams have been constructed to provide water for the crops. This area is already electrified. Around Mukshi, there are the Tazara corridor skims A and B. Most of the developments are at the east of the road. At West, you find populated areas comprising multiple households with small farms. There are large agricultural developments in the Luangwa valley, but these areas are considered pretty far from the Project area.
2.	**Collected data**
2.1	Maps of main agricultural developments in the area

Prepared by: Hélène Chouinard, August 4th 2014

Road Development Agency – Central province
Date: July 29, 2014
Meeting location: RDA office in Kabwe
Participants: Regional manager (RDA), Francis BARBE (WSP), ZESCO
Duration of meeting: 30 min
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Consideration of road reserves (right-of-way): Transmission line pylons should avoid any encroachment of the road reserves, which is meant for future road extension projects. The road reserve is 100 meters wide (50 meters both sides) for trunk roads (T2 and T1 in the project area), 60 meters wide for municipal roads (M) and 36 meters wide for rural district roads (RD). Conductors hanging over the roads are not an issue of concern, as long as they meet the usual standards in height.
1.2	Limit the number of road crossings: Road crossing points may eventually become a constraint for future road extension projects, especially when two or more crossings occur within a short distance. Therefore their number should be limited and repeated crossings over short distances should be avoided.
2.	**Other information of interest**
2.1	Currently, the RDA does not plan for any new road or road extension in the project area. No realignment of the T1 and T2 are foreseen in a near future. Only road upgrading works are planned for.
2.2	Mr Masinga will email to WSP a map showing the existing roads with the different categories.

Prepared by: Francis Barbe, August 4th 2014

MLNREP – Forestry Department – Central Province
Date: July 29, 2014 (pm)
Meeting location: Kabwe
Participants: Provincial Forestry officer; Principal Technician; Hélène Chouinard (WSP), Francis BARBE (WSP), AMC, ZESCO
Duration of meeting: 1h15
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Fragmentation of forest reserves: A number of national and local forest reserves are found within the project study area. The protection and integrity of these forest reserves a priority concern for the forestry department. The transmission line's route should seek to avoid these areas as much as possible. However, in the absence of viable alternatives, the passage of a transmission line within a forest reserve will be allowed under current legislation.
1.2	Potential impact of resettlement on forest reserves: Displaced population often ends up entering forest reserves where it finds lands and natural resources for subsistence. Forest reserves such as Serenge and Kanona forests are already affected by illegal settlers. Consequently, project-induced resettlement is a concern for the forestry department as it can, if not properly managed, lead to further encroachments and fragmentation of forest reserves and other sensitive forested areas. Resettlement sites should be located far from forest reserves and adequate assistance should be provided to displaced households in restoring their livelihoods.
1.3	Lack of resources of the Forestry Department: Currently, the department does not have sufficient material and human resources for the efficient supervision and control of forest reserves. There is only one pick up and control patrol for the province. Forests far from the provincial office are hardly ever visited. The ESIA should consider the reinforcement of forest control capacities as part of the environmental and social management measures.
1.4	Protection of water catchment areas: The protection of headwaters and upper catchment areas is one of the main objectives and criteria for forest reserves. Even if some reserves are degraded, they may still be critical for the protection of water catchment areas of importance to communities. Water protection and soil erosion control measures are therefore critical within or near forest reserves to avoid and mitigate downstream impacts.

1.5	Compensation for cut trees and reforestation: Under current legislation (statutory instrument 52), financial compensations are required for cut trees inside forest reserves. No compensation is required for cuts outside of forest reserves. It is raised that ZESCO does not always comply with the required compensations. Compensation money for cut trees is channeled to a national fund and therefore does not directly benefit to the communities and districts that are affected by the cuts. For this reason, it is considered critical that reforestation efforts be planned as part of the project's environmental and social management measures. The Forestry Department, which is responsible for the National reforestation programme, should be involved in the planning and implementation of reforestation measures. The Forestry Department usually uses exotic and fast growing tree species for reforestation purposes because it doesn't have the financial and technical resources required to cultivate indigenous species.
1.6	Invasive species: The Forestry Department is concerned that the project could favor the introduction of invasive flora species from Tanzania. Proper prevention measures need to be planned for. Currently, *Lantana camara* is an exotic species that is known to be invasive in disturbed environments in the province.
2.	**Other information of interest**
2.1	National Forest 62 (Muyama National Forest) has been degazetted.
2.2	Forest reserves are divided into two categories, namely the national forests (established to preserve high-value gene pool / biodiversity), and the local forests (established to preserve the provisioning services that they provide to communities)
2.3	According to section 3 of the Forest Act, the Forestry Department is responsible for the protection of sensitive forests both inside and outside forest reserves. It has no responsibility over commercial forests.

Prepared by: Francis Barbe, August 4th 2014

Office of the District Council - Serenje
Date: July 30, 2014
Meeting location: District Civic Center, Serenje
Participants: district secretary; district chief planner, Hélène Chouinard (WSP), Francis BARBE (WSP), AMC), ZESCO
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Population and land resettlement: Resettlement of people and agricultural land is a main concern for district authorities and it is expected that the project will seek to reduce resettlement needs to a minimum. It is raised that settlements are concentrated along main roads, in particular trunk road 2, and therefore the transmission line's route should be kept at a good distance from such roads to minimize the need for population resettlement.
1.2	Protection of water resources: Protection of headwaters and rivers is considered critical for the subsistence of local population and agriculture development. Forest reserves ensure some protection of upper catchment areas and therefore should be avoided by the transmission line.
1.3	Nasanga farm block: The development of the new Nasanga farm block is planned to the north-east of Serenje, close to the border with DRC. Major investments are expected to take place shortly in this area to accommodate both agroindustrial farmers and government-sponsored small producers. This area should be avoided by the transmission line.
1.4	Security issues raised by the proximity with DRC: The proximity of the power interconnector with the international border with DRC may raise national security issues. In the event of international conflict or internal turmoil in DRC in the future, the proximity to the border of such a major infrastructure of national importance could be a target for vandalism. The transmission line's route should be kept as far as possible from the border.
1.5	Consultation of traditional leaders: It is critical to inform and consult local chiefs about the project and associated land issues. Local chiefs are highly influential amongst local population.

1.6	Sensitive elements to be avoided by the transmission line's route include: • Manganese mining operations (open pit and smelter) near the Kanona forest reserves; • The Kundalila falls (a national heritage and important touristic site located East of the Kanona reserve); • The cave paintings in Shiwa Ngandu (Natchikafu caves); • The Kasanka bird sanctuary, an important conservancy and touristic site.
2.	**Other information of interest**
2.1	The Lusiwasi lake is a reservoir and is not considered to be a sensitive element of the territory. No fisheries or touristic activities are known to take place on this lake.
2.2	In 2011, the Serenje district was divided to create the new Chitambo district, to the north-west of the Lusiwasi lake.
2.3	Serenje's local language is Lala. Bemba language is understood by everyone and can be used for oral and written communication with local population. Literacy level is high in the district and written communications are efficient.
2.4	Different local NGOs with considerable expertise in rural extension, such as COMACO, are found in the district and could be partnered with for the implementation of community assistance programmes (soil conservation, environmental education, agricultural development, etc.)
2.5	Most efficient communication channel to reach local population is through district commissioner and council secretary, who inform local chiefs, who then relay the information to village headmen and local population.
2.6	Existing planning document for the district include the District Statistical Analysis (DSA) and the Poverty Reduction Plan (PSRP).

Prepared by: Francis Barbe, August 4th 2014

Mpika District – Planning department
Date: July 31, 2014
Meeting location: District Civil Center, Mpika
Participants: District planning officer; Francis BARBE (WSP); AMC
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Population resettlement: To minimize resettlement needs, the transmission line should be kept at a good distance from the trunk roads (T1 and T2), along which most of population settlements are concentrated. The new Pensulo – Kasama 330kV line's route is considered to be a good route because it stays far from the road and population settlements.
1.2	Mpika urban boundaries extension project: The district council is currently in the process of extending Mpika's urban development area. This endeavour has received support from central and provincial governments. Negotiation with traditional leaders has been initiated. A first construction phase is planned in the north – west section of the new perimeter, right up to the existing 66 kV transmission line. The proposed new urban boundaries should be bypassed by the interconnector's route, where it would represent a major constraint to urban development. If it is not possible to bypass the new urban boundaries, than ZESCO should engage with district authorities as soon as possible to determine and reserve the strip of land required for this project before urban development projects are launched.
1.3	Escarpments east of trunk road 2: From Mpika to the south, the line should remain on the western side of trunk road 2 (T2) to avoid the steep escarpments located to the east.
1.4	Sensitive sites within the district to be considered include: • The TAZAMA's fuel reserves site, located just south of the town. It is used for the storage of processed oil products; • Mpika airstrip, located to the South East of the town. Authorities are currently planning for its extension (northward); • Shiwa Ngandu caves, a Natural Heritage site located along trunk road 2 (+- 100 m. from the road), located on private land; • ZamPalm plantation (oil palm, private) located North West of Mpika, on the eastern side of trunk road 1.

1.5	The protection of forest reserves is usually not an issue of concern for district authorities. If there is a need to, administrative procedures will allow the transmission line to cut through these areas.
2.	**Other information of interest**
2.1	No agroindustrial farm other than ZamPalm is found in the district.
2.2	A number of conservancy and rural development NGOs are active in the district, including Caritas and WWF.
2.3	TAZAMA's pipeline coming from Dar es Salaam and running parallel with trunk road 2 is the only pipeline in the province. TAZAMA is currently planning for a new pipeline, also connecting Dar es Salaam to Ndola, most likely in parallel to the existing one.
3.	**Existing data of interest**
3.1	As for planning documents, a new District Statistic Analysis (2014) is now available (a soft copy is given to WSP). No IDP nor SNDP are available for the district.
3.2	A paper map of the proposed urban extension area for the town of Mpika is given to WSP.

Prepared by: Francis Barbe, August 4th 2014

FORESTRY DEPARTMENT- MPIKA OFFICE
Date: 31th July 2014 (am)
Meeting location: Mpika
Participants: District Forestry Officer; Hélène Chouinard (WSP); ZESCO
Duration of meeting: 45 min
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.

No.	**Summary of discussions:**
1.	**Issues, concerns and expectations**
1.1	Protection of forest reserves: The Project needs to consider the location of Local and National forests. Chief Mpumbo is really supportive on this way. As there are already linear infrastructures going across, the Bwingi Mfumu National Forest is likely to be affected by the planned project. This forest, although it is degraded and invaded by squatters, is still important for water catchment protection.
1.2	Payment of compensations: The payment of compensations goes in a national fund, control 99, but nothing come after at a district level. The administration of compensation money is a national challenge. ZESCO pays for compensation centrally so it is unlikely that reforestation will be undertaken at a more local level. They would like to know how ZESCO determines the amount of compensation for clearing outside forest reserves. Squatters within forest reserves should not be compensated as they are illegally settled.
1.3	Impacts of right-of-way clearing on communities: People complaint because there is no compensation for cuts of indigenous tree species. Indeed, local communities benefit from multiple uses of natural resources, even outside forest reserves. The lack of payment at a district level means that no reforestation is undertaken close to affected villages. The social impacts of power line projects are consequently considerable.
1.4	Local reforestation: Reforestation for ZESCO projects is not a norm. Types of trees that will be planted is a concern. Indigenous species should be prioritized. The reforestation actions should be made locally as areas cleared have to be compensated locally.
1.5	Consultation approach: They are fine with the proposed consultation approach for the ESIA and will be collaborative at next steps.
2.	**Collected data**
2.1	- Statutory Instrument no.52 of 2013

Prepared by: Hélène Chouinard, August 4th 2014

Mpika District – Agriculture and Livestock department
Date: July 31, 2014
Meeting location: Agriculture department office, Mpika
Participants: Executive Officer; Francis BARBE (WSP); AMC
Duration of meeting: 30 min
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project and the EIA process**
1.1	Potential impacts on emerging farm blocks: The Ministry of Agriculture is currently unfolding a farm blocks development programme throughout the country. Two farming blocks are located in the Mpika district (Mupamadzi and Kanchibiya farm blocks) and should be avoided as much as possible by the transmission line. Objectives for these agricultural development blocks include the development of both agroindustrial activities (core ventures) and small-scale production by government-supported peasants. Initial developments in the large Mupamadzi farm block are expected to be focused in specific areas, namely the Mpamasi, Mufumbushi and Mansha sectors (between Chilonga and Kalonje, on the eastern side of trunk road 2).
1.2	Power supply for the emerging farm blocks: As the above-mentioned farm blocks will require an important and reliable power supply, the project may be seen as an opportunity if it actually contributes to power availability and security in the district.
1.3	Zampalm plantation: Located about 110 km to the north west of Mpika, this commercial oil palm plantation should be avoided by the transmission line.
2.	**Other information of interest**
2.1	Farm blocks location: • Mupadamadzi farm block – most of the territory between T2 and the Luangwa forest reserve (see Mupamadzi map) • Mpamasi sector - South of Kalonje, on the eastern side of T2; • Mufumbushi sector - South of Chilonga, on both sides of T2; • Mansha sector – north east of Mipka; • Kanchibiya – About 30 km to the north east of Mpika, on the western side of the road.
2.2	The new Pensulo – Kasama 330 kV line route does not affect any of these farm blocks.
2.2	A paper map of the proposed farm blocks was given to WSP.

Prepared by: Francis Barbe, August 4th 2014

ZAWA- MPIKA OFFICE	
Date: 31th July 2014 (am)	
Meeting location: Mpika	
Participants: Ranger Operations; Ecologist; Hélène Chouinard (WSP); ZESCO	
Duration of meeting: 1h45	
Meeting Agenda: - Presentation of the Project and the EIA process; - Issues, concerns and expectations with regard to the project and the EIA process; - Identification of existing data and reports of interest for the EIA.	
No.	**Summary of discussions:**
1.	**Issues, concerns and expectations**
1.1	Integrity of National parks: National parks should be avoided as much as possible by the transmission line. If an encroachment on such parks is unavoidable, then it should be preceded by a thorough ecological assessment of potentially affected areas within the parks. Natural habitats surveys and ecosystem assessments are judged fundamental in order to locate and protect areas of high ecological importance. Flora and fauna surveys in key periods should complete the studies. ZAWA officers should be presents during right-of-way clearing works.
1.2	Potential encroachment of the Lavushi Manda National park: Some linear infrastructures already pass across the south-east tip of the Lavushi Manda National park, while others pass inside its 5-to-10-km buffer zone. Infrastructures going through the park include the 66 kV Pensulo – Mpika power line and the new 330 kV Pensulo - Kasama transmission line (under construction). The railway line is also on the west side of the road. This encroachment inside the national park is detrimental for fauna and could contribute to the end of some species range.
1.3	Migration corridors: There are two distinct ecosystems in the area: the Bangwelu swamps ecosystem and the Luangwa valley ecosystem. There are inside both ecosystems large migration of wildlife. There was in the past a migration of animals in between both mainly coming from the Luangwa valley to Bangwelu swamps during dry period. It was not each year, as the migration is mainly related to quality of grazing resources and presence of water in the Bangwelu swamps even in dryer periods. Elephants were the main migrators but zebras, lions and buffalos migrated there as well. The fragmentation of the area has led to a significant decrease of animal movement. In order to rehabilitate natural habitats and allow for migration again, the is a planned Mpumba Game management area in between both areas, that passes across Mutinondo Wilderness National Forest and Lavushi Manda National park. The species diversity and abundance in Lavushi Manda are not that high. It has been classified notably for ecological connectivity purposes. It is in transition phase through rehabilitation.
1.4	Impact on the proposed Mpumba Game Management Area: The implementation of the

	Mpumba Game Management Area is at the beginning, it is at planning stage. Its implementation is quite challenging as the proposed area comprises a huge farming block of more than 700 farmers, mostly on the East side of the road. They have livestock and crops and the compensation costs if they want to acquire the land will be high. The passage of the Tanzania –Zambia interconnector represents yet another important constraint to the proposed game management area. Mitigation measures should include reforestation in key areas of the proposed game management area. The installation of artificial structures inside the right-of-way to mimic natural vegetation and offer shelters for large mammals should also be considered.
1.5	Other sensitive ecological areas to avoid: The Lwitikila National Forest, where lions, redbox and other emblematic species can be found; The North Luangwa National Park where the reintroduction of Black rhinos is planned.
1.6	Impact of right-of-way clearing on the livelihood of nearby communities: The multiples uses of natural habitats by local population (comprising caterpillars collect) give an importance to a lot of areas and clearing could be associated to a loss of livelihood.
1.7	Protection of water bodies and wetlands: Sensible areas as wetlands, rivers and riparian areas will need to be protected and specific mitigation measures will need to be implemented accordingly. Many wetlands and water catchment are likely to be found in the project area and their protection is considered critical to ecosystems' sustainability.
1.8	Poaching control: During the clearing, there are a lot of poachers that come to take advantage of wildlife that escape the disturbed areas. A lot of animal are consequently hunted. Some animals are more territorial, as the Redbox, and are consequently more sensible to habitat destruction. They also could move outside National parks were there are more vulnerable to poaching. There is a lot of illegal trading of bush meat in the area. The power line should not come close to North Luangwa National Park as they will reintroduce Black rhinos there and they want to keep the public as far as possible. Patrol is a really important aspect to maintain protection within National parks. As a mitigation measure, the construction of rangers' camps (one or two) could help reinforce the local patrol power.
1.9	Consultation of conservancy NGOs: It is suggested to include local conservancy NGOs in the ESIA stakeholder engagement efforts. A group meeting in Mpika with ZAWA, NGOs and the chief of Mpumba village is proposed at the next consultation round.
2.	**Other information of interest**
2.1	NGOs and private owners involved in conservancy in the area: Kasanka Trust (Development coordinator - Frederic C. Mbulwe 0922 715924) involved in conservation actions; Fundation for wildlife habitats (M. Simenga 0966 355080) working on Mpumba corridor; Privately owned Mutinondo wilderness area (Owner – M. Merrit 0978 198198); privately owned Shiwa Ngandu site (M. Charles Harvey).
3.	**Collected data:** Map of Wetlands; Map of planned Mpumba Game Management Area

Prepared by: Hélène Chouinard, August 4th 2014

Muchinga Province – ZAWA, Planning and Forestry departments, Chinsali Council
Date: August 1st, 2014
Meeting location: Office of the Permanent Secretary, Chinsali
Participants: • Provincial Chief planner • Security officer¸ • Provincial forest officer • Town clerk, Chinsali municipal council • Adj. district administration officer • Provincial planner • Principal planner • Senior planner PPU • Senior engineer DHID • Park ranger, ZAWA • ZANIS reporter • Hélène CHOUINARD, consultant (WSP) • Francis BARBE, consultant (WSP) • Consultant (AMC) • ZESCO • ZESCO
Duration of meeting: 2h
Meeting Agenda: - Presentation of the Project, the EIA process and the stakeholder engagement process; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process - Identification of existing data and reports of interest for the EIA

No.	**Summary of discussions:**
1.	**Overview**
1.1	The meeting was chaired by the provincial chief planner, Mr Martin SODALA. After stating the meeting agenda and asking attendants to introduce themselves, the chairman invited to consultants to present an overview of the Project and the ESIA process. Copies of a project information memo (project description, expected benefits and potential impacts) were distributed to participants and reviewed during the meeting. Objectives and timelines for the ESIA study were presented, along with the outlines of the proposed stakeholder engagement plan for the ESIA. Following discussions were mostly focused on key concerns and elements of the territory that should be considered at this early stage of the ESIA so as to influence the determination of study corridor alternatives for the transmission line.
2.	**Issues, concerns and expectations with regard to the project and the EIA process**
2.1	Consideration of new urban extension areas: District councils of the Muchinga province are currently developing new urban development plans (called Local Area Plans, or LAP) for the main towns, which imply the extension of urban perimeters. This includes the towns of Nakonde, Isoka, Chinsali, Shiwa Ngandu and Mpika. It is considered critical by provincial and district representatives that the proposed transmission line avoids as much as possible these new urban development areas, where it would create a

	considerable constraint to urban planning, besides generating important compensation costs because of the rapidly increasing land value in these urban perimeters.
2.2	Need for increased power supply in Chinsali: Chinsali is undergoing rapid urbanization since it has become the capital city of the newly created Muchinga province. Many development projects are still underway in Chinsali to accommodate government offices. Notwithstanding the above, if required, land substitution for an eventual distribution substation within the new urban perimeter should not be an issue, but would be seen as an opportunity to support new developments.
2.3	Population resettlement: Resettlement is a critical issue and should be reduced to a minimum by keeping the power line at a good distance from the main roads where settlements are found. Concerns are raised about ZESCO not paying fair compensations in the past.
2.4	Integrity of national parks and forest reserves: The transmission line should avoid any encroachment on national parks and forest reserves so as to reduce habitat fragmentation and avoid creating new entry points for illegal activities. However, if unavoidable, legal procedures usually allow for transmission lines to enter such protected areas. The particular case of the Lavushi national park is not so much a concern for local authorities considering that a transmission line already passes through the park and another is under construction.
2.5	Consultation of district authorities: District councils and technical services should be informed and consulted throughout the ESIA process, including when consulting on corridors options. It is mentioned that ZESCO is known for having paid little attention in the past to advices and concerns from local authorities and other stakeholders.
2.6	Consultation of traditional authorities: Engagement with traditional chiefs is considered critical, in particular for land-related issues. Five chiefdoms are found in the Muchinga province. A two-step consultation approach is proposed: Initially, conduct individual meetings with each one of the chiefs, at their palace. Second, invite chiefs to a group meeting where preliminary results are presented and discussed, including the chosen line route. Chiefs need to be consulted apart from technocrats and government representatives.
2.7	Protection of headwaters and upper catchments: Many sensitive water catchments are located in the project study area. Protection of water sources and headwaters is a priority for local authorities and should influence the determination of study corridor options. For that matter, in general terms, the eastern side of trunk road 2 would appear a better option for the transmission line, as more river sources and headwater areas are found on the western side of the road. Many of forest reserves were established to protect headwaters and upper catchment areas and, therefore, their protection is critical to water resource protection.
2.8	Biological sensitivity of Shiwa Ngandu lake: The lake and its surrounding wetlands are recognized as a conservation site of critical importance for migratory birds. The land in this area is titled and privately owned.
2.9	Integrated planning of the different linear infrastructure projects: A number of power

	lines and other linear infrastructure projects are currently in construction or under study in the province. Local authorities are concerned about the apparent lack of coordination amongst these projects, which results in the fragmentation of the territory and unnecessary new opening of natural areas. Where possible, right-of-ways of existing and future infrastructures should be juxtaposed so as to reduce these impacts. New linear infrastructure projects in the province include the Pensulo – Kasama 330kV power line as well as TAZAMA's new Dar es Salaam - Ndola pipeline project.
2.10	Emerging farm blocks: Farm blocs and rural settlement schemes are planned in the province by the central government and should be avoided as much as possible by the transmission line's route. These include the Mupamadzi and Kanchibiya farm blocs in Mpika, as well as an additional farm block between Chinsali and Shiwa Ngandu, on the western side of trunk road 2.
2.11	Wildlife migration corridor: Wildlife migration corridors are located south of Mpika and need to be considered. No known wildlife migration corridor is located in the Nakonde - Mpika section.
2.12	Other sensitive sites to be considered include: • National heritage sites; • Zampalm plantation (oil palm), in Mpika; • A government ranch located North West of Chinsali.
3.	**Conclusion**
3.1	The conclusion of the meeting is proposed at 12h00 by the chairmen, Mr SODALA. On behalf of the permanent secretary, Mr SODALA thanks all participants for their fruitful contributions to this initial informative and consultative meeting about the Tanzania – Zambia interconnection project.
4.	**Collected data**
4.1	Map of Chinsali's proposed new urban boundaries (soft copy given to WSP).
4.2	Brochure produced by NHCC on touristic and patrimonial sites in the Muchinga province (hard copy given to WSP).
4.3	District IDPs (integrated development plans) and urban extension plans (soft copies will be sent to WSP by email).

Prepared by: Francis Barbe, August 4th 2014

Appendix C

REGISTER OF PARTICIPANTS' SIGNATURES

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study – Kabwe to Kasama section

Stakeholder information and consultation meetings

Date	Name / Surname	Fonction	Organization	Signature
28/07/14		Senior Inspector -EIA	ZEMA	
11		Inspector - EIA	ZEMA	
11		~~ASST. DIRECTOR - PPH~~ MLGH	DPPH - MLGH	
11		ASST DIRECTOR	DPPH - MLGH	
		SNR MANAGER TMS	ZESCO	
11		PRINCIPAL ENVTAL SCIENTIST	11	
11		ACTING EXECUTIVE DIRECTOR	~~KA~~ HCC	
11		Chief cultural Heritage officer	NHCC	
		ASST CONSERVATION OFFR. ANTHROPOLOGY	NHCC	
29/07/14		REGIONAL MANAGER CENTRAL - SD	ZESCO	
29/7/14		A/ Assistant Secretary	Prov. Admin	
29/7/14		Senior Planning Assistant.	Dept of Physical Planning and Housing.	
29/7/14		Chief Planner	MOF, Prov. planning unit	
29/07/14		REGIONAL MANAGER	RDA	
31/07/14		District planning officer	Mpika District	
31/07/14		EXEC OFFICER	MINES & L/STOCK	

Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study – Kabwe to Kasama section

Stakeholder information and consultation meetings

Date	Name / Surname	Fonction	Organization	Signature
28-07-14		Chief Forestry Officer	Forestry Department	
28-07-14		National REDD+ Coordinator	Ministry of lands, natural resources & env. protection	
28-07-14		ADMIN/LOGISTICS	BIRDWATCH (Z)	
28.07.14		Biodiversity Monitoring	BirdWatch (Z)	
28-07-14		A/Chief ORUM Officer	MLNR/EPD	
29-07-14		AGRICULTURAL ADMIN. COORDINATION for C. Plan.	Provincial Dept - Agriculture	
29-07-14		LAND USE ACTIVITY	Provincial Dept - Agriculture	
29-07-14		Provincial Forestry Office	Provincia Dept - Forestry	
29-07-14		Principal Technica	Provincial Dept - Forestry	
30-07-14		PLANNER	Serenje District council	
30-07-14		COUNCIL SECRETARY	Serenje District council	
31-07-14		Ranger Operations	ZAWA - Mpika Office	
31-07-14		Ecologist	ZAWA - Mpika Office	
31-07-14		Distrt forestry officer	Forestry office - Mpika	

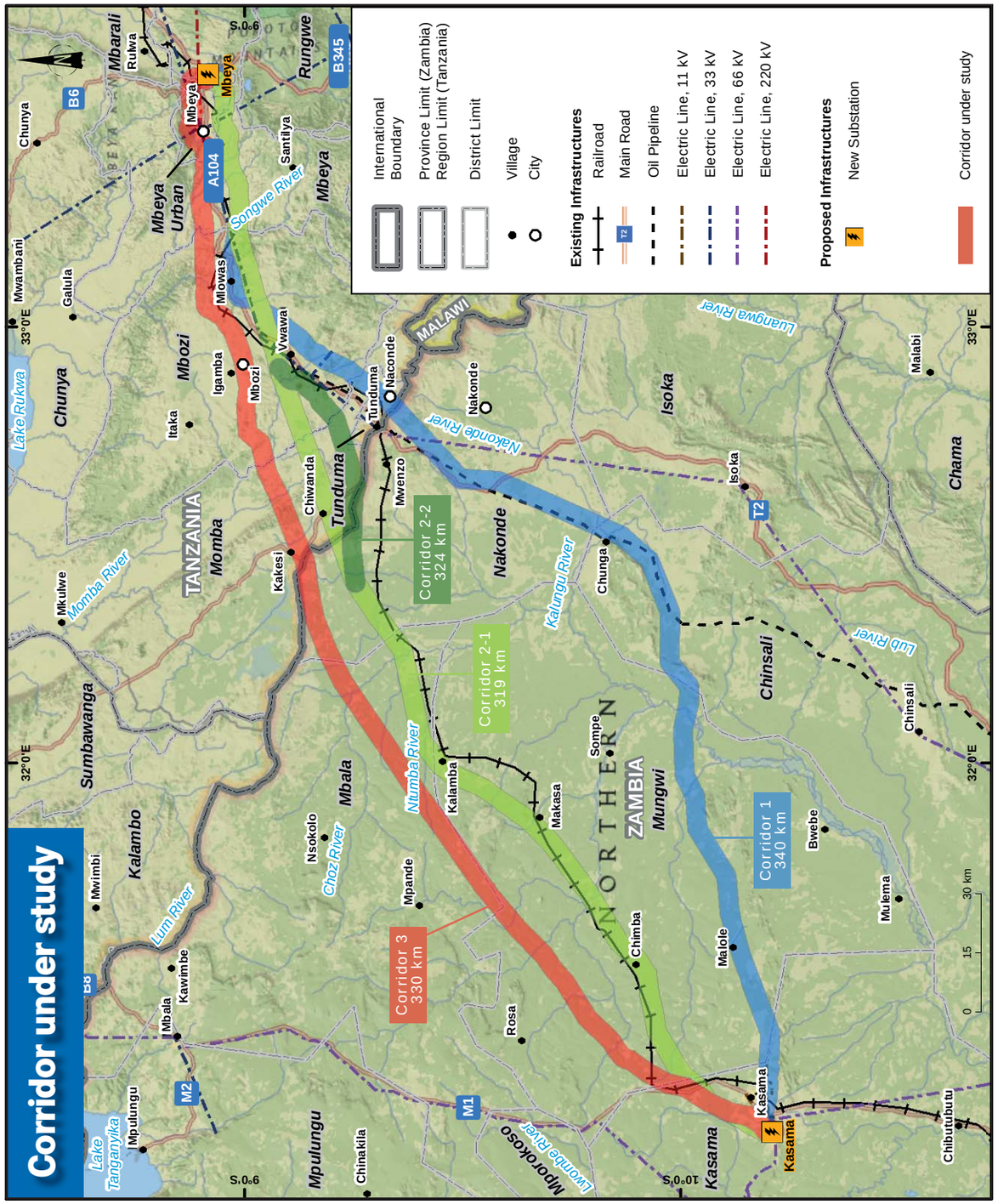
Tanzania – Zambia Power Transmission Line Project

Environmental and Social Scoping Study – Kabwe to Kasama section

Stakeholder information and consultation meetings

Date	Name / Surname	Fonction	Organization	Signature
1/08/14		Chief Planner	Provincial Planning Unit	
1/8/14		Security	Office of the President	
1/08/14		Provincial Forestry Officer	Forestry Dept	
1/08/14		TOWN CLERK	CHINSALI M. COUNCIL	Bambita
1/08/14		Ag DISTRICT ADMIN. OFFICER	OOR DISTRICT COMMISSIONER'S OFFICE	
1/08/14		Provincial Planner	Physical Planning & Housing	
1/08/14		PRINCIPAL PLANNER		
1/08/14		S PLANNER	PPU	
1/08/14		S ENGINEER	DHID	
1/08/14		PARK RANGER	ZAWA	
1/08/14		ZANIS REPORTER	ZANIS	







Contact

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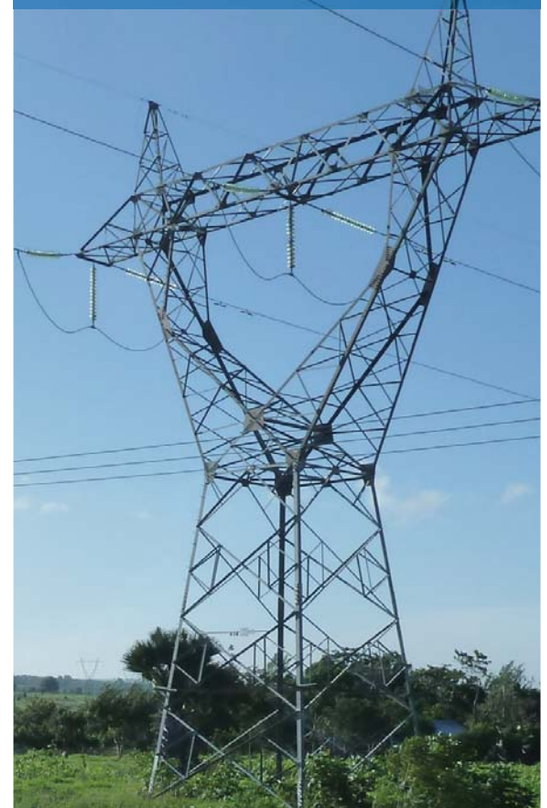
WSP
M. Philippe **ALARY PAQUETTE**
Project Coordinator
Philippe.Alary.Paquette@wspgroup.com

African Mining Consultants
M. Benard **T. GOMO**
Project Manager, Zambia
bgomo@amc-africa.com

The preparation of the ESIA and Resettlement Plan was mandated to WSP-Canada Inc., an international consulting firm experienced in conducting these types of studies.

WSP

Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP)



Tanzania-Zambia Power Interconnection Project

NILE BASIN INITIATIVE
Initiative du Bassin du Nil

TANESCO

ZESCO

Public Information Document

Detailed Study Phase - Zambia

May – August 2014

Project Summary

The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Mbeya (Tanzania) to Kasama (Zambia).

The project is part of the ongoing regional energy integration process. It involves:

- The construction of a high voltage transmission line (400 kV)
- The construction of new electrical substations in Mbeya (Tanzania) and Kasama (Zambia)
- The construction of access and maintenance roads along the proposed power line

A preliminary assessment of different corridor options for the transmission line was completed in May 2014. The selected corridor (see map) affects the following districts: in Tanzania - Mbeya City, Mbeya Rural, Mbozi, Momba and Tunduma; in Zambia - Nakonde, Mbala, Mungwi and Kasama.



The determination of the final transmission line route within this corridor will be made on the basis of the technical, environmental and social studies currently in progress.

Potential benefits for the region

- Increased reliability and security of the electrical energy supply
- Connection of isolated national electricity grids
- Increased capacity for energy exchanges between the countries
- Encourage regional development through access to electricity at lower costs
- Optimal use of the energy produced in the region
- New opportunities for urban and rural electrification

Potential impacts associated to transmission lines

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers
- Wayleave clearance may bring about damage to vegetation and wildlife habitat
- Restriction of land use and agricultural activities under the line (within wayleave)
- Transmission lines may have effects on migratory birds and low flying aircrafts
- Construction works may disturb seasonal crops and affect nearby population
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave

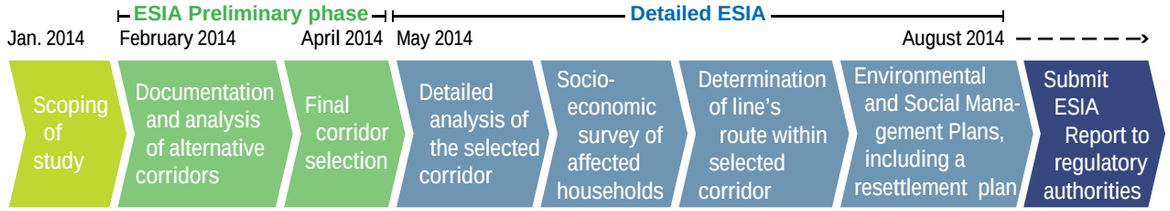
The Environmental and Social Impact Assessment

According to the existing laws in Tanzania and Zambia, an Environmental and Social Impact Assessment (ESIA), together with a compensation and resettlement plan, are prerequisites to the implementation of the Tanzania – Zambia Power Interconnection Project.

The ESIA aims to identify:

- Potential impacts on the natural environments (both physical and biological)
- Potential impacts on populations and human activities (social, cultural and economic)
- Applicable measures to mitigate negative impacts and to enhance positive impacts
- Required environmental and social monitoring and follow-up activities

Key steps of the ESIA process





Public information and consultation

Information and consultation sessions with project stakeholders will take place throughout the ESIA process, including:

- Public assemblies in all project-affected villages and cities
- Consultative meetings with concerned authorities, government services and NGOs
- Regional workshops in Mbeya, Nakonde and Kasama

Participants to public consultation sessions will have the opportunity to:

- Receive information about the project
- Express their concerns and expectations in relation to the project
- Comment on the preliminary results of the ESIA and the resettlement plan

Population Resettlement

The Tanzania – Zambia Power Interconnection Project will possibly displace some households, affect some agricultural lands and disturb other subsistence activities. Therefore, a Resettlement Action Plan (RAP) will be developed as part of the ESIA. The affected communities and their representatives will be consulted on compensation and resettlement issues. A socio-economic survey will also be conducted with the potentially affected households and individuals to determine the impact of the electrical transmission line.



APPENDIX

7-6 *MINUTES ROUND 3B*

Muchinga Province – ZAWA, Planning, Agriculture and Forestry departments, Deputy Permanent Secretary Office
Date: September 10th, 2014
Meeting location: Each representant was met in its own office
Participants: • Forestry extension officer, Provincial administration • Provincial planner, Provincial administration • Agriculture and livestock officer, Provincial administration • Deputy permanent secretary, Provincial administration • Senior warden, ZAWA • Provincial assistant secretary, Provincial administration • Webster Saint Oh Sha, CHRMO, Provincial administration • Consultant (WSP) • Consultant (AMC)
Duration of meeting: 3h
Meeting Agenda: - Presentation of the Project and description of the corridor for Muchinga province; - Issues, concerns and expectations with regard to the project, the EIA process and the stakeholder engagement process

No.	Summary of discussions:
1.	**Overview**
1.1	It was not possible to organize an official meeting with all the representatives of Muchinga Province. Each person was met in their office September 10th, 2015 in the morning. After stating the meeting objectives, the consultants presented an overview of the Project and the ESIA process. Copies of a project information brochure (project description, expected benefits and potential impacts) and maps of corridors under study were distributed to participants and reviewed during the meeting. Following discussions were mostly focused on key concerns and elements of the territory that should be considered at this stage of the ESIA so as to influence the determination of study corridor alternatives for the transmission line.
2.	**Issues, concerns and expectations with regard to the project and the EIA process**
2.1	Integrity of forest reserves and forests: the new line should avoid forest reserves especially the ones created to protect catchment forest. If avoidance is impossible, the new line should follow existing infrastructures (existing power line or roads) and minimize the volume of wood to be cut. It is important to assess the volume of wood that will need to be cut and to reduce to a minimum access roads in order to avoid opening new areas to farmers and to reduce fragmentation of forest reserves..
2.2	New infrastructure to take into considerations for planning: Both the forestry extension

	officer, the agriculture representative and the deputy permanent secretary mentioned that a new dam was constructed on the Lub river close to Chinsali. An agricultural scheme is also planned in the area of the dam. They are located outside of the proposed corridor and should be avoided.
2.3	Agricultural concerns: The Agriculture representative have asked to have access to the kmz files of the corridor to be able to tell us his concerns. At first glance, the corridor is located in areas of small-scale farming and on untitled farmlands.
2.4	Consideration of new urban extension areas and planned development: The chosen corridor needs to take into consideration the new planned development for all the main towns and for smaller agglomerations such as Shiwa N'gandu. It is considered critical by provincial representative that the proposed transmission line avoids as much as possible these new development areas, where it would create a considerable constraint to urban planning. Benard will be in contact with the provincial planner and district councils to collect the needed information. It was also mentioned that the width of wayleave be known to include it in future development plans. For Nakonde, the transmission line should circumvent the town that is already overcrowded to avoid costly resettlement.
2.5	Consultation of traditional authorities: Engagement with traditional chiefs is considered critical and needs to be done as soon as the corridor is chosen.
2.6	Safety issues: Vandalism and safety should be taken into consideration regarding the location of the transmission line and also regarding pylon construction.
2.7	Concerns about corridors south of Mpika: For corridor 9, the northern section of the transmission line which passes through the escarpment will make construction and maintenance difficult and costly due to the difficulty of access to the area. Corridor 7 and 8 are seen as better options since they follow existing infrastructure thus reducing environmental impacts of the project, such as forest clearing. It was also mentioned that the best option should also reduce to a minimum displacement of local farmers and local population.
2.8	Impacts on Lavushi Manda National Park: The fact that one of the proposed corridor passes through the tip of the NP does not raised concerns from ZAMA or Provincial representatives since it follows the existing power line. However, ZAMA mentioned the importance of consulting the park planning officer as soon as possible if Corridor 7 is chosen in order to discuss the project and his concerns.
2.12	Other sensitive sites to be considered include: • Tazama pipeline • Burial ground in Isoka
3.	**Conclusion**
3.1	The last meeting ended at 12h00. The consultants thanked all participants for their fruitful contributions to this consultative meeting about the Tanzania – Zambia interconnection project.
4.	**Collected data**

4.1	No data was collected

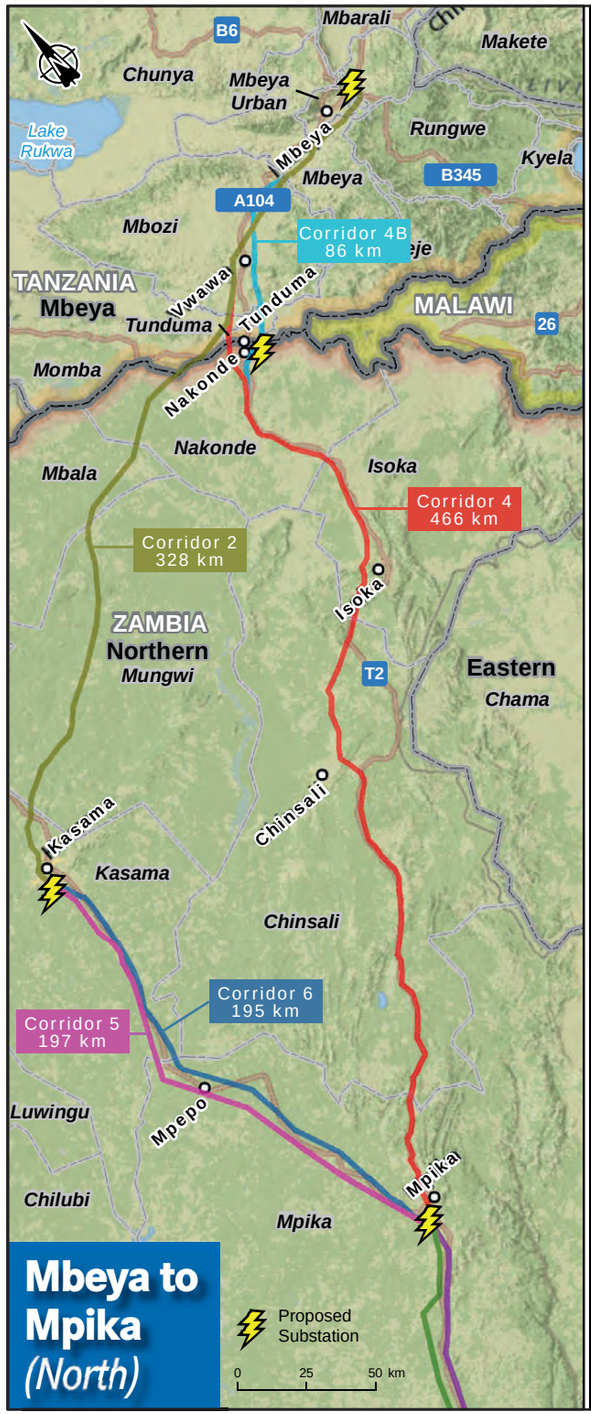
Prepared by: Melanie Lapointe, September 17th, 2015

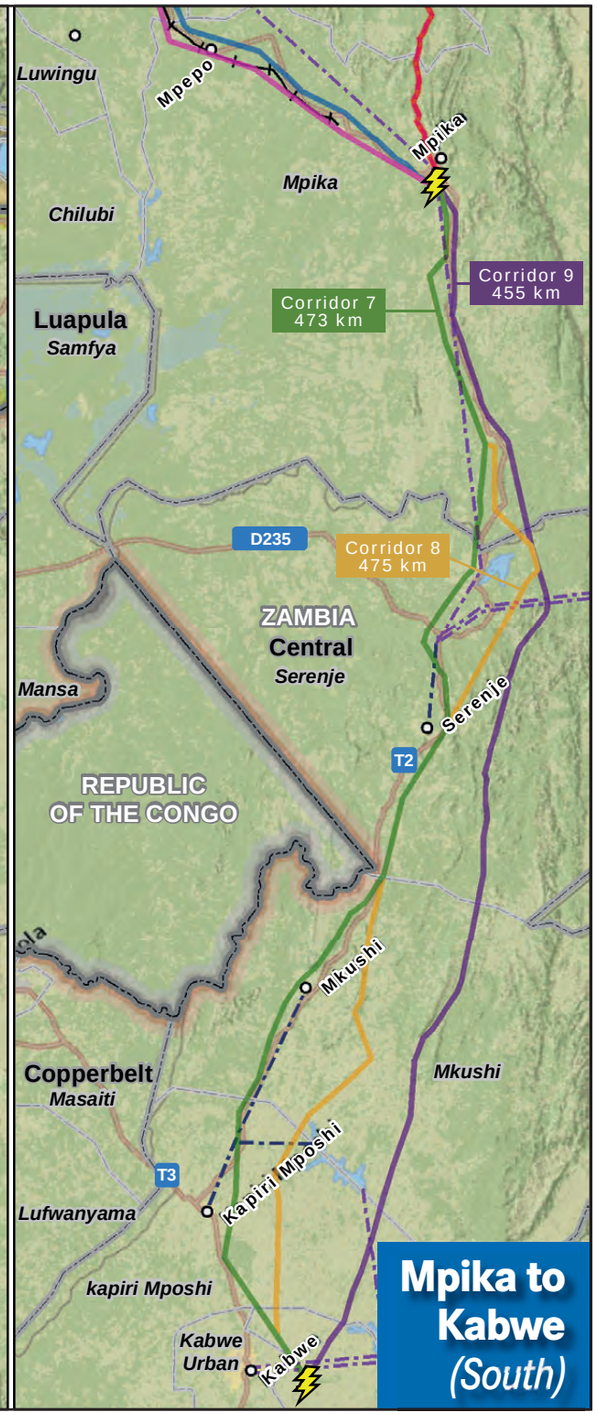
Tanzania – Zambia Power Interconnection Project

Environmental and Social Impact Assessment

Consultation on Corridor Options – August / September 2015

Date	Name / Surname	Fonction	Organization	Contact	Signature
10/09/15		FORESTRY OFFICER EXTENSION	Forestry	0977890444	
10/9/15		PACO	AGRIC S/Stock	0978373129	
10/9/15		physical planning and Housing	Provincial planner	0979129861	
10/09/15		~~Provincial~~ DPS	Provincial Admin	0977169132	
10-09-15		AS	PROV. ADMIN	0968591988	
" "		CHRMO	" "	0977461849	
		SENIOR WARDEN	ZAWA	0977968125	







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WSP

Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP)



Tanzania-Zambia Power Interconnection Project

NILE BASIN INITIATIVE
Initiative du Bassin du Nil

TANESCO

ZESCO

Public information document
August 2015

Project Summary

The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Mbeya (Tanzania) to Kabwe (Zambia).

The project is part of the ongoing regional energy integration process. It involves:

- The construction of a high voltage transmission line (330 kV or 400 kV)
- The construction of new electrical substations, or upgrade of existing ones;
- The construction of access and maintenance roads along the proposed power line

Different corridor options are currently being studied for the transmission line (see map). These affect a number of districts from the Central, Northern and Muchinga provinces.

The selection of the best corridor and the optimization of the line's route within the selected corridor will be based on results from the technical, environmental and social studies currently in progress, as well as on exchanges with project's stakeholders.

Project benefits for the region

- Promote and enhance electricity trade;
- Improve the power security and reliability of supply on the national systems;
- Contribute to economic development and regional integration.



Potential impacts associated with power transmission lines

- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Wayleave clearance may bring about damage to vegetation and wildlife habitat;
- Restriction of land use and agricultural activities under the line (within wayleave);
- Transmission lines may have effects on migratory birds and low flying aircrafts;
- Construction works may disturb seasonal crops and affect nearby population;
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave.

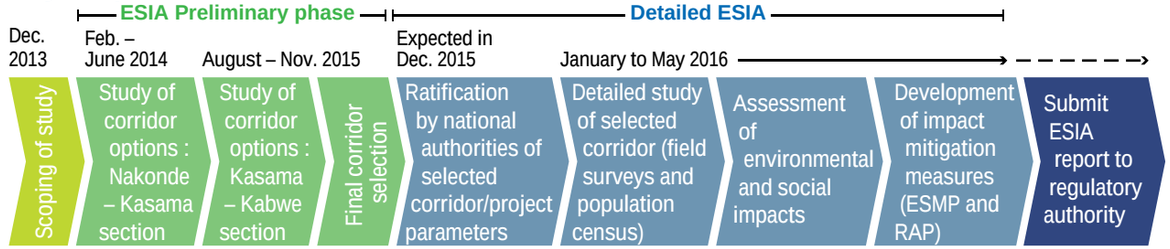
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- Applicable measures to mitigate negative impacts and to enhance positive impacts
- Required environmental and social monitoring and follow-up activities

Key steps of the ESIA process





Public consultation and disclosure

Information and consultation sessions with project stakeholders will take place throughout the ESIA process, including:

- Public assemblies in all project-affected districts and cities;
- Consultative meetings with concerned authorities, government services and NGOs;
- Regional workshops in Kabwe, Kasama and Chinsali.

Participants to public consultation sessions will have the opportunity to:

- Receive information about the project
- Express their concerns and expectations in relation to the project
- Make recommendations on the optimal route for the powerline;
- Comment on the preliminary results of the ESIA and the resettlement plan

Population Resettlement

The Tanzania – Zambia Power Interconnection Project will possibly displace some households, affect some agricultural lands and disturb other subsistence activities. Therefore, a Resettlement Action Plan (RAP) will be developed as part of the ESIA. The affected communities and their representatives will be consulted on compensation and resettlement issues. A socio-economic survey will also be conducted with the potentially affected households and individuals to determine the impact of the electrical transmission line.



APPENDIX

7-7 *MINUTES ROUND 4*

NELSAP

STAKEHOLDERS CONSULTATION REPORT

ESIA & RAP Tanzania - Zambia Interconnection Project

Project Update Meetings (No Regret Activities)
February 23rd to March 6th 2015

MARCH 2015

WSP

STAKEHOLDERS CONSULTATION REPORT

ESIA & RAP for the Tanzania – Zambia Interconnection Project

Project Update Meetings (No Regret Activities)

February 23rd to March 6th 2015

NELSAP

Report (final version)

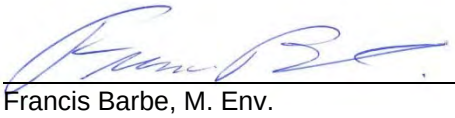
Project n° : 131-23540-00
Date : March 2015

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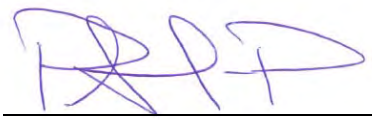
SIGNATURES

PREPARED BY



Francis Barbe, M. Env.
Stakeholder Engagement Coordinator

REVISED BY



Philippe Alary Paquette, LL.B., M.Env.
Project Coordinator

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APPENDICES

APPENDIX A BACKGROUND INFORMATION DOCUMENT

APPENDIX B MEETING MINUTES

APPENDIX C REGISTER OF PARTICIPANTS' SIGNATURES

1 INTRODUCTION

Stakeholder information and consultation meetings for the initial project (Mbeya – Kasama) were conducted in December 2013, as part of the ESIA scoping effort, and in February / March 2014 as part of the preliminary ESIA / RAP studies. The Project has since undergone important changes in its objectives and schedule, including its extension to Kabwe and the postponement of the final phase (detailed ESIA and RAP) of the study. In Zambia, some of the stakeholders were informed of these changes through a series of meetings conduted in July 2014 as part of the scoping effort for the extension to Kabwe, with a focus on the Muchinga and Central provinces. However, stakeholders in Tanzania, as well as those from the Kasama, Mungwi and Nakonde areas in Zambia, remained unaware of the changes brought to the Project.

In this context, an additional series of stakeholder meetings was proposed in order to “touch base” with concerned authorities at central and district levels, as well as other key stakeholders, and provide them with up-to-date information about the Project and the current status of the ESIA process. This time, the focus was on those stakeholders that had remained unaware of the Project’s changes. This was also seen as an opportunity to document any additional concern or expectations that may be raised by the Project.

Results from these Project update meetings are briefly described hereafter, including the general communication approach, the organizations and individuals that were met, and the key issues that were discussed. It is complemented by the detailed meeting minutes and a register of participants’ signatures, presented in Appendices.

2 GENERAL APPROACH

2.1 ENGAGEMENT OBJECTIVES

- Provide authorities and other key stakeholders with updated information on the Project and the status of the ESIA and RAP studies;
- Provide an opportunity for stakeholders to reiterate or update their concerns regarding the Project;
- Present upcoming stakeholder engagement activities and validate the proposed communication channels and formats.

2.2 COMMUNICATION TOOLS

- Background information document on the Project and the ESIA process, in a “Project Memo” format (see Appendix A);
- Printed map of the study area;
- Printed pictures (large format) of the type of towers that are likely to be used (single and double pylons options).

2.3 CONSULTATION TEAM IN ZAMBIA

- Francis BARBE (WSP);
- Benard T. GOMO and Geoffrey SIAME (AMC);
- Floribert KANYARUSHATSI, Mwukali WAMBUA and Louise-Andrée NDAYIZEYE (NELSAP).

2.4 CONSULTATION TEAM IN TANZANIA

- Francis BARBE (WSP);
- Ivone SHITINDI (MMK);
- Fikirini M. MTANDIKA (TANESCO).

3 STAKEHOLDERS REACHED

3.1 ZAMBIA

Date	Location	Organization	Individuals	Team
Feb. 23rd	Lusaka	ZEMA – EIA unit	Constantino MWEMBELA, senior inspector EIA; Dickson KABONSE, inspector EIA	FB, BG
Feb. 23rd	Lusaka	WWF Zambia	Chanda MWAPE and Raquel FILGUEIRAS, freshwater team	FB, BG
Feb. 23rd	Lusaka	Ministry of Agriculture and Livestock – Department of Agriculture	Emmanuel A. SAKALA, deputy director; Raynolds K. SHULA, principal agricultural specialist	FB, BG
Feb. 24th	Kasama	Office of Permanent Secretary – Northern Province	Hlobotha NKUNIKA, Permanent Secretary; Kamenda MATAA, chief planner	FB, GS, FK, MW, LN
Feb. 24th	Kasama	MLNREP – Forestry Departement – Northern Province	Ian KAKOMA KAYEHI, senior technician; Sharon N. KAUNDA, forestry officer	FB, GS, FK, MW, LN
Feb. 25th	Kasama	National Heritage Conservation Commission – Northern Region	Billiard B. Hshiko, director; Kelvin CHANDA, nacc	FB, GS, FK, MW, LN
Feb. 25th	Kasama	Kasama Municipal Council	Chileshe MWIKO, acting town clerk; Kashiwoto ABRAHAM, director planning; Joseph Davis KAGUAMBWE, public relations officer; James MUSONDA, provincial engineer	FB, GS, FK, MW, LN
Feb. 25th	Kasama	Chamber of Commerce and Industry of the Northern Province	John ZULU, president; Darius SIMFUKWE, member; David CHANDA, secretary.	FB, GS, MW, LN
Feb. 25th	Kasama	ZESCO Regional Office	Cephas LUNGU, regional manager	FB, GS
Feb. 26th	Mungwi	Mungwi District Council	Gladys LUANDA, Council Secretary	FB, GS, MW
Feb. 26th	Chinsali	Office of Permanent Secretary – Muchinga Province	Davy NSOFWA CHANDA, deputy permanent secretary; Chiwele KONDOMONE.	FB, GS, FK, MW, LN
Feb. 27th	Nakonde	Nakonde District Commissioner	James A. SINGOLI, district commissioner	FB, GS, FK, MW, LN
Feb. 27th	Nakonde	Nakonde District Council	Francis MAKESA, counsil secretary; Chusfophernyi NONHO, chief planner; Kapeso SHIKABONGA, community development officer	FB, GS, FK, MW, LN
Feb. 27th	Nakonde	ZESCO Nakonde Area	Albert KASOMBWE, area manager	FB, GS, FK, MW, LN

Team: FB: Francis BARBE (WSP); BG: Bernard GOMO (AMC); GS: Geoffrey SIAME (AMC); FK : Floribert KANYARUSHATSI (NELSAP); MW: Mwukali WAMBUA (NELSAP); LN: Louise-Andrée NDAYIZEYE (NELSAP).

3.2 TANZANIA

Date	Location	Organization	Individuals	Team
March 2nd	Tunduma	Township of Tunduma	Boniphace NOVATI, acting town executive officer; Abdul SALIM, town land surveyor; Rita KAMENYA, town community development officer; Deodatus CHAULA, town planner.	FB, IS, FM
March 2nd	Momba	District of Momba	Dradolf WILHELM, acting district executive director; Juma S. MWANYANJE, acting district planning and land officer; Jumanne R. NJOGHOYA, acting district environmental management officer.	FB, IS, FM
March 2nd	Vwawa	District of Mbozi	Mpandachombo NW, acting district administrative secretary; Hamis P. NZUNDA, district environmental management officer; Musam NWASILE, acting district planning and land officer; David Yosia SIMBEYE, acting district land development officer.	FB, IS, FM
March 3rd	Mbeya	Tanesco – Regional management office	Amos MAGANSA, Regional Manager.	FB, IS, FM
March 3rd	Mbeya	Mbeya City Council	January KAZOBA, city environmental management officer.	FB, IS, FM
March 3rd	Mbeya	Wildlife Conservation Society	Sophy Machaga, assistant director; Nuru Mbano.	FB, IS, FM
March 3rd	Mbeya	District of Mbeya	Marselon MLEZUA, acting district executive officer; Senzige R. MHINA, district land development officer; Kumbuka NDATTA, information officer.	FB, IS, FM
March 3rd	Mbeya	Mbeya Regional Commission	Constantine MUSHI, acting regional administrative secretary.	FB, IS, FM
March 4th	Dar Es Salaam	NEMC	Dr. Madoshi Heladius MAKENE, Director EIA.	FB, IS
March 4th	Dar Es Salaam	Legal and Human Rights Center	Hussein SENGU, George MASSUD.	FB, IS
March 5th	Dar Es Salaam	Minister of Lands, Housing and Human Settlements	George PANGAWE, Land planning director; Raphael NEMES, land officer.	FB, IS
March 6th	Dar Es Salaam	TANESCO Head Quarter	Hamdun R. MANSUR, director Environment and Social; Deogratias MSAKI, rural electrification; Paschal KIBASSA, project manager; Fikirini M. MTANDIKA, environmental eng.	FB, IS

Team: FB: Francis BARBE (WSP); IS: Ivone SHITINDI (MMK); FM: Fikirini M. MTANDIKA (TANESCO).

4 CONCERNS AND EXPECTATIONS RAISED BY STAKEHOLDERS

This section summarizes the concerns and expectations associated with the Project and the ESIA – RAP process that were the most frequently raised by stakeholders during the meetings. Issues raised in Zambia and in Tanzania are presented in two separate sections.

4.1 ZAMBIA

- **General Support to the Project:** Civic authorities and other stakeholders have reiterated their support to the Project, which they understand is of strategic importance for the country.
- **Project's social acceptability and communication challenge:** Local government representatives and other local stakeholders have raised that, given the current situation of continued power outages and underdeveloped distribution network affecting the region, people may protest if they perceive that this Project will not directly benefit to them in terms of access to electricity. Convincing affected communities, as well as political and economic leaders, that this Project will, in the long run, be beneficial for the whole nation is a communication challenge of critical importance for the Project's acceptability and will require an important sensitization effort.
- **Integration of step-down substations along the line:** Local government representatives have all expressed their wish for the addition of step-down substations along the transmission line to support the electrification of the region. Similarly, the central department of Agriculture has insisted that the Project must bring power to the emerging farm blocks and industrial farming areas that will be affected by the line's route, which are facing significant challenges in terms of power supply to support their development.
- **Expected economic benefits from the Project:** Stakeholders generally hope that the Project will go through their province, district or municipality so that it can benefit from jobs, economic opportunities, land lease revenues (pylon bases) and the development of the road network. Access to jobs for local populations during construction works and maintenance activities is a major concern. The development of new access roads is seen as an opportunity to increase access to rural areas. It was raised that political and economic leaders in Kasama are already excited about this Project and the perspective of Kasama developing as a power hub, because of the jobs and opportunities for local businesses that this would generate.
- **Importance of engaging with traditional chiefs**: Local government representatives and other key informants have all raised that traditional leaders are highly influential in the study area, in particular over land issues, and that they are key to the successful implementation of the Project. In particular, they need to be informed, consulted and involved in the coordination of the resettlement process.
- **Concerns over the resettlement process:** Although stakeholders have generally expressed their expectation for fair compensations and resettlement assistance, no major concern were raised over the need for resettlement. It is perceived that, unlike other areas to the south, the districts likely to be affected in the Northern and Muchinga provinces are sparsely populated and will have available lands for the resettled households. Houses are inexpensive (made of mud) and resettlement is rather seen as an opportunity to improve people's houses.
- **Involvement of civic authorities:** Local civic authorities (provincial secretaries and district councils) consider that they have an important role to play in the implementation of the Project at the following levels:
  - Communication and sensitization activities;
  - Identification of replacement lands for displaced households;

- Mediation between the population and the contractors;
- Coordination of the recruitment process for local workers. On this, it is raised that the recruitment process should involve district authorities rather than the traditional chiefs, as chiefs tend to favour their people and to retain part of the salaries.

→ **Land compensations:** Representatives from provincial and local civic authorities have converged in the idea that land acquisition by ZESCO will only be required for titled lands, which would represent only a small ratio of the total RIGHT-OF-WAY. Elsewhere, on customary or municipal lands, only the lands under the pylons or at substation sites are expected to be compensated for, through annual or biannual leases. Different views were expressed about who should receive such leases in customary lands: some considered that leases should be paid to customary chiefs, whereas others have argued that they should be paid to district or municipal councils. As for small farmers losing their plots on traditional lands, it is generally perceived that those do not own the land, thus are not eligible to land compensations, and will easily find replacement lands nearby (Kasama, Mungwi and Nakonde districts).

→ **Preference for in-kind compensations:** Local authorities in Kasama, Mungwi and Nakonde consider that in-kind compensations for lost structures and other assets are a better option than cash compensations. They see a risk that some households would drink the compensation money, rather than investing in better houses. Land-for-land compensations are considered a realistic and beneficial option, given that replacement lands are easy to find in the region.

→ **Consideration of gender issues:** Districts representatives have pointed that men tend to be considered more than women and therefore measures should be planned to ensure that women fully participate to the stakeholder engagement and resettlement processes. Women-headed households are said to be numerous.

→ **Wildlife conservation:** WWF considers that game management areas (GMA) are of critical conservation importance and must be avoided by the Project. Potential impacts on birds and bats migration corridors are other important concerns and should be addressed properly.

→ **Protection of forest reserves and headwaters:** While many stakeholders have raised that the line's route should avoid forest reserves, it is also generally acknowledged that some forest reserves are already severely degraded and therefore do not represent a strong ecological constraint to the Project. Avoiding the ones that are still in good ecological conditions and, in particular, the ones that were established to protect source water catchments, is considered critical.

→ **Protection of archeological sites:** NHCC's main concern for the Project is the protection of buried artefacts, fossils or graves that could be affected during excavation works. The potential for chance findings is considered high everywhere in the Northern region. During construction works, NHCC wishes to assist to excavation works for pylons at different places along the line.

4.2 TANZANIA

→ **General support to the Project:** Stakeholders at the regional and district levels have all expressed their support to the Project, which they see as serving the interest of the nation.

→ **Fair compensation and resettlement process:** Concerns related to the compensation and resettlement process have been raised by all stakeholders, at both the district and the national levels. Stakeholders expect proper negotiation and consensus reaching with affected landowners. Mbozi district representatives have stressed that replacement lands may be difficult to find and people may not easily accept to be moved somewhere else. Elements that are seen as critical in order to build trust into the compensation and resettlement process from all parties include:

- The early involvement and transparent communication with local governments (district, ward and village levels);
- The involvement of district valuers in the valuation process;

- Setting a participatory (involving local governments) and credible grievances management procedure.

Mbozi representatives are concerned that cash compensations may not be sufficient for farmers whose remaining plots will no longer be sufficient to sustain their livelihood. Different stakeholders have recommended that additional resettlement assistance should be provided for "economically displaced" households.

In-kind compensations are seen as a viable option, as long as it adopts a flexible approach so as to consider individual needs and preferences (e.g. by allowing farmers to find themselves their replacement lands). Others however, including TANESCO and the city of Mbeya, have stressed the challenges associated to the implementation of in-kind compensations over such a large area.

Finally, to mitigate resettlement impacts, Mbozi and Momba districts representatives have suggested that TANESCO should consider allowing affected farmers to grow annual crops within the right-of-way.

→ **Project contribution to urban and rural electrification:** Because of the underdeveloped electricity distribution network and of the unaffordability of electricity for most households, very few households in the study area currently have access to electricity. District representatives expressed their wish to see the Project contribute to the electrification of project-affected communities, even though they understand that it is not an electrification project. They pointed out that there is a potential for discontent from local populations if the objectives of the Project are not understood and if communities perceive that it does not benefit them. The objectives of the Project must therefore be cleary communicated from the start to avoid raising false expectations.

→ **Protection of forested areas:** Local government representatives have raised the importance of protecting the forested areas which are important for the subsistence of local populations (firewood and others products). The Mbozi District is concerned about the protection of its forest reserves (Ntazu and Longisonti). WCS is mainly concerned about the protection of the Poroto Ridge forest reserve which is considered to be a biodiversity hotspot, with a lot of monkeys and endemic species, besides being an important touristic site (crater). Monkey poaching in and around this reserve is an existing problem. WCS expects that the line will keep a sufficient distance from to the reserve.

→ **Consideration of districts' urban and land planning orientations**

Central Lands department and districts' representatives expect that the Project will considerer the local land and urban planning orientations and documents. In particular, the Project should:

- Seek to avoid urban perimeters;
- Involve local governments in the determination of access roads;
- Share the coordinates of the line route with affected districts authorities as early as possible to support their master planning process.

→ **Recruitment of local workers during construction and maintenance works**

Districts representatives expect that the Project will generate jobs for their populations.

→ **Workers' rights**

According to the Legal and Human Rights Center, the main challenges in terms of workers' rights for this Project are:

- Ensuring fair salaries, working conditions and social benefits;
- Ensuring that all workers - permanent and temporary – are provided with a contract, which should be clear on applicable and non-applicable social benefits, on the tasks to be performed and on the duration of the contract;
- Where applicable, the participation of trade unions as mediators between the workers and the employers should be facilitated.

Appendix A

PROJECT INFORMATION MEMO

Tanzania – Zambia Power Interconnection Project

Project Information Memo - February 2015

This document was prepared by WSP to support the informative and consultative meetings with the project's stakeholders as part of a series of project update meetings, in February 2015.

Project overview:

1. The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Tanzania to Zambia.
2. The project is part of the ongoing regional energy integration process, with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the national systems; and (iii) contribute to economic development and regional integration.
3. Preliminary studies were initiated in Dec. 2013 for a power interconnection between Mbeya (Tanzania) and Kasama (Zambia). Upon results of these preliminary studies, the project's Steering Committee (which integrates ZESCO, TANESCO and other key stakeholders) has decided to change the transmission line destination in Zambia to Kabwe for a better connection with Zambia's national power grid.
4. This has implied a review of the project's primary technical and economical parameters, which is currently underway.
5. The project involves:
   - The construction of a high voltage transmission line (400 kV or 330 kV) from Mbeya to Kabwe;
   - The construction of new electrical substations, or upgrade of existing ones, in Mbeya (Tanzania), Kabwe and potentially in Nakonde (Zambia);
   - The construction of access and maintenance roads along the power line.
6. The line could be mounted on single or double pylons. This configuration is not yet finalized. The double pylon option would ensure greater reliability, but would represent higher construction and resettlement costs.
7. At this early stage, the power line route is not known but is likely to affect a number of districts in the Northern, Muchinga and Central provinces.

Environmental and Social Impact Assessment (ESIA) process:

1. Conducting an Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) for the proposed power transmission line is a legal requirement under the National Environmental Management Act.
2. The ESIA aims to document the positive and negative effects that might have the project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The ESIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the project.
3. The RAP aims to document the households and collective assets that are likely to be displaced by the project. It specifies the procedures and actions that will be taken to mitigate adverse effects on those households and communities, compensate their losses and provide resettlement assistance.
4. WSP Canada, in collaboration with AMC, has been mandated to perform the ESIA and RAP studies.
5. The ESIA study was initially expected to be finalized by August 2014 but, because of the extension to Kabwe, it is now expected to be finalized by July 2016, accordingly with the following general schedule :
   - Preliminary ESIA and RAP (including corridor selection) - May 2015 to July 2015.
   - Detailed ESIA and RAP (including field surveys) - August 2015 to July 2016.
6. Informative and consultative meetings will be held several times during the ESIA and RAP studies allowing for inputs from authorities, affected communities and other stakeholders. This will include :
   - Consultations on corridor options;
   - Consultations on concerns and expectations of affected communities;
   - Consultations on the ESIA and RAP final results.

Benefits and impacts generally associated with power interconnection projects

Potential project benefits include:

- Connect isolated national electricity grids, increasing their reliability and security;
- Increase capacity for energy exchanges between the countries;
- Encourage regional development through access to electricity at lower costs;
- Create new opportunities for rural and urban electrification.

Negative impacts sometimes associated with transmission lines include:

- Wayleave clearance may bring about damage to vegetation and wildlife habitat;
- May open up virgin land and provide easy access to illegal loggers or poachers;
- Restrictions may apply on land use and agricultural activities under the line;
- Transmission lines may present a risk of collision for birds and low flying aircrafts;
- Construction works may disturb seasonal crops and affect nearby population;
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave.

Tanzania – Zambia Power Interconnection Project

Project Information Memo - February 2015

This document was prepared by WSP to support the informative and consultative meetings with the project's stakeholders as part of a series of project update meetings, in March 2015.

Project overview:

1. The governments of Tanzania and Zambia, with support from the Nile Basin Initiative / Nile Equatorial Lakes Subsidiary Action Program (NELSAP), are considering the development of an electrical transmission line connecting Tanzania to Zambia.

2. The project is part of the ongoing regional energy integration process, with the objective to: (i) promote and enhance electricity trade; (ii) improve the power security and reliability of supply on the national systems; and (iii) contribute to economic development and regional integration.

3. Preliminary studies were initiated in Dec. 2013 for a power interconnection between Mbeya (Tanzania) and Kasama (Zambia). Upon results of these preliminary studies, the project's Steering Committee (which integrates ZESCO, TANESCO and other key stakeholders) has decided to change the end point of the transmission line in Zambia to Kabwe for a better connection with Zambia's national power grid.

4. This has implied a review of the Project's basic technical and economical parameters, which is currently underway.

5. The project involves:

   - The construction of a high voltage transmission line (400 kV or 330 kV) from Mbeya to Kabwe;
   - The construction of new electrical substations, or upgrade of existing ones, in Mbeya (Tanzania), Kabwe and potentially in Nakonde (Zambia);
   - The construction of access and maintenance roads along the power line.

6. The line could be mounted on single or double pylons. This configuration is not yet finalized. The double pylon option would ensure greater reliability, but would represent higher construction and resettlement costs.

7. At this early stage, the power line route is not known but is likely to affect, in Tanzania, the city and district of Mbeya, the districts of Mbozi and Momba, and the city of Tunduma.

Environmental and Social Impact Assessment (ESIA) process:

1. Conducting an ESIA for the proposed power transmission line is a legal requirement in Tanzania under the Environmental Assessment and Audit Regulations.

2. The ESIA aims to document the positive and negative effects that might have the Project on the natural and human environments. It also aims to identify and plan the required measures to mitigate or compensate for adverse impacts and to maximize positive impacts. The ESIA shall also put forward an environmental and social monitoring programme to accompany the implementation of the Project.

3. WSP Canada, in collaboration with MMK, has been mandated to perform the ESIA study.

4. The ESIA study was initially expected to be finalized by August 2014 but, because of the extension to Kabwe, it is now expected to be finalized by July 2016, accordingly with the following general schedule :

   - Preliminary ESIA and RAP (including corridor selection) - May 2015 to July 2015
   - Detailed ESIA and RAP (including field surveys) - August 2015 to July 2016

5. Informative and consultative meetings will be held several times during the ESIA study allowing for inputs from authorities, affected communities and other stakeholders. This will include :

   - Consultation on corridor options;
   - Consultation on concerns and expectations of affected communities;
   - Consultation on the ESIA and RAP final results.

Benefits and impacts generally associated with power interconnection projects

Potential Project benefits include:

- Connect isolated national electricity grids, increasing their reliability and security;
- Increase capacity for energy exchanges between the countries;
- Encourage regional development through access to electricity at lower costs;
- Create new opportunities for rural and urban electrification.

Negative impacts sometimes associated with transmission lines include:

- Wayleave clearance may bring about damage to vegetation and wildlife habitat;
- Transmission lines may open up virgin land and provide easy access to illegal loggers or poachers;
- Restrictions may apply on land use and agricultural activities under the line;
- Transmission lines may present a risk of collision for birds and low flying aircrafts;
- Construction works may disturb seasonal crops and affect nearby population;
- Transmission lines may, for safety reasons, require people to resettle outside the wayleave.

Appendix B

MEETING MINUTES

MEETING MINUTES
PROJECT UPDATE MEETINGS IN ZAMBIA, FEB. 23 TO 27 2015
ESIA TANZANIA-ZAMBIA INTERCONNECTION

ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY (ZEMA) – EIA UNIT
Date: Feb. 23rd, 2015
Meeting location: ZEMA office in Lusaka
Participants: Senior inspector EIA; Inspector EIA. Project team: Francis BARBE (WSP); AMC.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the current status of the Project and ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Integration of ESIA and RAP studies:** Too often, ZEMA observes a lack of integration and coherence between projects' ESIA and RAP studies. For the Tanzania Zambia Project, ZEMA representatives are glad to see that WSP is performing both the ESIA and RAP studies together and encourages the consultant to ensure proper integration of both studies.
2.	**Submission of ToRs at Lusaka office:** Because of the national / international scope of the Project, it is advised to submit the ToRs and Scoping Report for the ESIA-RAP at ZEMA's office in Lusaka, rather than at the Ndola office where they were submitted the first time, in May 2014. Submitting the documents directly in Lusaka will accelerate their processing by ZEMA.
3.	**Best timing for submission of ToRs:** It is recommended to wait for the conclusion of the preliminary studies before submitting the ToRs of the detailed ESIA – RAP to ZEMA. In particular, ZEMA expects that the ToRs and Scoping report will present the corridor chosen for the detailed study, as well as the rational for its selection.
4.	**Coordination between ZEMA and NEMC:** ZEMA suggests that the ESIA process should integrate coordination meetings between ZEMA and NEMC in order for them to harmonize their requirements and procedures for the Project. Such coordination meetings with environmental authorities from other countries have been experienced positively by ZEMA on other transboundary projects, where it has allowed for the production of one single ESIA report, submitted to both countries, rather than having different and country-specific reports.
5.	**Meeting request procedure:** To ensure due consideration, future meeting requests should be addressed to the Head of the EIA unit and submitted directly to his secretary, at ZEMA's office in Lusaka.

Prepared by: Francis Barbe, Feb 23rd 2015

WORLD WILDLIFE FUND (WWF) ZAMBIA
Date: Feb. 23rd, 2015
Meeting location: WWF office in Lusaka
Participants: WWF, freshwater team. Project team: Francis BARBE (WSP); Benard GOMO AMC.
Duration of meeting: 1,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Community engagement:** The proposed approach for community engagement (village-level consultations at consultation round 3 only) appears insufficient to allow for the informed participation of local populations if they are not provided with relevant information prior to consultation meetings. Rather than reaching a high ratio of communities only once, the consultant should consider iterative meetings with a limited number of communities. It is recommended to focus on biggest communities.
2.	**Protection / conservation areas:** The consultant needs to make sure that the whole range of protection / conservation areas in Zambia, as per current regulations (Zambia Wildlife Act and others), are considered and avoided by the power line. This includes the different types of forest reserves. Some types of protection areas seem to be missing on the map presented by the consultant. Game management areas (GMA) are of critical conservation importance and must be avoided by the Project. The power line will likely create an entry point for human settlements, as well as a precedent for future linear infrastructures, and therefore should remain distant from protected areas.
3.	**Bird migration corridors:** Bird migration corridors are likely to cross the study area, in particular near the Kasanka and Lavushi Manda national parks. These corridors should be mapped. See with the Kasanka Trust (NGO acting as manager for the Kasanka national park) for information and maps on bird migration corridors.
4.	**Risks associated with birds nesting on the power line:** Power lines are attractive to many bird species, including vultures and eagles, in search for nesting grounds. This is even more so near wetlands areas, where nesting grounds are more difficult to find for some species. This should be addressed by ZESCO as it increases the risk of collision and electrocution for these birds, besides potentially affecting the integrity of the infrastructure (extra weight from the nests and excrements, risk of fire).
5.	**Protection of migratory corridors for bats:** The lake Bangwelu area is known for being at the center of major migratory movement of bats, being one of the world's largest mammal migration patterns, and a national priority in terms of conservation. The ESIA needs to make sure that the Project is located far enough so as to generate no impact on this migration pattern.

6.	**Protection of the shoebill endangered species:** This migratory and endangered bird is likely to be found in the Project area.
7.	**Terrestrial migratory corridors:** These are unlikely to be found within the study area. The focus should be on avoiding the protected areas, in particular the GMA.
8.	**Protection of headwaters:** The protection of source water catchments is critical from ecological and social points of view. Avoiding these areas should figure as an environmental sitting criterion. Many of the forest reserves were established to protect source water catchments. Maps of these headwater areas should be available at the forestry department.
9.	**Application of international standards and guidelines for the mitigation of power lines' impact on wildlife:** WWF expects ZESCO to apply best international practices when it comes to the mitigation of power lines' impact on wildlife and birds in particular. Such best practices should include relevant South African guidelines and European Union directives.
10.	**Poaching control and prevention:** Risk of increased poaching (by workers during construction and by local populations during operation) is a major concern. Of particular concern is the use, by local populations, of wire leftovers found on the ground to produce snares for animals. Wire fences are another source of wire used for the production of snares, and therefore should be avoided.
11.	**Use of local experts:** The names and contact information for a number of local biodiversity experts are provided to the consultant.

Prepared by: Francis Barbe, Feb 23rd 2015

MINISTRY OF AGRICULTURE AND LIVESTOCK – DEPARMENT OF AGRICULTURE
Date: Feb. 23rd, 2015
Meeting location: Min. of Agriculture office, in Lusaka
Participants: Ministry: deputy director; Principal agricultural specialist. Project team: Francis BARBE (WSP); AMC.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Access to power for emerging farm blocks and agroindustrial areas:** These areas are facing significant challenges in terms of power supply / access to electricity to support their development. Therefore, the Project will be perceived positively and any encroachment on productive lands will be accepted if farmers can see that they will benefit from power. On the other hand, farmers are likely to strongly oppose to the Project if it does not translate into increased access to electricity for them. The department of Agriculture insists that the Project must bring power to the farm blocks. Otherwise its acceptability is at risk.
2.	**Potential for partnerships with agroindustrial producers affected by the ROW:** To enhance the Project's acceptability, ZESCO should consider potential partnerships with industrial farmers from affected agroindustrial areas in order to finance the integration to the Project of additional substations serving the purposes of the farm blocks.
3.	**Partial land acquisition within ROW:** Expropriation / land acquisition by ZESCO will only be required for titled lands, which would represent only a small ratio of the total ROW. On titled lands, partial expropriation (pylons bases only) may seem unrealistic, as the ROW entails important constraints to development on the affected lands.
4.	**Land-for-land compensations:** This approach has been experienced successfully in different parts of the country. It is considered realistic and beneficial, in particular for small-scale producers who will benefit from secure land titles.

Prepared by: Francis Barbe, Feb 23rd 2015

OFFICE OF THE PERMANENT SECRETARY – NORTHERN PROVINCE
Date: Feb. 24th, 2015
Meeting location: Provincial administration center, Kasama
Participants: OPS: Permanent Secretary; chief planner. Project team: Francis BARBE (WSP); Geoffrey SIAME (AMC); NELSAP.

	Summary of discussions:
1.	**Comments on potential realignment of the line out of Kasama:** The Permanent Secretary understands the reasons for the Project's realignment to Kabwe, but feels that I would be important and beneficial to still have it going through Kasama and the Northern Province in order to 1) increase power supply in Kasama and 2) benefit from the jobs associated with construction and maintenance activities. He says that people in the province are already excited about this Project and the perspective of Kasama developing as a power hub, because of the jobs that this would generate.
2.	**Role of traditional and civic leaders in the resettlement process:** Traditional leaders are key to the success of any resettlement process in the province. They need to be informed, consulted and involved in the coordination of the process. In particular, traditional leaders are the ones that can best explain the process to local populations and get them to accept it. Resettlement cannot succeed without the support of traditional chiefs. Provincial authorities also have a role to play in the resettlement process, as they will coordinate the efforts of the different government provincial services involved and will act as a mediator between the population and the contractors.
3.	**Experience with the ongoing construction of the Pensulo – Kasama 330 kV line:** Positive impacts experienced include: economic benefits for local populations through the selling of all kinds of food to the workers; the improvement of roads; contractor's contribution to community development projects. Negative impacts experienced include: Different problems relating to interactions between workers and local women, including many cases of unplanned pregnancies, risk of HIV/AIDS propagation, and social disruption.
4.	**Prevention of HIV/AIDS:** For projects involving a number a foreign workers, contractors are required to collaborate with the provincial authorities in the implementation of HIV/AIDS prevention and education programs. Too often however contractors do not comply with this requirement.
5.	**Stakeholder engagement process:** WSP indicates that the next consultation round, which will focus on corridor options, is planned to occur in the upcoming months. If none of the corridor options under study affects the Northern province, further meetings with organizations from the Northern province will no longer be required and provincial authorities will be advised by WSP through an official communication. Participants recommended that parliament members for the constituencies affected by the Project should also be integrated to the consultation process.

Prepared by: Francis Barbe, Feb 24th 2015

MLNREP – FORESTRY DEPARTEMENT – NORTHERN PROVINCE
Date: Feb. 24th, 2015
Meeting location: Forestry department office, in Kasama
Participants: Ministry: senior technician; forestry officer. Project team: Francis BARBE (WSP); AMC; NELSAP; NELSAP.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Compensations for cut trees:** In forest reserves, cut trees are subject to a compensation to the State, which is valued by the forestry department based of compensation rates indicated in current legislation. On traditional/customary lands, no compensation is required for cut trees, but reforestation programmes should be developed with traditional chiefs. On titled lands, lost trees should be comprised in the calculation of compensations.
2.	**Protection of riparian vegetation:** Current legislation requires that a 30 m vegetation buffer should be maintained along streams.
3.	**Forest reserves:** Forest reserves should be avoided, as much as possible, by the power line. However, not all forest reserves have the same ecological value and sensitivity. Some are already severely degraded and therefore do not represent a strong ecological constraint to the Project. Others however have been established to protect source water catchment areas of critical importance to communities. Those source water catchment areas need to be avoided by the Project (they are identified in the Forest Act).
4.	**Likely indirect impacts on forest reserves if crossed by the power line**: People are not allowed to enter into forest reserves. By passing through these areas, the line's right-of-way will generate an entry point that will be used by nearby populations for agriculture, hunting, firewood collection and charcoal production, which will contribute to further degradation of these protected areas.
5.	**Next consultation round:** WSP indicates that the next consultation round, on corridor options, is planned to occur in the upcoming months. If none of the corridor options under study affect the Northern province, further meetings with organizations from the Northern province will no longer be required and the forestry department will be advised by WSP through an official communication.

Prepared by: Francis Barbe, Feb 24th 2015

NATIONAL HERITAGE CONSERVATION COMMISSION – NORTHERN REGION
Date: Feb. 25th, 2015
Meeting location: NHCC office, in Kasama
Participants: NHCC: director; nacc. Project team: Francis BARBE (WSP); AMC; NELSAP.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Territorial jurisdiction:** NHCC office in Kasama covers the Northern Region (Northern, Muchinga and Luapula provinces). The Central province is covered by the Lusaka office.
2.	**Concerns over power line projects:** NHCC main concern in view of the Project is the protection of buried artefacts, fossils or graves that could be affected by the excavation works, in particular for the pylons bases. The potential for chance findings is considered high everywhere in the Northern region. Graves and archeological artefacts have recently been found on another ZESCO project. A lot of fossils are found around Mpika.
3.	**NHCC involvement in the ESIA development:** NHCC wishes to be consulted throughout the ESIA process. It also offers its services to produce the national heritage and archeological baseline study (a budget would then have to be negotiated between WSP and NHCC). The use of an expert independent from NHCC is also accepted.
4.	**Supervision of construction works:** During construction works, NHCC wishes to assist to excavation works for pylons at different places along the line.
5.	**Chance finds procedure:** Chance finds procedures are regulated in Zambia. Any discovery should be immediately reported to NHCC, which will dispatch an agent on site to assess the situation and make recommendations on how to proceed.
6.	**Request for regional data on national heritage conservation sites:** It is convened that WSP will address a data request directly to NHCC regional office in order to receive the list and geographic location of all national heritage sites in the Northern region.
7.	**Categories of national heritage sites:** There are 8 categories: natural heritage sites; cultural heritage sites; traditional heritage sites; archaeological heritage sites; historical heritage sites; architecture heritage sites; engineering heritage sites.
8.	**Consultation approach with NHCC:** For the next consultation round, on corridor options, NHCC would prefer to be met individually, rather than through a grouped meeting with other services, so that discussions can focus on national heritage conservation issues.

Prepared by: Francis Barbe, Feb 25th 2015

KASAMA MUNICIPAL COUNCIL
Date: Feb. 25th, 2015
Meeting location: Kasama Civic Center
Participants: Kasama Municipal Council: acting town clerk; director planning; public relations officer; provincial engineer. Project team: Francis BARBE (WSP); AMC; NELSAP.
Duration of meeting: 1,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Importance of engaging with traditional chiefs**: Both the paramount chief Chitikutumu and its senior and sub chiefs need to be informed and consulted during the study process. This is critical for the success of the Project, as chiefs are highly influential. As a starting point, traditional chiefs can be reached through the Municipal Council (two chiefs representatives sit on the Council). It is advised to have individual meetings with chiefs, at their respective palace, as a symbol of respect. Meeting chiefs at their palace only once in the process is OK. Further exchanges can occur through the Council. Some chiefs are highly educated and will want to review the ESIA report.
2.	**Perceived benefits of the Project for the District:** The Council hopes that the Project will go through Kasama so that it can benefit from jobs, economic opportunities, revenues from the lease of land for pylons, and the development/improvement of the road network. In particular, the development of new access roads is seen as an opportunity to increase access to rural areas.
3.	**Resettlement issues:** The Council has no major concern over the resettlement. Unlike other areas to the south, Kasama district is sparsely populated and land is available for resettled households. Houses are inexpensive (made of mud) and resettlement should rather be seen as an opportunity to improve people's houses.
4.	**Compensations for land:** Only the lands used by the pylons and substations are usually compensated for. No land compensations are required for the rest of the right-of-way. Compensations for land usually take the form of a lease, paid biannually or yearly. As such, the land is not sold, but leased. There are no official rates, and these have to be negotiated with traditional leaders on customary lands and with the Council in the urban perimeter.
5.	**Role of the District Council in the resettlement process:** The District Council should assist to the negotiations with traditional leaders on compensation rates, in order to provide guidance and avoid opportunistic exaggerations. The Council can help in the planning and implementation of communication strategies when it comes to public information,

	announcements and appointments with village headmen.
6.	**Kasama extended perimeters:** Still in the process of being approved. A map showing the limits of the proposed perimeter will be shared with WSP.
7.	**Council composition**: Kasama Municipal Council is composed of wards representatives (2 per ward), chiefs representatives (2), and representatives of electoral constituencies / parliament members (2).

Prepared by: Francis Barbe, Feb 27th 2015

CHAMBER OF COMMERCE – NORTHERN PROVINCE
Date: Feb. 25th, 2015
Meeting location: Wamulungwe Lodge, Kasama
Participants: Chamber of Commerce: president; member; secretary. Project team: Francis BARBE (WSP); AMC; NELSAP
Duration of meeting: 1,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Project's acceptability:** The region has been suffering from daily power outages for years. In this context, it appears as an aberration that ZESCO intends to invest in a new transmission line for energy trade, rather than investing in the improvement of the existing distribution system. The Chamber of Commerce understands and supports the objectives of the Project, but there could be an outcry from the population if it is perceived that these investments will not translate into an improvement of power reliability in the region.
2.	**Comments on potential realignment of the line through Chinsali:** It is perceived that a realignment of the line favoring Chinsali would be detrimental to the Northern province as it would lose the benefits from jobs creation and opportunities for local businesses during construction works.
3.	**Participation of ZESCO to stakeholder meetings:** It is raised that ZESCO, as the Project promoter, should participate to informative and consultation meetings like this one for a more direct communication.
4.	**Contribution of the Chamber of Commerce to the ESIA process:** The Chamber of Commerce could help in the communication with the chiefs and rural communities, as it integrates representatives of both.
5.	**Information about economic opportunities associated with the Project:** Should the Project affect the Northern province, the Chamber of Commerce would like to receive first-hand information on the economic opportunities that the Project will bring, so that it can help the business community and local populations to better prepare in view of the Project.
6.	**Next consultation round:** The next stakeholder consultation meetings will occur once that the transmission line axis and corridor options have been determined. Stakeholders will then have the opportunity to comment on corridor options. In the eventuality that the Northern province is no longer affected, the Chamber of Commerce will be informed through official communication.

Prepared by: Francis Barbe, Feb 28th 2015

MUNGWI DISTRICT COUNCIL
Date: Feb. 26th, 2015
Meeting location: Mungwi Civic Center
Participants: District Council: Council Secretary. Project team: Francis BARBE (WSP); AMC; NELSAP
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Project's social acceptability:** Given the current situation of continued power outages affecting the district, and urgent needs in terms of power reliability, people may protest if they perceive that this Project will not benefit to them in terms of access to electricity. Convincing people that this Project will, on the long run, be beneficial for the whole nation will be a communication challenge of critical importance for the Project's acceptability.
2.	**Access to jobs:** Access to jobs for local populations during construction works and maintenance activities, including slashing, is a major concern.
3.	**Role of civic authorities in the recruitment process:** The recruitment process should involve civic authorities (districts) rather than the traditional chiefs. Chiefs will tend to favour their people and to retain part of the salaries. Money should never be distributed through them. Working with civic authorities as the coordinators of the recruitment process will provide for more transparency, as districts are bound to official policies and can be audited.
4.	**Compensations for land:** Only the lands under the pylons and at substation sites need to be compensated for. Compensations should be paid to the owners on titled lands, or to the Council on bare / customary lands. No compensations are to be paid to traditional chiefs. As for small farmers losing their plots on traditional lands, there is no need to buy a new piece of land for them, as they will easily shift to new lands nearby. Assistance to these farmers could include discussions and follow-up with traditional leaders just to ensure that the displaced households are relocated on equivalent or better lands.
5.	**Preference for in-kind compensations:** It is better to help displaced households to build a new and better house than to simply give money. There is a risk that some households will drink the money, rather than investing in a better house. Drinking problems in the district do not only affect men, but also women.
6.	**Consideration of gender issues:** Men tend to be considered more than women and therefore measures should be planned to ensure that women fully participate to the

	stakeholder engagement process and to the resettlement process.
7.	**Composition of the District Council:** Mungwi District Council integrates one counselor per ward, two chiefs' representatives and constituencies' representatives (PM).
8.	**Communication strategy to reach local populations:** Information should be channeled through the District Council and ward development committees, which will bring it at the village level; Use of local radio, Radio Mano, in Kasama (provincial broadcast); Use of ZANIS megaphone services; review of information material by the district technical staff (the district can also provide assistance in the translation of material to local languages).
9.	**Engagement approach with traditional chiefs:** The paramount chief Chitimukulu needs to be met. Gifts, including money and food, are usually offered to him. It is best to wait until a corridor is chosen for the power line before meeting with him. Senior and sub chiefs also need to be met. These are to be identified with the District Council. Only go to gazetted chiefs (officially recognized). There are 3 gazetted seniors chiefs in Mungwi District.

Prepared by: Francis Barbe, Feb 28th 2015

OFFICE OF THE PERMANENT SECRETARY – MUCHINGA PROVINCE
Date: Feb. 26th, 2015
Meeting location: Provincial Center, Chinsali
Participants: OPS: Deputy permanent secretary; Project team: Francis BARBE (WSP); AMC; NELSAP
Duration of meeting: 0,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Support to the Project:** The Deputy Permanent Secretary reiterates its support to the Project and understands its strategic importance for the country.
2.	**Urban and rural electrification in the Muchinga province:** The Deputy Permanent Secretary expresses its wish for the integration to the Project of a step-down substation in Chinsali in order to contribute to the electrification of the Muchinga province, which faces a power deficit to support its development.

Prepared by: Francis Barbe, Feb 28th 2015

NAKONDE DISTRICT COUNCIL
Date: Feb. 27th, 2015
Meeting location: Provincial Center, Chinsali
Participants: District Council : counsil secretary; chief planner; community development officer. Project team: Francis BARBE (WSP); AMC; NELSAP
Duration of meeting: 1,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Project's social acceptability and communication challenge:** Affected communities will feel frustrated if they do not perceive direct benefits from the Project. This could encourage pylons vandalism, a problem already observed with other lines elsewhere in the district. To avoid this, a step-down substation should be planned somewhere in between Nakonde and Chinsali, so as to allow for the electrification of the area. In addition to this, an important sensitization / communication effort is required to help local populations understand the objectives and benefits of the Project.
2.	**Preference for in kind compensations:** In kind compensations to affected households for lost assets and farm plots are preferred to cash compensations. Replacement lands are usually easy to find in the district.
3.	**Consideration of gender issues:** Men tend to be considered more than women and therefore measures should be planned to ensure that women fully participate to the stakeholder engagement process and to the resettlement process. It is recommended that separate focus group discussions with women be held in communities. Cash compensations are not advised as some men would likely run away with the money. Women should have access to the jobs created by the Project. Women-headed households are many in the district.
4.	**Role of the Council in the resettlement process:** The District Council can contribute to the communication / sensitization activities and help in identifying replacement lands for displaced households.
5.	**Compensation for lands:** Only the land under the pylons or at substation sites are usually compensated for, through a lease paid annually.
6.	**Problems experienced with crops under the line**: The main problem with people growing crops within the right-of-way of existing power lines is that farmers tend to resist when there is a need to slash their crops and clear the ROW for repairs or maintenance of the lines. This creates delays, with maintenance works sometimes having to wait until the end

	of the production season. This problem is mostly seen with maize plantations under the line. Also, people growing crops under the line tend to build houses or other structures every time closer to the ROW, and sometimes within. For these reasons, it is considered best to discourage people from using the ROW for agriculture.
7.	**Information and consultation of traditional chiefs:** Involvement of Chieftainess Waitwika (Namwanga tribe, covering Nakonde district) in the Project development process is very crucial to its success. It is through her that the information will reach village headmen and communities.
8.	**Active NGOs in Nakonde:** Action Aids (Human Rights); Wilsa (Human Rights); Gender Based Values – GBV (gender issues).

Prepared by: Francis Barbe, Feb 28th 2015

ZESCO – NAKONDE MANAGEMENT AREA
Date: Feb. 27th, 2015
Meeting location: Provincial Center, Chinsali
Participants: ZESCO: area manager. Project team: Francis BARBE (WSP); AMC; NELSAP.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the Project and ESIA process.

	Summary of discussions:
1.	**Problems faced with crops under the line:** ZESCO policies forbid people from growing crops under power lines. However, traditional chiefs allow their people to do so and ZESCO has no choice but to tolerate it, but tries to discourage it. ZESCO informs people that if they do it, it is at their own risk to have their crops slashed any time by ZESCO's maintenance teams. The main reason why ZESCO forbids crops within ROW is to ensure a quick access to any segment of a line, when required. A complete clearance of right-of-ways is performed yearly (slashing of existing crops and bushes). ZESCO does not maintain a maintenance track under the lines.
2.	**Pylons vandalism:** Pylons vandalism is an issue in remote areas of the district. People take iron bars from the towers to construct anything, from beds to agricultural tools. A solution to this are stringent sentences to people caught so as to afraid others to do so.
3.	**Engagement with traditional leaders:** Nakonde being the land of the Namwanga people, the involvement of chieftainess Waitwika is critical for the implementation of the Project in the district. She is a key stakeholder and if she is with the Project, than the village headmen will follow. A meeting with her at her palace can be arranged through the District Commissioner, or the District Council.

Prepared by: Francis Barbe, Feb 28th 2015

MEETING MINUTES
PROJECT UPDATE MEETINGS - TANZANIA-ZAMBIA POWER INTERCONNECTION
Tanzania, March 2nd to 6th 2015

TUNDUMA TOWNSHIP
Date: March 2nd, 2015
Meeting location: Tundama Township Center
Participants: Tunduma: acting town executive officer; town land surveyor; town community development officer; town planner. Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Concerns and expectations raised by the project:** • Protection of forested areas; • Fair compensations to affected households; • Involvement of the town planning committee in determining the location of access roads (new access roads are seen as an opportunity for the development of the township, as long as they are coherent with the township's urban planning act); • Public security during and after construction; • The line route should seek to avoid the urban centers of the township; • Early access to the transmission line coordinates for the purpose of master planning (the township is currently developing its master development plan).
2.	**Administrative structure of the Township:** Formerly part of the Mbozi District, Tunduma has become a Township in Dec. 2011. For now it belongs to the newly created Momba District, but is in the process of becoming a City of its own, and will then be administered by a City Council. As for now, it is administered by a township council, composed of representatives from the wards and streets committees, along with technical staff (heads of department). It has a number of thematic "steering committees", including the economic, environmental, management, education, and HIV/AIDS committees. The council is currently in the process of developing its interim Master Development Plan, but is lacking financial resources to finalize this process.
3.	**Engagement of traditional chiefs:** Chiefs are influential and should play a role in bringing the information to the communities. They need to be consulted and be part of the communication strategy. It is recommended to reach them at the ward level, in joint meetings with the wards development committees, to which they would participate as invitees (no need for separate or individual meetings with the chiefs).
4.	**Land acquisition:** All lands within the township are considered "urban lands", and there is no customary land. Such urban lands are the property of the government and, as such,

	there is no need for land acquisition by TANESCO in the township. A yearly lease should however be paid to the township for the land used by the project.
5.	**Compensations and assistance to affected households:** TANESCO's policy of full costs compensation (cash compensations) is considered fine. Land for land compensations for small farmers have also been experienced positively in the township and are considered to be a viable and relatively easy to implement option. In kind compensations of structures and other assets are seen as more complicated to implement. Most importantly, in case of in kind compensations, a flexible approach is recommended so as to consider individual needs and preferences. It is recommended to let farmers find themselves their replacement lands, and support them financially.
6,	**Involvement of the council:** The council wishes to be consulted at all development stages of the project. In particular, the council wishes to participate to the lands and assets valuation process, as it best knows its people, who are the owners, and where to locate them. District valuers should be involved in the valuation process.
7.	**Preferred axis for the line:** A line route affecting the northern end of the township is considered to be preferable, because land occupation is less dense in that area, whereas the southern end of the township is more developed.
8.	**Recommended stakeholder engagement approach:** A usual procedure in Tunduma would be to have consultation meetings first at the level of the township council, and second at the village level. There is no need to have meetings at the ward or street levels, as those will be informed by their respective representatives sitting at the council. For this project, is it recommended to 1) consult the council on corridor options; 2) meet the council to present the chosen corridor and present the schedule for community meetings (ward representatives would then channel the information to village chairmen), and 3) have the community meetings.
9.	**Other stakeholders and NGOs:** It is recommended to consult the business community through the Chamber of Commerce of Tunduma. Different local NGOs in Tunduma could also provide insights on environmental and gender issues, such as the Plateform for Women Business.

Prepared by: Francis Barbe, March 3rd 2015

MOMBA DISCTRICT
Date: March 2nd, 2015
Meeting location: Momba District Center
Participants: Momba District: acting district executive director; acting district planning and land officer; acting district environmental management officer. Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Support to the project:** The district representatives express their support to the project, which they see as for the benefit of the country.
2.	**Concerns and expectations raised by the project:** • Project contribution to the electrification of rural areas; • Fair compensation and resettlement process; • Protection of forests, which are important for the subsistence of local populations (firewood and others products); • Protection of water sources, most often located in lowland areas; • Risk that some people affected by the ROW would receive the compensations, and then sell their land to other people unaware of the situation.
3.	**Administrative organisation:** Formerly part of Mbozi , the Momba district was created in 2013. As of today, it integrates the township of Tunduma, which is in the process of becoming a City Council independent from Momba. Momba council is composed of 45 counsellors, of which 24 are from Tunduma. The district is divided into wards, which are divided into villages.
4.	**District's situation in terms of access to electricity:** As per today, two villages out of 72 in the district have access to electricity. Some rural electrification programmes are underway in the district.
5.	**Categories of land likely to be found:** The district is all customary lands. Some farmers have titled deeds, but the majority do not.
6.	**Involvement of traditional chiefs:** Chiefs are influential in the district. They can be reached through the district council, as counsellors will take the information to them. Therefore, it is deemed unnecessary for this project to organize meetings with the chiefs.
7.	**Sacred / touristic sites:** There is no sacred site, nor any touristic site, in this part of the

	district.
8.	**Preferred axis for the line:** In general terms, the south/eastern side of the road A104 is considered to be preferable because it has less permanent buildings, it is less densely populated, and it has less permanent crops, if compared to the north/western side of road A104. On either side of road A104, corridor options to be determined should keep a good distance from the road, since the population and dwellings tend to get denser the closer we get to the road.
9.	**Recommended stakeholder engagement approach:** It is recommended for this project to have informative and consultative meetings at the council, ward and village levels.

Prepared by: Francis Barbe, March 3rd 2015

MBOZI DISTRICT
Date: March 2nd, 2015
Meeting location: Mbozi District Center, in Vwawa
Participants: Mbozi District: acting district administrative secretary; district environmental management officer; acting district planning and land officer; , acting district land development officer. Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 1,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Support to the project:** The district representatives express their support to the project, which they see as serving the interest of the country.
2.	**Concerns and expectations raised by the project:** • Protection of forest reserves and community forests, which are of great importance for the subsistence of local populations; • Fair compensations for lost crops (mainly coffee, maize and beans); • Assistance to affected households: Resettlement is seen as a major issue. Replacement lands will be difficult to find in the district, and people will not easily accept to be moved somewhere else. Cash compensations will not be sufficient. Additional resettlement assistance needs to be provided to the farmers whose remaining plots will not be sufficient to sustain their livelihood; • Recruitment of local workers during construction and maintenance works; • Project contribution to the electrification of the district.
3.	**District's situation in terms of access to electricity:** As per today, less than 15% of the district population has access to electricity. This is because of the underdeveloped distribution network and of the unaffordability of electricity for local populations.
4.	**Forest reserves:** According to district representatives, there are three forest reserves in the district (Ntazu, Longisonti and a third one that could not be named). These forests are managed by the district and are considered to be well preserved.
5.	**Categories of lands likely to be found:** All lands in the district are customary lands. Most farmers (over 80%) have certificates of customary ownership.
6.	**Usual valuation and compensation procedures:** Tanzanian regulation provides for cash compensations only. Lost lands, crops, structures and other assets are compensated for at their "full replacement costs". Full replacement cost includes the value of the land, crops, structure and other assets, as well as accommodation and disturbance allowances. Only

	perennial crops are usually compensated for, as projects usually wait for farmers to harvest seasonal crops before works begin.
7.	**Potential obstacle – proposed trucks loading / unloading area in Iboya:** In the village of Iboya, near Ihanda, there is large area by road A104 that has been reserved for a proposed loading / unloading area for freight trucks. Dimensions for this area are 400 m along the road A104, by 2,5 km inland.
8.	**Role of the District in the ESIA process:** The district representatives wish to be involved in the project development process at two levels: • Communication and sensitization activities with local populations (and require a budget from the project to do so); • Participation of district valuers in the valuation process, and of district representatives in the census / social inventory process.
9.	**Involvement of traditional chiefs:** Chiefs are influential in the district. They should be met at the ward level. They could be met with the Ward Development Committees, which they would attend as invitees.
10.	**Recommended stakeholder engagement approach:** It is recommended for this project to follow the following sequence for stakeholder meetings, in each one of the affected districts: First meet with the Council Management Team (CMT) to present the corridor options and discuss technical issues. CMT is composed by the heads of all departments and services. Technical issues should be worked with the CMT before they are brought to the Council. Second, meet with District Council, composed of wards representatives, to present to chosen corridor and proposed schedule for the community meetings. Wards representatives will then take the message to local chiefs and village chairmen so that, third, the community meetings can be held. Another option is to have meetings at the ward level, with the Ward Development Committees, which integrate village chairmen.

Prepared by: Francis Barbe, March 4rd 2015

TANESCO – MBEYA REGIONAL OFFICE
Date: March 3rd, 2015
Meeting location: Mbeya (TANESCO regional office)
Participants: TANESCO regional office: Regional Manager. Project team: Francis BARBE (WSP); TANESCO
Duration of meeting: 0,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project.

	Summary of discussions:
1.	**Support to the project:** The regional manager stresses that many projects aiming to extend the national power transmission grid in the region are currently underway. For this reason, he sees the Tanzania – Zambia interconnection as a project of strategic importance since it will contribute to secure the power that will be required to feed the newly extended national grid.
2.	**Mbeya – Subwanga transmission line:** The route for this one circuit, 400 kV, transmission line project has already been demarcated. It will leave from Mbeya substation and will run south of road A104. It will cross road A104 at Mlowo and then continue to the north-west. The regional manager expects that the two projects (Subwanga and Tanzania – Zambia interconnection) will run one next to the other from Mbeya to Mlowo and, if possible, share the towers on the joint segment.

Prepared by: Francis Barbe, March 4rd 2015

MBEYA CITY
Date: March , 2015
Meeting location: Mbeya
Participants:
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Administrative organisation:** The city is divided into urban and rural wards. The area that is likely to be affected by the project, the Uyole area, is composed of urban wards. Just like in the districts, wards within the city are administered by ward development committees. At the lowest level are the mitaa committees (or street committees), led by mitaa chairmen. Mitaa chairmen are members of the ward development committees and are the communication link to local populations.
2.	**Key concerns and expectations with regards to the project:** • Fair compensations to affected households; • Involvement of the City in the management of grievances.
3.	**Categories of land likely to be found:** Within the city boundaries, all lands are municipal lands, and there are no customary lands. In the Uyole area, most people have title deeds over their lands, although some do not.
4.	**Land compensations:** Land compensations, in addition to compensations for crops and other assets, need to be paid to affected households with or without tittle deeds. Land compensations can be either in kind (replacement lands) or in cash. There are no compensations or leases to be paid to the City, unless municipal properties are affected.
5.	**Management of grievances during the compensation process:** Recent compensation processes affecting the City (for road development projects) have generated a lot of complaints and grievances from affected households. In many cases, more than one households were claiming the same piece of land, for which no ownership records existed. The same scenario is to be expected for the transmission line. A usual and recommended procedure is to set up a grievance management committee composed of municipal staff and representatives.
6.	**Recommended stakeholder engagement approach:** To reach local populations, it is recommended to have meetings with both ward and village representatives.
7.	**Other information of interest:**

	• **Big farming area south of Uyole:** The big farming area just south east of Uyole is a research center owned by the Ministry of Agriculture, and administered by a local agency located in Mbeya (name could not be remembered). • **Mbeya former airport:** With the new international airport in Songwe, the former airport in Mbeya has been closed. Its future uses are not known. • **Lyunga industrial area:** This area should be avoided by the project. It is located along road A104, on its southern side, between Mbeya and Mbalizi.

Prepared by: Francis Barbe, March 4th 2015

WILDLIFE CONSERVATION SOCIETY (WCS) – Southern Highlands Conservation Programme
Date: March , 3rd 2015
Meeting location: Mbeya (WCS office)
Participants: WCS: assistant director; Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**WCS organisation and activities:** WCS is active in the Mbeya region through its Southern Highlands Conservation Programme. Its activities are concentrated in the Mbeya and Rukwa regions and involve research, capacity building for the management of protected areas, and community awareness.
2.	**Main concerns and expectations associated to the project:** • Protection of protected areas, in particular the Poroto Ridge Forest Reserve; • Prevention of monkey poaching in or near the Poroto Ridge Forest Reserve; • Project contribution to urban/rural electrification (to reduce dependency on charcoal); • Protection of forests: the ROW is likely to facilitate access to some forests which will result in increased pressures on forest resources by local populations (mainly for the collection of firewood); • Potential impacts on bird migratory corridors – could be a significant issue, considering the proximity of the Kitulo national park and should be carefully addressed by the ESIA; • Transparent communications with local populations about the project's objectives and potential impacts.
3.	**Poroto Ridge Forest Reserve:** The protection of this forest reserve is WCS's main concern with regard to this project. Although it has undergone some degradation, this forest reserve is still considered to be a biodiversity hotspot, with a lot of monkeys and endemic species, besides being an important touristic site (crater) and a catchment area for both carbon and water. The reserve is managed by the District. WCS recommends that the line route should remain a good distance from the reserve, and most importantly, should avoid passing between the reserve and nearby villages. This would encourage local populations to enter the reserve and exacerbate the problems with monkey poaching. The project could provide an opportunity for raising awareness of local populations about the conservation of monkeys.
4.	**Alternatives to charcoal:** As of today, very few households in the region have access to electricity, with charcoal being the main source of domestic energy. Charcoal generally comes from the Rukwa region and the project's study area is not a charcoal production

	area. Even if new distribution lines were developed, households will still rely on charcoal as long as electricity is more expensive than charcoal. Low costs alternatives to charcoal need to be developed.
5.	**Transparency on the project's objectives and potential impacts**: Communities should be clearly and honestly informed about the project's objectives and potential impacts and benefits. It should be made clear from the beginning that this is not an electrification programme. Otherwise, the project will raise false expectations (about electrification) and communities may later protest as they realise that the project will not bring them power directly. There is a concern that local politicians might distort the information about the project to their advantage (next year is an election year), which would further contribute to raise false expectations about the project (i.e. by letting people believe that, under their leadership, the project will bring them power).
6.	**Other conservation NGOs likely to have interests in the project**: African Wildlife Foundation (AWF), office in Mbeya; WWF, office in Mbeya; Nyasa Basin organisation (since the rivers of the study area run towards the Nyasa / Malawi lake.
7.	**Other information of interest:** • The **Mpanga / Keperenge game reserve** is managed by the Ministry of Natural Resources - Wildlife department.

Prepared by: Francis Barbe, March 4th 2015

MBEYA DISTRICT
Date: March 3rd , 2015
Meeting location: Mbeya district center
Participants: Mbeya District: acting district executive officer; district land development officer; information officer. Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process; - Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Categories of land likely to be found:** All lands in the district are customary lands. The district does not expect any form of lease or payment to the district for the use of land.
2.	**Preferred axis for the line:** For the segment of the line crossing the district, it seems preferable to have the line on the southern side of road A104, rather than on its northern side. The northern side would present more major obstacles, including the Songwe airport.
3.	**Recommended stakeholder engagement approach:** Meet first with the CMT (Council Management Team), whose members are the district's heads of department, to present and discuss the technical elements (before taking the information to the Council).
4.	**Recommended approach with traditional chiefs:** Chiefs are influential in the district and they need to be informed. They can be reached through the ward development committees. No compensations are to be paid to the chiefs for the use of customary lands.

Prepared by: Francis Barbe, March 4rd 2015

MBEYA REGIONAL COMMISSION
Date: March 3rd, 2015
Meeting location: Mbeya Regional Center
Participants: Regional commission: acting regional administrative secretary. Project team: Francis BARBE (WSP); MMK; TANESCO.
Duration of meeting: 0,5h
Meeting Agenda: - Presentation of the Project and current status of the ESIA process.

	Summary of discussions:
1.	In the absence of the Regional Commissioner, the information was presented to the regional administrative assistant, which will communicate it to the Commissioner. No specific issues were discussed.

Prepared by: Francis Barbe, March 4th 2015

NATIONAL ENVIRONMENTAL MANAGEMENT COUNCIL
Date: March 4th, 2015
Meeting location: NEMC office, Dar Es Saalam
Participants: NEMC: Director EIA; Project team: Francis BARBE (WSP); MMK.
Duration of meeting: 0,5h

	Summary of discussions:
1.	**Project presentation:** The current status of the project and reviewed schedule for the ESIA were presented.
2.	**Registration of WSP:** WSP needs to be registered as an EIA consultant in order to be recognized by NEMC and before going any further in this process. As for now, since WSP is not registered, the request for a consultative meeting is declined. In Tanzania, both national and foreign EIA consultants need to be registered. NEMC brought this to the attention of TANESCO in its comments on the registration form and project brief submitted by WSP in March 2014.
3.	In the future, meeting request letters should be addressed to the General Director, and not the director of the EIA unit. It belongs to the General Director to redirect the letter to the appropriate person.

Prepared by: Francis Barbe, March 4th 2015

LEGAL AND HUMAN RIGHTS CENTER (LHRC)
Date: March 4th, 2015
Meeting location: LHRC office, Dar Es Saalam
Participants: LHRC: Project team: Francis BARBE (WSP); MMK
Duration of meeting: 1h
Meeting Agenda: • Presentation of the Project and ESIA-RAP development process; • Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Human rights issues to consider for this project:** • Corporate social responsibility; • Involvement of local governments (district and village levels); • Transparent and honest communication with communities; • Public security; • Fair compensation and resettlement process; • Building trust into the valuation and compensation process; • Access to jobs for local populations; • Workers' rights; • Environmental management and monitoring.
2.	**Fair compensations:** Compensations need to be calculated using the market value of lost assets, which is usually the case in Tanzania. Payment should occur quickly after valuation, and payment modalities should be transparent. A transparent grievance management procedure needs to be established and recognized/trusted by all parties.
3.	**Transparent communication:** The district counsellors and village chairmen are the key persons to provide with transparent and accurate information about the project, its objectives and potential impacts/benefits. However, as these are politicians, there is a risk that some would distort the information to their own advantages, which could induce false expectations from local populations. To minimize this risk, other communication channels to reach local populations should also be used, such as local radios and banners.
4.	**Building trust into the resettlement process**: To succeed, the resettlement process needs to be recognized and trusted by all parties. Recommendations for building trust are: • Before the valuation process begins, the beneficiaries (affected households) and the promoter (TANESCO) must agree on the chosen valuer(s). That person(s) must be trusted by all parties, otherwise confidence in the whole process will be jeopardized. This usually leads to the involvement of district valuers, sometimes together with a valuer designated by the central government;

	• During the valuation exercise, the valuer(s) should be accompanied in the field by representatives from the civil society, the district authorities and TANESCO; • Before compensations payment, informative meetings should be held to present and explain the compensation and resettlement procedures to the affected households.
5.	**Participatory monitoring of ESMP implementation:** Too often ESMPs are not properly applied, if at all. Informing communities and local authorities on the environmental and social measures that are planned, and involving them in the monitoring of their implementation, is the best way to ensure their materialization.
6.	**Workers' rights:** Main challenges / recommendations: • Fair salaries, working conditions and social benefits; • All workers - permanent and temporary - should have a contract (unfortunately this is not always the case) which should be clear on applicable and non-applicable social benefits (to avoid raising false expectations), on the tasks to be performed (if task-based contract) and on the duration of the contract (for temporary workers); • Where applicable, the participation of trade unions as mediator between the workers and the employer should be facilitated.
7.	**Role of traditional chiefs:** Chiefs are influential on social issues but do not have power over land issues. No negotiation with them over land issues is required.
8.	**Women NGOs:** A starting point to reach out to women NGOs would be the Tanzania Gender Network Programme (TGNP).
9.	**Vulnerable groups:** Usual categories of physically and socially vulnerable groups (elderly, handicaps, orphans, the poor and the women head of households). In remote areas of the country, including the Mbeya Region, many households have been affected by HIV/AIDS, leaving orphans and single-headed households. No marginalized ethnic or religious groups are likely to be found in the project area.
10.	**Interest for further meetings:** LHRC indicates that it appreciates to be included in the stakeholder engagement process for this ESIA study and confirms in interest in participating to upcoming information and consultation rounds.

Prepared by: Francis Barbe, March 5th 2015

MINISTRY OF LANDS, HOUSING AND HUMAN SETTLEMENTS – LANDS DEPARTMENT
Date: March 5th, 2015
Meeting location: Office of Lands department, Dar Es Saalam
Participants: Lands department: Land planning director; Project team: Francis BARBE (WSP); MMK.
Meeting Agenda: • Presentation of the Project and ESIA-RAP development process; • Discussion on concerns and expectations associated to the project and ESIA process.

	Summary of discussions:
1.	**Key concerns and expectations** with regard to the development of the ESIA-RAP studies: • Proper negotiation and consensus reaching with affected landowners; • Additional resettlement assistance to displaced households; • Communication with and involvement of grassroots leaders (including district, ward and village / street representatives). They must understand the process and the issues so that they can inform their populations; • Consideration of districts' urban and land planning documents.
2.	**Eligibility to land compensations:** Affected households with customary rights or granted rights (tittle deeds) are considered landowners and are eligible to land compensations. TANESCO will need to acquire the entire ROW. There is no compensations or leases to be paid to local governments just for the having the line or towers on their territory.
3.	**Recommendations to minimize grievances over compensations:** This type of projects usually generates a lot of complaints and grievances over compensations. • Involve all stakeholders, including landowners, early in the resettlement planning process; • Inform and raise awareness of local authorities on the issues and regulations with regards to compensations and resettlement; • Involve districts valuers in the valuation process. If district valuers are not registered, then have registered valuers to work with them; • The grievance management procedures must be participatory and involve all stakeholders.
4.	**Relevant regulations:** The consultant is invited to consider the following regulations : • Space and Planning Standards, 2010 • Urban Planning Act, no 8, 2007 • Land Use Planning Act, no 6, 2007 • Village Land Act, 1999 • Land Acquisition Act, 1967

Prepared by: Francis Barbe, March 5th 2015

TANESCO HQ
Date: March 6th, 2015
Meeting location: TANESCO Head Quarter office, Dar Es Saalam
Participants: TANESCO: director Environment and Social;rural electrification; project manager; environmental eng. Project team: Francis BARBE (WSP); MMK.
Duration of meeting: 2h
Meeting Agenda: • Presentation of the current status of the ESIA-RAP development process; • Discussion on concerns and expectations with regard to the project and ESIA process.

	Summary of discussions:
1.	**Coordination with the Mbeya – Subwanga transmission line project:** This project involves the construction of a new substation in Mbeya (Uyole area) and a one circuit, 400 kV, transmission line connecting the new substation and Subwanga, in the Rukwa region. The line route for this project has already been demarcated in the field using the optimal corridor received last year (Feb 2014) from the feasability consultant, AECOM (former option 2). The width of the right-of-way that has been demarcated is 100 m so that the corridor can also be shared with the Tanzania – Zambia transmission line (two lines of towers, one double circuit, the other single circuit). The valuation of the lands and assets within the corridor has already been done in the substation area. TANESCO intends to undertake shortly the valuation process for the entire corridor, and the technical consultant, SUECO, is about to initiate the detailed feasibility study. Considering the changes in Zambia, if AECOM has to review the initial corridor options and is likely to come up with a new optimal corridor, than TANESCO needs to be informed urgently.
2.	**Electrification of affected communities:** On this issue, TANESCO representatives inform that the extension of the 33 kV distribution network in the Mbeya region is already planned and will reach most of the communities that are likely to be affected by the transmission line. For this reason, they see no need for the addition of a rural electrification component to the project. Project-affected communities will benefit from TANESCO's policy to offer a free connection to the distribution network in communities that are affected by new developments. Alternative energy sources such as solar panels and others are usually considered for communities in remote areas, which is not the case for this project.
3.	**Annual crops under the transmission line:** TANESCO is increasingly interested in the idea of allowing farmers to grow annual crops within the ROW, mainly because this could help reduce the ever increasing land acquisition costs for the development of new lines. Internal discussions on this idea are currently taking place. However, it is considered unlikely that TANESCO will change its policy of no activities allowed within the ROW in time for this project. Allowing annual crops within the ROW may entail amendments to

	different regulations and therefore will need some time before it materializes.
4.	**Land compensations:** According to current regulations, TANESCO will have to acquire the lands over the whole right-of-way. In the study area, most farmers own the land they work on and therefore will receive land compensations. Although some farmers on customary lands may have customary certificates of ownership, such certificates or tittle deeds are not necessary to be eligible to land compensations. Farmers without any ownership document can also be recognised as customary owners by local governments. There is no difference to be made between customary and urban lands in terms of entitlement to land compensations. The only difference is the market value of lands within urban perimeters, which are much more expensive.
5.	**Compensation for crops:** Only perennial crops are usually compensated for, as projects usually wait for farmers to harvest seasonal crops before works begin. TANESCO agrees that district valuers should be involved in the valuation process to increase its credibility for local governments.
6.	**In kind compensations:** According to TANESCO, the implementation of in kind compensations appears unrealistic for large scale projects such as transmission lines covering hundreds of kilometers. TANESCO does not have the internal resources to manage the logistic and procurement challenges that would involve in kind compensations over such large areas. In kind compensations could however be proposed for the most vulnerable households.
7.	**Compensations for trees:** All tree cuts that are required to clear the ROW will need to be compensated for, both on farm lands and in forested areas. The Tanzania Forest Services Agency is responsible for the valuation of tree losses in forest reserves and other forested areas. Compensations are paid to the Tanzania Forest Services Agency, or to the affected district if tree cuts occur in a district-managed forest reserve. When districts are involved, TANESCO recommends that local governments should be invited to present a project for financing, which should relate to reforestation, conservation or forest management.
8.	**Security and vandalism:** According to TANESCO representatives, the risks of dangerous contact or electrocution for local populations are not an issue for transmission line projects, as people naturally fear to approach these infrastructures. Such risks rather concern the distribution lines. The risks of vandalism and theft of material during and after construction are however important issues to be considered for this project.

Prepared by: Francis Barbe, March 7th 2015

Appendix C

REGISTER OF PARTICIPANTS' SIGNATURES

Tanzania – Zambia Power Interconnection Project

Environmental and Social Impact Assessment

Project update meetings – February 2015

Date	Name / Surname	Fonction / Organization	Contact	Signature
23/02/15		Senior Inspector- EMA		
"		Inspector-(EIA)-ZEMA		
"		Freshwater Team - WWF		
"		" " "		
"		Deputy Director		
"		PRINCIPAL AGRIC SPECIALIST		
24/2/15		P.S. NORTHERN		
24/2/15		CHIEF PLANNER - NORTHERN		
24/2/15		SENIOR TECHNICIAN		
24/2/15		Forestry Officer		
25/2/15		Director NHCC N/Region		
"		NHCC/Northern Region		
"		ACTING TOWN CLERK - KASAMA C		
"		ACTING DIRECTOR PLANNING		
"		Public Relations Officer		
"		Provincial Engineer		

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Tanzania – Zambia Power Interconnection Project

Environmental and Social Impact Assessment

Project update meetings – February 2015

Date	Name / Surname	Fonction / Organization	Contact	Signature
25/02/15		NORTHERN PROVINCE CHAMBER OF COMMERCE AND INDUSTRY		
25/02/15		KASAMA Chamber of Commerce Treasurer		
25/02/15		SECRETARY KASAMA CHAMBER		
25/02/15		Council Secretary / Mungwi		
26-02-15		PROVINCIAL ADMINISTRATION		
26/02/15		" "		
27/02/15		DISTRICT COMMISSIONER MPIKA		
27/02/15		Council SECRETARY		
"		DEPUTY DIRECTOR WORKS		
27/02/15		COMMUNITY DEVELOPMENT OFFICER		
27.02.15		ZESCO LTD NAKONDE		

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Tanzania – Zambia Power Interconnection Project

Environmental and Social Impact Assessment

Project update meetings – March 2015

Date		Name / Surname	Fonction / Organization	Contact	Signature
	1		TUNDUMA: ACTING TOWN EXECUTIVE OFFI		
	2.		TOWN LAND SURVEYOR		
	3		TOWN COMMUNITY DEV. OFFICER		
	4		TOWN PLANNER	yahoo.com	
12/03/15	5		AG DED – MOMBA D		
	6		~~Ag~~ DPLO – MOMBA		
	7		Ag DEMO – MOMBA		
	8.		for DAS – MBOZI	ail.com	
	9		DEMO – MBOZI		
	10		AGDPLO – MBOZI		
	11		DLDO – MBOZI		
	12.		TANESCO MBEYA		
13/03/15	13.		CEMO – MBEYA CC	januarykazoba@yahoo.com	
	14		WCS/SHCP BOX 1475 Mby		
	15		WCS/SHCP BOX 1475 MBY		
	16		ACTING DISTRICT EXECUTIVE OFFICER		

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Tanzania – Zambia Power Interconnection Project

Environmental and Social Impact Assessment

Project update meetings – March 2015

Date	Name / Surname	Fonction / Organization	Contact	Signature
17		~~DLDO - MBEYA D.C~~		
3/03/2015		~~A~~ HABARI " "		
3/03/2015		AG RAS MBEYA		
3/03/15		LHRC - HQ		
-"-		LHRC - HQ		
5/3/15		Ministry of Lands		
5/3/15		ministry of Lands		
6/3/15		TANESCO		
6/3/15		Tanesco H/Q (R. B409)		
6/3/15		TANESCO H/Q		
06/03/15		TANESCO HQ		

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APPENDIX

7-8 *MINUTES ROUND 5*

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

Birdwatch Zambia
Date: September 28, 9:15 a.m.
Meeting location: Birdwatch Zambia Office, Lusaka
Participants: Birdwatch Zambia, Marie-Eve Martin (WSP) and AMC
Duration of the meeting: 45 minutes
Meeting agenda: - Presentation of the Project; - Presentation of the main identified impacts and proposed mitigation measures; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Bird collisions:** Since the project is located in the axis of an important international bird migratory corridor (the West Asia East African Flyway) in Northeastern Zambia, the representative from Birdwatch is concerned about bird collisions and the insufficient number of bird diverters that have been planned in the ESIA. The Birdwatch's representative is concerned that the location selected for the installation of the bird diverters, namely the Bird Sensitive Areas such as floodplains and escarpments, may not be appropriate. Indeed, these locations are where birds rest, rather than where they travel during their migration. According to the Birdwatch's representative, since it is impossible to know exactly where birds will pass through, the safest way to mitigate the negative effects of the transmission line on birds is to install bird diverters along the whole line. Furthermore, she believes that the distance between each bird diverters (10 m) is too wide.
1.2	**Financing of bird diverters:** Over the course of many years, Birdwatch has been discussing with ZESCO about bird collisions. Bird collisions are real in many regions as shown by Birdwatch's surveys (although no survey has been done in the northern part of Zambia). The representative from Birdwatch explained that ZESCO's position with regard to the financing of bird diverters is that the NGO itself should assume their cost. The company will only cover the cost related to the installation of the diverters to their electrical lines. Birdwatch does not agree with this position and believes that it could be less expensive for the company to acquire the diverters (scale economy).
1.3	**Bird nests:** The representative from Birdwatch suggests the installation of reflective tapes on top of pylons. This would prevent birds from nesting on pylons as their nest can cause power outage.
2.	**Recommendations and information given**
2.1	Birdwatch's representative recommends to add the bird migration path on the project maps. Information given :

	- Map of the Kruger bird migration - Map of the West Asia East African Flyway

Prepared by: Marie-Eve Martin, September 2017

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

Chitambo District Meeting
Date: September 25, 11:30 a.m.
Meeting location: Chitambo District
Participants: Ministry of Agriculture; Ministry of Fisheries & Livestock; Chitambo District Council; Ministry of Health, District Health Office; Chitambo District Council; Chitambo District Council; District's office; Agape Village Foundation; Chitambo District Council; Chilembo Davy – Education; Chitambo District Council; Chitambo District Council; District Administration; Chitambo District Council; Chitambo District Council Marie-Eve Martin (WSP); AMC; ZESCO.
Duration of meeting: 1h
Meeting Agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	**Summary of discussions:**
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Purpose of the project:** A participant asked about the purpose of the project and if it would include the export of power. WSP responded that this is an interconnection project, which means that two countries will benefit when in need.
1.2	**Information and communication:** A participant wanted to know about the communication means that will be used to reach people who do not live nearby the city. ZESCO responded that they generally do awareness campaign in close collaboration with the DC. Among other things, the DC helps them to identify local headmen and provide them with information to be disseminated to communities. ZESCO may also use community radios, whenever possible. AMC added that, for this particular project, communities affected by the project are not located in very remote areas; thus, they are easily accessible.
1.2	**Resettlement Action Plan (RAP):**

	A participant questioned the way compensation measures were adopted. He also wondered how the decision to compensate in kind or in cash would be made. ZESCO stated that the compensations need to fulfill the World Bank (WB) requirements. According to the WB recommendations, replacing a house by a new house built is the best option. Other compensation methods will be considered and negotiated upon if People Affected by the Project (PAPs) do not want a new house. Another participant pointed out that there are nine households affected by the project according to preliminary surveys and wanted to know when the resettlement will occur. He also wondered what would happen to the people who established themselves within the project wayleave since preliminary surveys were conducted. ZESCO assured that another full inventory will be conducted prior to setting a cut-off date and prior to the construction. ZESCO also confirmed that the construction would only start once compensations have been given. The cut-off date will be communicated to all affected communities.
1.3	**Benefits from the project:** A participant asked about be benefits brought by the project apart from the jobs. ZESCO stated that the community will be able to tap on the Community Compensation Fund (CCF) in order to answer to local community needs. There will be opportunities for women selling food and getting an income. AMC added that there is also a potential for rural electrification for communities affected. A participant asked if there will be any benefits for local contractors rather than only for foreign contractors. ZESCO assured that local contractors will be involved in the project (supplying sand, stones during construction) which represents another benefit from the project. The Council Secretary is happy that community can tap in the CCF. He recommended to have a new facility for people as a concrete benefit from the project. It would be a good thing to counteract the negative impacts.
1.4	**HIV-AIDS:** A participant wondered if some money will be allocated to HIV-AIDS awareness. The participant believes that a certain percentage should be put aside by the contractors for HIV-AIDS awareness. ZESCO confirmed that there is already a full-fledged team from ZESCO working with the District AIDS task force. AMC added that, because international donors are involved in this project, there will be provision for other NGOs to be involved in the sensitization.
1.5	**Recommendations from the District Councillor:** The District Councillor wanted to make sure that everything promised in project's documents (ESIA, RAP, ESMP) will be implemented and that no one will be left behind. She added that it will be important to compensate the PAPs in order to make a good name for themselves, particularly for ZESCO. She also wanted to make sure that the CCF

	will be implemented and indicated that she will follow up to be sure that everything promised has been implemented.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

Provincial and District Meeting - Kasama
Date: September 19, 9:30 a.m.
Meeting location: District conference room, Kasama
Participants: Senior Engineer, Ministry of Agriculture; DACO, Ministry of Agriculture; PSAO; DCTAO, Ministry of Chiefs; LHO, PACO – Agriculture; Faith Chimfwembe Mulenga – ACDO, Department of Community Development; CDO, Child Affairs; Godfrey Mwansa – Acting District Administrative Officer – Kasama District; PFLCO, MFL; External Assistant – Forestry Department; Mathews Mulenga – Officer, Environmental & Water Quality (WARMA); Hydro-Technician (WARMA); Provincial Health Director; Senior Planner, Ministry of Education; Senior Planner (PPU) Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1.5 h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Cost of the project**: One participant raised a question concerning the share of Tanzania in the total cost of the project compared to that of Zambia. The Consultant answered that the cost of the project would be approximately 100M $US in Tanzania. The cost will be lower in Tanzania due to the difference in the length of the line and the infrastructures needed in each country.
1.2	**Type of line circuits used**: One participant asked the consultant to provide details on the reason for having a double-circuit line in Tanzania rather than a single-circuit line such as in Zambia. He is concerned that two single-circuit lines take more land than a double-circuit line. Also, he was afraid that building two single-circuit lines side by side would result in a wayleave larger than 100 m. The Consultant explained that building two single-circuit lines is generally more reliable, especially in the event of one line collapsing. Furthermore, land uses allowed under the line were reminded to the public, as well as the maximum height of 2 m allowed for crops. The Consultant also reassured the participants that the two wayleaves would not exceed a width of 100 m. A representative from ZESCO added that shortage of power due to pylons

	collapsing was something that people must be protected from. She gave the example of the 60 pylons recently removed in the Northern Region that have to be rebuilt for security reasons.
1.3	**Encroachment in the wayleave:** A participant expressed her concern about people who may want to build houses in the wayleave since some land uses will be allowed in it. She asked if any awareness was planned to address this issue. She also wondered what will happen to families who encroach on the wayleave once the line is built. The Consultant explained that the Environmental and Social Monitoring Program (ESMP) recommends the implementation of an awareness program during the pre-construction, construction and operation phases to inform the population of the permitted uses within the wayleave. This would ensure that the rules are well understood by neighbouring communities. A representative of ZESCO mentioned that during project scoping meetings, local people were provided information on the risks and dangers related to the presence of the line and related structures. The representative also explained that ZESCO has a policy for encroachment. The policy stipulated that once a case of encroachment is reported, a notice will be delivered, asking people to leave within 14 days of the notice receipt date. If the situation is not regularised, lawyers and the police could be involved.
1.4	**Presence of workers:** Generally, meeting participants agreed that the distance of 1 km between the workers' camp and local communities recommended by the Environmental and Social Impact Assessment (ESIA) would not prevent interactions between the workers and the community members. However, according to the participants, there are few mitigation measures that could be implemented in that regard except to promote behavior change through communication and awareness, especially to prevent Sexually Transmitted Infections (STIs) and HIV-AIDS. One participant also suggested that measures be put in place to allow workers to go back to their family every week in order to prevent them from having sexual intercourse with local community members. The Consultant explained that it will be an obligation for the lead contractor to implement awareness actions to address this issue and to impose sanctions to workers when necessary. He also mentioned that the contractor will be supervised by a Supervising Engineer, overseen by ZESCO, to ensure that all the conditions included in the terms of reference be met. However, the Consultant highlighted the fact that some interactions between the workers camp and local community members are desirables, especially to supply food. A participant expressed some reserve about the contractor's willingness to implement an awareness program as not acting on it could be a way of reducing expenses. ZESCO's representative answered that it will be ZESCO's responsibility to ensure that the contractor is taking proper steps to raise awareness among the local community and the workers.
1.5	**Benefits for the countries involved:** A participant asked the following question: Of Tanzania and Zambia, which country will most benefit from this project? The Consultant said that, in terms of infrastructures, the northern region of Zambia will clearly benefit most from the project since there are currently only medium voltage lines in this part of the country. He also stated that there was no winner or loser in this project since both countries will benefit from it and that the project will span over a long period of time.
1.6	**Rural electrification:** A participant mentioned that the people affected by the project

	should be connected to the new line and benefit from its power supply. A representative from ZESCO explained that the project includes a new high voltage transmission line and that people cannot tap to this line as if it was a distribution line. She also mentioned that as part of another mandate, separate from this project, the Rural Electrification Authority (REA) will prioritize the electrification of rural communities affected by this project. The Consultant added that the project is funded by donors who recommend that rural electrification benefits from this project.
1.7	**Risk of power outage due to the interconnection with Tanzania:** In the past, Zambia experienced total electricity blackouts due to the partnering with Zimbabwe as it was recalled by a participant. This participant expressed his concerns about the eventuality of such a power outage with the interconnection project. The Consultant explained that the Nakonde substation will allow the Zambian electricity network to be isolated in case of a problem in the eastern African countries and switch to the local network to provide power supply.
1.8	**Community Compensation Fund (CCF):** One participant asked about the mechanisms put in place to distribute and access the fund. The Consultant answered that, these mechanisms are not completely established since the project is still at a preliminary stage. How the budget will be managed will be decided during the pre-construction phase.
1.9	**Resettlement Action Plan (RAP)**: Questions were raised about the RAP. Some asked further details about the implementation plan, such as which stakeholders would be involved. Others wanted to know which standards would be used for the construction of the new houses. The Consultant explained that the project is still at a very preliminary stage, and that no concrete plan had been made yet. At the RAP implementation phase, approximately one year before the beginning of the construction, various stakeholders will be identified and asked to participate to this phase (a slide showing the types of stakeholders who will be involved was shown during the Power Point presentation). AMC added that the final phase of the RAP implementation will be executed by ZESCO. Concerning the construction of the new houses, the Consultant assured that the construction standards will higher than those used to construct previous houses. ZESCO mentioned that people will be offered to receive the compensation for their displaced houses in cash rather than in kind, as some people may prefer to receive cash. AMC specified that the donors recommend people to choose in kind compensation rather than cash to avoid unfortunate situations where people waste all their compensation money and end up without a house when their house is displaced. As it is planned that houses be upgraded, the Department of Agriculture recommends that the government creates a policy to assist people in the resettlement process in order to ensure that they truly benefit from the resettlement.
2.	**Other comments**
2.1	The Provincial Health Director mentioned that the Zambia-Tanzania Interconnection Line was a good project that is welcome.
2.2	In the closing remarks, the Provincial Planning Unit representative shared her expectations that the people from the Northern Province (Mpika, Kasama, Nakonde) benefit from employment created by this project.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

Community Assembly - Kasama
Date: September 19, 2:20 p.m.
Meeting location: District Department Conference Room, Kasama
Participants: Members of Kasama villages (Lwaluo, Luyeye, Mumba, Chiba, Mulenga) – Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Employment:** A participant interested by the jobs created by the project asked how he could be hired. Another participant wished that local community people will be called when the construction starts. Other people added that everyone attending the meeting should be considered for employments. Someone is concerned that headmen are recruiting only their relatives. A question about the kind of training that is going to be offered was also asked, as well as a question regarding the consequences from drinking on the workplace. The Consultant explained that the construction will only start in three years from today and that there will be no hiring of workers either skilled or not until then. The recruitment process will be very open and transparent. Local people will be given priority depending on jobs available and qualifications required. Workers' skills were surveyed during the preliminary inventory, and the database can be given to the contractor to maximise local employment. A representative of ZESCO stated that the company will inform the local headmen and councillors of the construction start date. This information will also be communicated to the local community people through the chiefs and the community radio. The representative also explained that ZESCO generally works hand in hand with the contractor to avoid corruption related to job recruitment. Trainings will depend on jobs and their requirements, although it will certainly be conducted over a short period of time. Normally, ZESCO has rules on the workplace to follow. The contractor will conduct talks on safety and rules that must be followed. AMC

	added that in most cases, companies encourage people to be sober on the workplace to avoid accidents.
1.2	**HIV-AIDS:** A participant recommended to start the sensitization early on in the project. He asked what measures have been put in place to this effect. He is concerned that awareness will begin only once the construction has started. The Consultant answered that awareness about HIV-AIDS will be ongoing from the pre-construction to the operation phase. He also talked about some measures proposed to reduce the negative effect related to the presence of workers, such as the workers camp being installed 1 km away from the local communities.
1.3	**Resettlement Action Plan:** One participant wondered how long people who bought plots would have to wait before they could build on their land. Another participant asked if people can cultivate even if the construction works will be occurring soon. The Consultant explained that the first step of the RAP will include a detailed survey of all the assets in the wayleave, the valuation of the assets and the compensations. Then, just before the displacement of people, a cut-off date will be established after which people will not be allowed to build on the land. A representative from ZESCO stated that the company needs to avoid crop destructions during the construction works. Thus, the construction will not start before the end of the growing season.
1.4	**Information and communication:** Village members expressed their wish to be informed about the project, especially about its progress and the job recruitment. Someone hope that the project will not be delayed. The Consultant said that there would be some mechanisms implemented to follow-up on the project.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

Mpika District Meeting
Date: September 22, 3:15 p.m.
Meeting location: District Department, Mpika
Participants: Chiefs & Traditional Affairs; Water Development; Arts & Culture; Mpika District Council; Mpkika District Council; Mpika District Town Planner; Senior Building Inspector, Mpika District Council; District AIDS coordinator/advisor; Mpika Town Council; District Administration; Program Coordinator, Drug Enforcement; Education; Social Welfare Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1 hour
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of the main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Technical clarifications:** One participant asked about the difference between the double and single circuit lines. He was wondering if installing one double circuit line instead of two single circuit lines parallel to each other would reduce the width of the wayleave. WSP specified that two single circuit lines is preferable to prevent power outage in the event that one line collapses. Also, single circuit lines are commonly used in Zambia, while double circuit lines are commonly used in Tanzania. Another participant asked why the new line route does not always follow the existing lines. WSP explained that the lines run parallel to each other when technically and environmentally possible. It can also run parallel to other infrastructures already existing. WSP showed on the map the line following the railway between Kassongo and Mpepo. Someone asked what will happen in case of breaking supply between the two countries. A representative from ZESCO mentioned that the Nakonde substation will be modern and will prevent from breaking supply. WSP added that since the Nakonde substation will be an interconnector, it will be possible to shut it down and shift to ZESCO's own system.

	A participant recalled a major power shutdown affecting entirely Zimbabwe while the country was a partner of Zambia. He asked what will happen in case of breaking supply from other countries connected to Zambia's network. ZESCO confirmed that Nakonde substations will allow to isolate Zambia's network in case of power breaking. It will provide the option of isolating the system from other countries.
1.2	**Resettlement Action Plan (RAP):** A participant asked about the location where the people affected by the project (PAPs) will be displaced. He wondered if they would be better off than prior to the resettlement; and if they would be as close to the services as they were before. He also asked if the compensation would be imposed on the local people or if they would have a chance to refuse. Finally, he wondered if the PAPs would have the right to deny the resettlement process. WSP responded that the relocation will occur in a location near their settlement areas. Zambia Environment Management Authority (ZEMA) requires that the resettlement of the PAPs is not to their disadvantage. Their conditions should be improved or restored. The ESIA and the RAP are preliminary documents. The cut-off date has not been set yet. ZESCO will update the inventory before the implementation of the resettlement. The PAPs will be able to negotiate their compensation. A representative from ZESCO added that people have to move away from the selected wayleave for security reasons, but they will have choices during the RAP implementation, there will be negotiations. A participant asked about the type of compensations that will be given for trees. WSP responded that in natural forest, the government will be compensated in cash. For the PAPs, planted trees will compensated in cash and other crops. ZESCO added that the company has also a tree planting program. Participants provided the following general comments with regard to the previous discussion: The compensation process is ok. It is a good thing that the PAPs and community members will be involved in the process. One participant commented that he was not comfortable with the compensation given in cash, he prefers in kind. ZESCO mentioned that independent people will do the evaluation based on rates determined by governmental authorities. ZESCO added that compensation is difficult. It is ZESCO's wish to compensate in houses but some people prefer cash. Though ZESCO does a lot of counselling with the PAPs before the compensation is offered, all the representatives have to agree, i.e. not only men, their wife also. AMC stated that since there is no government policy that states that houses should be compensated in kind, the consultants who support ZESCO in the evaluation process have to follow the negotiation. One participant mentioned that he has not seen any provisions for restocking indigenous trees after they are removed along the line. He is concerned about the potential impacts on climate change. ZESCO assured that they have a reforestation program involving the plantation of trees in different areas of the country, even though not specifically in impacted areas.
1.3	**Grievance redress mechanism:**

	A participant asked additional details on the functioning of the grievance redress mechanism. WSP answered to the questions by showing the slides in the presentation about the grievance redress mechanism. ZESCO answered that the aim of the company is not to create new structures and that they will work with existing structures at the local level.
1.4	**Community Compensation Fund (CCF):** A participant wanted to know more about what will the CCF fund exactly. ZESCO responded that it will depend on the community's needs.
1.5	**Benefits from the project:** A participant mentioned that the project would result in positive changes, especially for people along the line. According to him, there is a possibility for enhanced quality of life for the PAPs, reduced erratic power supply and load shedding through the back and forth of supply chain. And there is also a possibility for industrial development and investments in Mpika because of the power in the district.
1.6	**HIV-AIDS:** A participant asked about HIV-AIDS and the measures that have been put in place to enforce mainstreaming on the workers. A representative from ZESCO said that they have a full-fledged team doing sensitization and involving district's AIDS task force, community development and environmental specialists. Since it is a World Bank project, the requirements will be stronger and there will be a witness NGO that will monitor, such as a local NGO already active in those activities.
1.8	**Employment:** A participant wanted to know if subcontractors were included in the limited number of jobs available. AMC responded that the project is not labour intensive like a mining project. Only few people will be required. One participant commented on the laws and said that for every foreign jobs, 25% should go to local subcontractors. WSP specified that local contractors as well as skilled and unskilled local people will be involved in the project.
2.	**Other information of interest**
2.1	One participant from the Planning Office brought to the attention that according to the map, the line passes through some planned settlement near the planned substation. It has to be taken into consideration according to him. ZESCO's representative took note of this comment and said that they would find out if the people in her team have this information.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

Community Assembly – Chipushi (Mpika District)
Date: September 24, 3:30 p.m.
Meeting location: Chipushi Village, Mpika
Participants: Members from the villages of Chafungwa, Munamala and Chituntama Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 2h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Employment:** Many questions or concerns were mentioned about the hiring criteria, notably about the age limit to work and the physical capabilities needed. ZESCO said that there is no specific age limit and that those who have the ability to work stand a chance to be employed. Community people with skills were recorded during the preliminary survey. This information will be given to the contractors during the hiring process. There will not be any discrimination in the hiring process based on age or physical capabilities. As long as people feel that they are strong enough to work, they can be considered for employment.

	AMC specified that the types of jobs in this project are varied; some jobs will involve strength, others will be easy. People can always find what suits them. Other questions and concerns were related to the hiring process. Some participants feared that corruption, favoritism and discrimination by the contractors would be an obstacle in hiring local people. ZESCO responded that contractors will be required to hire local people so that benefits of the project can remain in the local area. Also, ZESCO representative urges people not to take anything from a potential employer in exchange of a job. One of the mechanism used by ZESCO is to approach chiefs of local communities to obtain names of local people who are reliable and would be willing to work. Then, if there is a complaint about employment from the local people, the Grievance Redress Mechanism can be used. Working conditions and more specifically issues related to the consumption of alcohol, were discussed. One participant asked what will be the consequences of drinking during the working hours and another participant mentioned that drinking outside the working hours should not prevent anyone from being hired. AMC stated that drinking too much will not be a good thing because the work involves machinery. ZESCO added that drinking alcohol during the working hours can be a threat to the worker himself and to others. Community leaders should conduct sensitization about drinking habits and how they can affect local people. Also, community leaders should be fair when submitting names of potential workers and only provide names of reliable people. Some female participants discussed about women participation in employment. One participant appreciates the measure encouraging women to apply and work on the project. She asked that the project help women to participate in employment because men sometimes intimidate them. For instance, men tell them to stay home and look after the children while they go to work. Once these men are employed, they use their salary to buy alcohol and pay other women. However, if the woman get the same job, she uses the money to take care of the children. Another woman asked if the jobs offered are only for men. ZESCO said that there is also a recommendation in the ESIA to assure that both the wife and the husband are called to the discussion during the implementation of compensation. The project will also include some training programs, also available to women, to teach how to accomplish tasks related to employments offered as part of the project. A participant mentioned that if all that was presented at the meeting was done accordingly, the project will really benefit the people. He added that local people are hardworking, honest and that it will be a pleasure to work with them.
1.2	**Resettlement Action Plan (RAP):** A participant asked if the land without crops, such as land in fallow or bare land, will be compensated.

	WSP indicated that there will be land compensation for the land taken for the installation of pylons and crop compensation should there be disturbances of the cultures during the construction. A participant wondered what would happen if someone has papers for the land but does not farm on it. AMC responded that compensation will be done depending on the disturbance of the crops, no matter the title of property. Moreover, ZESCO specified that, prior to the project implementation and the installation of anything on a specific area, ZESCO will ask each land owner for his/her consent. ZESCO does not do the assessment. It is being done by specialized and independent people. A participant mentioned that people should know where the line will pass in order to prevent them from building anything in the planned wayleave. ZESCO responded that at the project implementation stage, a final assessment of the affected assets in order to identify people who built in the wayleave without knowing. AMC added that once the assessment is completed, a cut-off date will be determined and publicised through radio or community meetings to inform everyone.
1.3	**Community Compensation Fund (CCF):** A participant wanted to know when would people be able to apply for the Community Compensation Fund and if they would be able to apply in advance. ZESCO responded that, at this particular stage, they are simply informing people about the project and the CCF. ZESCO representative added that applications could only be made when the project starts. AMC indicated that the fund will be established to help local affected people. Some participants commented about the benefits they see from this project for their community.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

District Meeting - Mungwi
Date: September 20, 10 a.m.
Meeting location: District Department Conference Room, Mungwi
Participants: Secretary Church of God; Pastor's Fellowship; Pastor's Fellowship; Planner, Agriculture DHD; District Chiefs & Traditional Affairs Officer; DWS – Public Infrastructure; Zambia Police, Mungwi; Mungwi Town Council; District Administrative Officer, Mungwi; District Messenger; District Administration Driver; District Administration; Mungwi Red Cross; Coordinator, Caritas & AVAP; Coordinator, Caritas & AVAP; Mulondolwa J. Industry; Old Citizen Mungwi; H. man Kanuma Village; Cross Borders Ass.; Representing Mabula Assembly of Zambia; Senior citizen;Engineering Assistant, Water, Sanitation & Environment; Acting Branch Manager (ZESCO); White Village Headman Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1.5 h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Employment:** A participant recommended that work training for local people should be imposed on the contractor, not just encouraged. WSP assured that his comments would be taken into account. WSP explained that, in the survey's questionnaires, information was collected about both skilled and unskilled workers in communities. This information will be given to ZESCO and will be available to contractors. WSP pointed out that the requirement to hire local workers is included in the ESIA, however, at this stage, the number of local workers hired cannot be revealed as it will depend on the work force and the need.

	Furthermore, ZESCO assured that when they carry out a project, they always encourage contractors to hire local workers in the bidding process through the assistance of headmen and chiefs. Another participant mentioned that a problem they face is the laziness and the drunkenness of youth in the community. Youth need to be encouraged to be sober so they can benefit from the project. A participant asked if the training and jobs offered will be advertised. WSP indicated that the EMSP requires contractors to hire manpower through a transparent process.
1.2	**Institutional Framework:** A participant mentioned that it is important that the project does not leave anybody behind. He was concerned about the civil society being left out of the project. He would have appreciated to see a Gantt chart with the different steps and responsibilities. He stressed the importance of the Community Compensation Fund really benefiting the population. He suggested to form a local community group (organized group of people, NGO) to look after the implementation process of the project and the monitoring aspects. WSP responded that there is a strong recommendation in the report to invite NGOs to monitor the ESIA and the mitigation measures and to act as a neutral witness for ZESCO during the implementation. WSP added that the Grievance redress mechanism will include one member from a witness NGO. WSP showed the RAP implementation schedule to the participants.
1.3	**Resettlement Action Plan (RAP):** A participant mentioned that, according to the documentation provided during the meeting, 25 households will be affected by the project in Mungwi. Then, he asked what will be the magnitude of the impact and which area of Mungwi will be affected. He also wondered if replacement lands had been identified for displacement. WSP specified that 25 households were visited during the preliminary inventory and that People Affected by the Project (PAPs) were aware that a project was on the way. WSP added that replacement lands will be found with the collaboration of the chiefs once the final inventory is completed. AMC indicated that an inventory update will be completed once the project has received its authorization and financing. The cut-off date has not been revealed yet, at this stage it is still preliminary.
1.4	**Community Compensation Fund (CCF):** A representative from the HIV-AIDS District Task Force asked if their organization could tap into the fund. WSP responded that perhaps they may be allowed to, but that nothing has been officially decided yet. There is no limitation as to who can benefit from the fund yet. Organizations will be able to apply.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

Women Focus Group – Mungwi District
Date: September 20, 1:30 p.m.
Meeting location: District Department, Mungwi
Participants: Women from Mungwi villages (Chibaba, James East) – Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1.5 h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Benefits of the project:** A participant was grateful for the project and pointed out the power shortage in the district. She though the project could help reduce this problem, and that even those without power could benefit from the project ZESCO indicated that it is important to understand that people will not be able to tap directly power from the big pylons. The power will have to be reduced to 33kV or 11kV before entering houses. Nevertheless, the rural electrification authority will have the mandate to bring power to people affected by the project in priority as well as schools, clinics and other community places (social amenities). A participant asked what will be the benefits from the project. ZESCO responded that jobs will be available to local communities as well as a Community Compensation Fund.
1.2	**Presence of workers:** A participant recommended that local workers come from their home because once on the camp, their girlfriends may visit them and, at the same time, bring other women along. She said that this would encourage new relationships between local women and foreign workers. Thus, she recommends that engineers stay alone at the camp. She added that women selling food within the camp should be identified by local headmen in order to control who enters the camp. These women should also go for HIV Voluntary

	Counseling and Testing (VCT) to know their HIV status. Nobody else should be allowed to sale goods within the worker camp to limit the influx of people.
1.3	**Safety:** A participant stressed the need for sensitization in Mungwi District to prevent accidents especially involving children because it will be the first time that huge pylons are installed in the district. She recommended to extend the awareness campaign to the entire district. ZESCO specified that the company will do ongoing awareness during pre-construction, construction and operation phases. Pylons will have danger signs to prevent people from climbing. If people are found vandalizing the pylons they will be imprisoned for 25 years.
1.4	**Employment:** One of the participants shared her concern about contractors' nepotism and corruption especially during employment processes. ZESCO mentioned that, ZESCO collaborates with village headmen and chiefs and hope that there will be impartiality in the selection of workers. The councillor stated that there are youth in Mungwi who have skills and recommended that they be considered for employments. She explained that the different wards in Mungwi have a database of skilled people and requested that at least 70 % of jobs be given to the local people. ZESCO responded that only specialized labor will be hired from outside the district. It is a requirement in the bidding documents that local people be given priority in the employment.
2.	**Closing remarks**
2.1	The councillor thanked the women for attending the focus group and encouraged them to carry the message forward to others. She mentioned that such meeting is important as women need to be informed. She recommended that representatives from ZESCO inform people well in advance of the holding of such a meeting. Concerning the HIV-AIDS, she recommended the implementation of measures to allow wives to visit their husband in the camp in order to control the influx of women in the camp. She explained that if men know that their wife will be visiting them over the week end, they will behave themselves. She hopes the project will succeed and procure benefits to the people.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

Nakonde District Meeting
Date: September 20, 3:30 p.m.
Meeting location: District Department, Nakonde
Participants: Nakonde One Stop Centre; North Star Alliance; Zambia Agency for Persons with Disabilities; Nakonde Town Council; Ministry of Works & Supply; Nakonde Twon Council; Nakonde Cnetral; Nakonde Cnetral; District Administration; Nakonde Area;Nakonde Area; ZANIS; Nakonde District Council; National Assembly of Zambia; Area Manager Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC, ZESCO
Duration of meeting: 1 hour
Meeting Agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Project Description**
1.1	**Technical clarifications:** A participant asked if both countries (Zambia and Tanzania) would have control points (control of power supply). A representative from WSP responded that yes, and this is why there is a substation in Nakonde and Mbeya. Another participant wanted to know the reason why the types of pylons that have been selected for Tanzania are different from those that will be installed in Zambia. WSP pointed out that utilities use different types of pylons in their country.
1.2	**Employment:** A participant questioned whether local people would be considered for employment, for example to clear the wayleave. A representation from WSP assured that the ESMP recommends that local people be involved and employed, notably for clearing the wayleave. Another participant asked to know which mechanisms would be implemented to favor the employment of local people and ensure that villagers will be informed of employment opportunities. ZESCO's representative responded that the company generally consults villages' headmen who recommended reliable local workers.

	Furthermore, mitigation measures are presented in the ESIA to ensure that local employment is favored, and especially among people affected by the project. A participant asked if workers from Tanzania could work on the project. He was concerned about conflicts that could arise between workers since Tanzanian workers get different wages than Zambians, a problematic situation that occurred during the Tazara road construction WSP specified that this situation would most likely not occur during this particular project because each utilities will manage its part of the construction in their respective country.
1.3	**Resettlement Action Plan (RAP):** Someone wanted to know who will be in charge of finding a land to people once they have been displaced. Would they have to find a land by themselves? WSP explained that, before anyone is displaced, the inventory of the people affected by the project must be completed. Only then, the total number of people to be displaced will be known. A local stakeholder will assist each of them in finding a new land.
1.4	**HIV-AIDS:** A participant asked what percentage of the project's budget will be dedicated to HIV-AIDS awareness activities in the district. The participant explained that the district's AIDS Task Force imposes a quota to contractors who must set aside a percentage of total cost of their projects for AIDS awareness. He also added that the district's AIDS Task Force should be mandated to conduct awareness activities in the district. ZESCO assured that they will involve local organization in the HIV-AIDS awareness. A participant brought to the attention that the construction of a road in Mungwi resulted in unwanted pregnancies, children of mixed colors, and the spread of HIV-AIDS. Thus, he wanted to know what precautions will be adopted to avoid such unfortunate situations. He suggested that workers be able to go back and forth from their house to the work site. WSP responded that it will not be possible to completely prevent interactions between local people and workers. For example, it is recommended that contractors obtain food from local communities. Yet, as many measures as possible have been recommended to minimize the impact of this interaction and to maximise local employment. Additionally, it may not be feasible for workers to overnight at their house in certain location as the workers' camp will be located far from the community. A participant asked who will be responsible for the awareness concerning Sexually Transmitted Infections (STIs), gender based violence and HIV-AIDS? WSP explained that concerning workers on the camp, the contractor will be responsible for the awareness campaign; in turn, he will be supervised by a supervising engineer. ZESCO will also be involved in awareness activities. Finally, someone was concerned about the way ZESCO would conduct awareness activities since they are not trained in these issues.

	The representative of the company replied that in collaboration with community development representatives, ZESCO will identify NGOs and medical doctors to engage them in awareness activities.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

Village Assembly – Chitamba, Nakonde District
Date: September 21, 11:00 am
Meeting location: Village of Chitamba, Nakonde
Participants: Members from the village of Chitaba (Nakonde District) Philippe Alary Paquette (WSP); Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1.5 h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Overview:**
1.1	Even if invitations had been sent and received by the district administrative officer, the letters were not distributed to stakeholders, including headmen of the villages. A prompt meeting was organized in Chitamba with the collaboration of the headman who wished that he was aware of the meeting and emphasized that communication should be done in advance in order that all the people affected could attend. He deplored that there was no proper communication between ZESCO, the consultants and the affected people. People from his village have many questions and were really anxious about the compensations and they didn't know where to get to information. WSP explained that due to a mistake, invitation letters were not distributed. Since there are two transmission line projects in parallel in the region, distinctions are important to make. One project already started and the other project is not implemented yet. We are 3 years ahead the construction period for the second project. For this project, communication has started way before the project implementation and that's to the

	people to not be confused between the two projects.
2.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP (men)**
2.1	**Rural electrification:** Village men asked whether the rural electrification component of the project would allow to provide electricity to houses in the village. The Consultant explained that the rural electrification project aimed at making electrification available to communities that currently do not have the opportunity to connect. In the case of Chitamba, electricity distribution lines already pass in the community and would allow connection of some community structures such as schools.
2.2	**Sexual abuse:** Village men were worried that young, poor female members of the community might be vulnerable to sexual abuse during the construction phase due to the presence of construction workers with higher earnings. They requested that: • An emphasis be put on raising awareness of workers about HIV/Aids, STDs, sexual abuse, child abuse and related issues; • A code of conduct be imposed on the workers, including sanctions; • That hiring of local workers be favored, especially for bigger worker camps that are not likely to change places: they return to their homes and families at night, therefore minimizing the amount of workers likely to commit reprehensible acts.
2.3	**Women hiring**: Village men requested that some jobs be reserved for women of the community.
2.4	**Work conditions during construction:** Some questions were asked by village men relating to conditions of employment during construction work. While it was made clear that the details of those conditions would be set by the contractor, questions were related to working hours and availability of food during the work day.
2.5	**Standard of replacement houses:** Village men asked more details regarding models of replacement houses to be built. The Consultant explained that replacement houses would all be of good standard.
3.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP (women)**
3.1	**Benefits of the project**: A participant mentioned the project is good for the business it can bring as well as progress (from the improvement of income and the well-being of the people).
3.2	**Employment:** Women need to be considered in the hiring process as it was recommended by a participant. WSP mentioned that the studies (ESIA, ESMP) include a recommendation for the contractors to employ women and give them the same wage than men. The measures about equal employment are appreciated by the participants. One of them added that considerations should also be given to unskilled people. They can easily learn. Even older women, if they are willing and have the capability to work, they should be involved. Some women are able to do some work, so they need to be considered. WSP assured that there would also be indirect and more informal jobs such as selling

	food where unskilled people will be able to find opportunities. A participant pointed out the potential corruption in the hiring process (some employers may want to be given money before they offer the jobs). WSP presented the main components of the grievance redress mechanism which will be created to address these kinds of situations. A suggestion was made by the participants to advertise the hiring process on the radio and do the job recruitment in the village rather than asking people to go to the district (two main obstacles: transport, high offices intimidation related). They feel that if the process is only done at the district level they would not be considered.
3.3	**Presence of workers:** according to a participant, workers at the camp cannot be blamed for their relationships with local women. Poor morals from the women can cause them to engage in such activities. Some women are careless about themselves.
3.4	**Resettlement Action Plan**: Participants appreciated that the compensation process was clear and the house in-kind measure. When compared to the road construction, where they were forced to move, they feel this process is better. They are find with the measure of growing low raising crops under the line. A participant raised the issue of tension among the community members created by jealousy from the non-compensated households towards the compensated households. She suggested to have a village meeting where all things are transparent about the compensation process explained not only to PAPs but all village members to prevent tensions and jealousy.
4.	**Other information of interest**
4.1	A comment was made by participants about their wish that the project starts with them at the Nakonde substation. They want to be the first to be compensated. WSP highlighted that at this stage of the project, it was hard to know where the construction will start.

Prepared by: Philippe Alary Paquette, Marie-Eve Martin and Mwale Mumba, September 2017

Village Assembly – Pensulo Market, Chitambo District
Date: September 26, 9:30 a.m.
Meeting location: Pensulo Market
Participants: Members of Chitambo District villages (Mukando Turn off, Mulaushi, Chankalamo, Katonga, Chitambo) – L Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 1h
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance redress mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	Summary of discussions:
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Resettlement Action Plan (RAP):** Will compensation in cash be considered for displaced houses? ZESCO: In some projects some people insists they get money for a house but it is recommended by the World Bank that another house is given instead of money. AMC: It is recommended to give houses to prevent some people to waste money on something else than a house.
1.2	**Project description:** Is the power going from Nakonde to Pensulo going to be different from the kind of power there is already at the Pensulo substation? ZESCO: the company is expanding the power transmission lines in the northern region of the country. AMC: the interconnection has also the other purpose to allow the two countries to either export or import when they have surplus.
1.3	**Rural electrification:** Will it cost them the same amount for power with the new line or will it be reduced? ZESCO: no measures such as this has been included for now.
1.4	**Employment:** A participant wanted a job and wanted to know how much the salary will be. ZESCO: Government have salary rate for different qualifications and type of jobs. People should not have to bribe anyone to get a job. AMC: The employment system will be transparent, following the World Bank standards.
1.5	**Involvement of local authorities in the implementation of the project:** One of the community leader mentioned there is a need for community leaders to be kept informed about the project. She recommended that community leaders should be given an opportunity to oversee the employment process. ZESCO: the company normally involve village committees and local authorities when implementing projects, so they use the structures in place to disseminate information.
1.6	**Gender issues:** A woman asked what the measure for gender balance in the project was. ZESCO: equal opportunities for both men and women. A comment was made by the participants concerning the hiring of women rather than men because women take care of their families, men don't (they use it for drinking out).
	Community Compensation Fund (CCF): How the CCF is going to work? CCF represents 1% of the total cost of the project. Its attribution will depend on the

	community needs.

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

MEETING MINUTES
TANZANIA-ZAMBIA INTERCONNECTION LINE
Draft ESIA and RAP Presentation

Serenje District Meeting
Date: September 25, 2:30 p.m.
Meeting location: Serenje DAO's office
Participants: Water Coordinator; Joft Tembo – Town Planner; Assistant Director of the Planning Office (ADPO); District Administrative Officer (DAO) Marie-Eve Martin (WSP); AMC; ZESCO
Duration of the meeting: 45 minutes
Meeting agenda: - Presentation of the Project; - Presentation of RAP, ESMP and Project implementation timeline; - Presentation of main identified impacts and proposed mitigation measures; - Proposed Grievance Redress Mechanism; - Planned ulterior stakeholder engagement; - Q&A

No.	**Summary of discussions:**
1.	**Issues, concerns and expectations with regard to the project, the ESIA and the RAP**
1.1	**Benefits from the project:** The DAO insisted that the interconnection project is welcome in the district, especially the rural electrification component, since it represents an important need in the district. Many public institutions, schools and rural centers of the district do not have access to electrical power although several power lines pass through the district. There is also a need for electrical power from the farm blocks. The interconnection project will bring potential for development for a number of industries to come in the district. In general, positive impacts will outweigh the negative ones. ZESCO's representative added that it was important for the company to improve power supply in the northern part of the country.
1.2	**Access to electricity:** The ADPO asked if the project includes a component such as a deliberate policy to make power more affordable to rural communities. ZESCO's representative answered that no specific policy was planned in the context of the project. The Rural Electrification Authority (REA) is mandated to provide power to rural communities affected by the project.
1.3	**Tree compensations**: Mr. Tembo asked if the project includes any measures to compensate trees that will be removed from the forest reserve. ZESCO's representative answered that according to their actual policy, in forest reserve, the trees that are removed are directly compensated to the government of Zambia.
1.4	**Compliance with commitments:** The ADPO insisted that promises stated in the ESIA must be implemented if the project goes through.

2.	**Other information of interest**
2.1	There is a dispute over the territory's boundaries between the districts of Serenje and Chitambo, which leads to confusion in the number of households affected by the project in one or the other district.
2.2	Many questions were addressed to ZESCO's representative regarding the company's actual operations (power voltage fluctuations, Luwambo farm blocks and insufficient workforce at ZESCO to manage complaints, mostly from the farmers).

Prepared by: Marie-Eve Martin and Mwale Mumba, September 2017

APPENDIX

7-9 *MINUTES ROUND 6*

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Forest Reserves	**DATE:**	September 5, 2019
VENUE:	Forestry Department National Offices, Lusaka	**TIME:**	9:30 to 10:30

ATTENDEES	
Name	**Corporation**
Philippe Alary-Paquette	WSP – Team Leader
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Chief Extension Officer - HQ -National Forestry Department

ITEMS DISCUSSED	**ACTION BY**	
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter.	N/A	
2 PASSAGE WITHIN FOREST RESERVES • The line under study passes within five different forest reserves: Kanona, Nkole Mfume, Kasama, Mungwi and Chitmukulu FR, and near the Chief Mpepo FR. • The ESIA will include a characterization of habitats and vegetation in the FR, within the ROW. A walkover survey of FRs is planned in the next week. • WSP inquires on what are the specific management measures for the passage in these FRs and if the Forestry Department has any recommendations. • Mr. Sangulube specifies it is required to conduct forest assessments before construction, to evaluate the volume of timber to be cut.	N/A	

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ITEMS DISCUSSED	ACTION BY	
• The project proponent must then pay for the amount cut by paying allowances to the Forestry Department. • To have an adequate assessment, it must be done right before the project implementation. If done too soon, the assessment will be inaccurate as the trees will have grown. • The ZEMA approval process, through submission of an ESIA, is a separate process. • The money goes to the Forestry Department and it can be assumed that some of the amount will serve to replace the trees that have been lost.		
3 FORESTRY RESERVE MANAGEMENT PLANS • Many FRs do not have management plans or the management plans are out of date. • The information on management of Forest Reserves is available at the Provincial and District levels of the Forestry Department. • There might be certain provincial or district management plans. • In the case of Nkole Mfume, a large part of the FR consists of plantations of exotic species.	N/A	
4 SPECIAL STATUS FOREST SPECIES • There are no protected species by law, but some species are of high value. • Invasive species would not be a critical issue.	N/A	

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project ESIA	**DATE:**	September 6, 2019
VENUE:	Wildlife and Environmental Conservation Society of Zambia Offices, Lusaka	**TIME:**	15:30 to 16:30

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Executive Director, Wildlife and Environmental Conservation Society of Zambia
	ZESCO, Environmentalist

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter. • WSP also has the mandate to produce a Biodiversity Management and Monitoring Plan.	N/A
2 WILDLIFE AND ENVRIONMENTAL CONSERVATION SOCIETY (WECS) PRESENTATION • WECS is an NGO that works on all kinds of environmental issues. Work includes the review of the National Biodiversity Action Plan for the government. • WECS also works on different plantation projects in many areas and is promoting the use of “cocoons”, which are degradable cardboard boxes you fill with water that surround the young plants. Has a 95% success rate. • Other projects also include removal of invasive species within the Kafue National Park.	

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ITEMS DISCUSSED	ACTION BY
3 ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES • According to WECS and considering the number of projects being developed, a Strategic Environmental Impact Assessment (SEIA) would give more insight on the habitats that are being affected and allow to better inform and consult affected people. • However, the timeframe for projects often doesn't allow for SEIA. • WECS recommends leaving as many trees as possible inside the ROW. • P.M. from ZESCO indicates that the ROW is cleared for security clearance with the electric lines and that certain access roads need to be left for emergencies. • WECS specifies that the value of trees for carbon capture should also be considered when assessing impacts. Especially considering that vegetation cover in Zambia has already been significantly reduced in the past. • The project could compensate for carbon emissions and losses due to the project. • Reforestation should be done with local species, for example Miombo habitat species. • WECS notes that ZESCO should take part in conservation projects as an organization. ZESCO already participates in routine tree planting, as part of a social corporate responsibility.	N/A
4 SENSITIVE AREAS • The Kasanka NP is a sensitive well-preserved site near the study area. • People from Serenje to Mpika highly rely on natural resources. • Special caterpillars are harvested from the Miombo habitat and people in the area eat them. They come from three types of butterflies. • People also harvest mushrooms for income, which could be present in affected habitats. • Regarding species present in the area, UNZA Biodiversity Department may have additional biodiversity studies and reports from the area. Mr. Shawa will share contacts so that WSP can ask them to share information. • Game management areas and protected areas can also be sources of information on species within the protected areas.	WECS to share contact at UNZA Biodiversity Department
5 STAKEHOLDER ENGAGEMENT • Chiefs need to be approached before project implementation to inform them on the project. • They can have information on natural habitats and resources. • For example, a project in Machinga aiming at protecting water resources by sustaining livelihoods with beekeeping was a success because of chiefs' implication. The people pay attention to what chiefs recommend regarding implementation. • It's important to share information on security issues related to seared powerlines.	

ITEMS DISCUSSED	ACTION BY
6 BIODIVERSTY MANAGEMENT AND MONITORING PLAN • WSP will be preparing a BMMP for the project, in parallel to the ESIA. • WECS will be re-contacted to present BMMP results.	WSP to contact WECS

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Kanona Forest Reserve	**DATE:**	September 9, 2019
VENUE:	Serenje District- Forestry Department, Serenje.	**TIME:**	8:30 to 10:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Technician - Forestry Department
	Forestry Ranger
	General Worker - Forestry Department
	DFO - Serenje Forestry Department
	Forestry (TFE)
	Forestry (TFE)
	Technician – Forestry Department
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	SAPP
	ZESCO

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter.	N/A

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ITEMS DISCUSSED	ACTION BY
2 PASSAGE WITHIN FOREST RESERVES • The line under study passes within the Kanona FR, which is in the Serenje District and the Chitambo District. • About 5.5 km are in the Serenje District and 17 km are in the Chitambo District. • The management plan for the FR is out of date. • The Forestry Department notes that even if most parts of the line are within the Chitambo District, the two Forestry Department offices work together as a team for project implementation. • The line within the FR is planned to be implemented next to the existing line. The existing line has a 50 m ROW and the addition of the new line would add 35 m to the ROW, for a total of 85 m. • The Forestry Department in Serenje sees this new project as an extension of the existing line. • It also notes the forest cover that will be lost has value in terms of biodiversity and timber. The ESIA should allow to evaluate the % of cover to be lost. • WSP mentions that a walkover survey of habitats within the FR is being carried out to determine the habitats in areas to be cleared and the quality of these habitats. • FD mentions that ZESCO and consultants should always engage with the District FD before going inside the FR and doing surveys. • By law, there is a provision for the passage of a wayleave for transmission projects within the FR. The FR is not degazetted in the case of a wayleave. It is only stated as a change of use. • The Office responsible for the Forestry Assessment, before project construction, is at the district level. Before implementation, the trees to be cut will need to be assessed. There is an amount to pay for the loss of trees. • Annual payments are also required for the line passage in the FR, although it hasn't been the practice for several years, notably by ZESCO. According to Mr. Chibuye this is in the Forest Act, as well as in the quotation. • ZESCO will further contact the Forestry Department on annual rates, to come to an understanding on this general compliance issue.	N/A
3 ADDITIONNAL MITIGATION MEASURES • Serenje FD recommends the ESIA clarifies what is done with the trees once they are cut. • They could be left to the community after the cutting. • The Serenje FD is currently working in new areas for reforestation. Plantations are being done in degraded areas. • Trees cut for the project could be compensated through plantations in other areas. ZESCO could complement reforestation efforts made by the FD. The FD can do the reforestation on behalf of ZESCO. • The payment following the Forest Assessment is mandatory, but the complementary reforestation would be of good social corporate responsibility.	

ITEMS DISCUSSED	ACTION BY
4 RESETTLEMENT IN THE FOREST RESERVES • Consultation meetings should be held with the communities illegally settled in the FR.	

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project impacts on biodiversity	**DATE:**	September 9, 2019
VENUE:	Kasanka National Park - Wasa Headquarters	**TIME:**	13:00 to 14:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Kansaka Trust
	Kansaka Trust - General Manager
	AECS - Consultant
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	SAPP
	AECS – Ecologist Expert

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter. • WSP also has the mandate to produce a Biodiversity Management and Monitoring Plan.	N/A

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ITEMS DISCUSSED		ACTION BY
2	**LAVUSHI MANDA NATIONAL PARK** • The line under study passes near Lavushi Manda National Park. A deviation was proposed to avoid encroaching on the eastern tip of the park, where there are existing powerlines. • Communities within the LM NP boundaries were relocated about a year ago. The eastern part of the park has largely been converted to an agricultural area and is now recovering. • If the ZTIP line follows the existing lines, as planned at some point during the project development, it would add a 35 m encroachment to the 50 m already encroached. • The existing line would be at the limit of the park. • Kasanka Trust mentions it might be better to follow the existing lines and take the same line route, as it would diminish the total footprint of the new line. • Kasanka Trust managed the LV NP in the past but has transferred it back to the DNPW. It's planned management will soon be transferred to Africa Parks, when funding for park management is confirmed by World Bank.	N/A
3	**COMMUNITY FOREST PROJECT** • The Kasanka Park is working on a Community Forest Project to create a buffer zone east of the park. • The park limit in that area is the river, in fact, the animals use both sides of the river, not only the side inside the park. • Geraldine has sent the initial project ToRs to WSP. The objective is to help the community protect the forest by creating livelihood with the exploitation of beehives. • The new line would not touch the areas targeted for the Community Forest Project, as it is west of the settlements which are found on both sides of the existing lines.	N/A
4	**BAT MIGRATION** • Bats can travel some 60 km out of the Kasanka National Park to feed. • Geraldine has sent some published reports on the Kasanka bat migration. • Teage O'Mara would be the expert to contact to get more info on the migration routes. His details were shared with WSP. • Also, Helen Tailor Board is currently carrying out a study on bats in the area and their use of agricultural areas. Aside from the migrating fruit bats, there are 27 species of bats in the area. Geraldine will share contact. • The bats arrive in Kasanka in mid-October and come from Equatorial Africa aggregating to feed from October to January in that area. • There are also other aggregations in Kasama (near the Thorn Tree Lodge, and Angola. • They migrate daily for feeding. Southeastern movements at the beginning of the season and then more to the west towards January. • The main impact of the line would be the loss of certain feeding grounds. Kasanka recommends carrying out habitat surveys within the ROW to see the presence of fruit trees used by the bats (Masuko, Wapuka) and assessing habitats for feeding.	N/A

ITEMS DISCUSSED	ACTION BY
5 BIRD MIGRATION • Waterbirds are monitored in the park every year. • Frank Williams is a bird specialist in Zambia, who used to work in Kasanka. He would probably have interesting data on bird migration routes.	N/A
6 LARGE MAMMAL MOVEMENTS • There are very little large mammal movements in the area. • Lions would travel from January to February from Lavushi Manda, passing through Mutinondo to the NP on the other side. • COMACO presently has a project in this area to promote small scale agriculture as an alternative to poaching. The project is in the Lavushi Manda, Mutinondo, NP corridor. • Jason Sakala is the project leader and could provide more information and mapping of this area. Geraldine will transfer contact details. • The project of creating a new GMA area (Mpumba) in the area was abandoned due to too many settlements and to large scale farming in the area.	N/A

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project – National Parks (NP) and fauna	**DATE:**	September 10, 2019
VENUE:	Mpika Department of National Parks and Wildlife-Mpika Office	**TIME:**	8:00 to 9:30

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Mpika office - DNPW
	Mpika office - DNPW
	Mpika office - DNPW
	AECS - Consultant
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	SAPP
	AECS – Ecologist Expert

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter.	N/A

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ITEMS DISCUSSED	ACTION BY
2 LAVUSHI MANDA NATIONAL PARK • The line under study passes near the Lavushi Manda National Park. A deviation was proposed to avoid encroaching on the eastern tip of the park, where the existing powerlines are found. • If the ZITP line follows the existing lines, as planned at some point during the project development, it would add a 35 m encroachment to the 50 m already encroached. • DPNW mentions that a 4 km buffer area around the NP would be required. However, for national utilities such as a powerline, is it recommended to simply avoid the NP. • There is no natural boundary to the park (such as a river), and no structure indicating the boundary on site. • Pegging usually indicates the park limits, but in LM NP, it was done years ago and is no longer visible/there. A new pegging exercise was planned but never took place. • Over the years, people have encroached the park, while vegetation and fauna have depleted. • In 2016 and 2017, people were removed from the LM NP. • The presence of a powerline could encourage people to move back in the NP. • The LM NP management will soon be taken over by African Parks. Funding is to come from World Bank for wildlife protection and to restock the park. • Recently, some 190 buffalo and zebras were translocated in the Bangoro GMA, near LM NP.	N/A
3 MPUMBA GAME MANAGEMENT AREA • The Mpumba Chiefdom wanted their own GMA, and negotiations have taken place in the past. • The project did not come to term because there are large titled farming blocks in the area. • The Mpumba were included in the Munyamadzi GMA Game Management Plan, part of the GMA being in the Mpumba Chiefdom. They can create their own hunting block within the GMA. It will be in the Kaminendo area, deep in the valley. • The conditions to be part of the GMA were to reduce poaching and acquire a safari outfit.	
4 LARGE MAMMAL MOVEMENTS • There is a corridor between the Munyamadzi GMA and the LM NP, and between Mangozi and Bangweulu. • Buffalo, elephants and lions would move east to west in May, June, and July. • They would go by the Mazingo farm (danger hill) and then to the Bangweulu area. • In September they go back west.	

ITEMS DISCUSSED	ACTION BY
5 BIRDS AND OTHER FAUNA IN THE AREA • Bangweulu has more than 300 species of birds. • There are no available reports on fauna, only sensitive internal reports. • There is a South African student doing research on fauna in the area who would maybe have more information, Mr. Chisaka Jonathan Park.	
6 RECOMMENDED MITIGATION MEASURES • Important to involve the scouts during construction work near the LM NP. There might be dangerous animals. • Important to consult with the traditional leaders in the area and have them on board, notably Chief Mpumba and Chicouanda. • WSP should send a soft copy of the maps so that DNPW Mpika can take a closer look into the project.	WSP to send soft copy of maps to the DNPW.

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project – National Parks (NP) and fauna	**DATE:**	September 10, 2019
VENUE:	Mpika District Forestry Department Offices, Mpika	**TIME:**	11:00 to 11:30

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	AECS - Consultant
	ZESCO
	ZESCO
	Forestry Department - MPIKA

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter.	N/A
2 CHIEF MPEKO FOREST RESERVE • The line under study passes near the Chief Mpeko FR, more than 1 km away from the FR boundary. • The CM FR is in the new Kanchibya District; however, it is still managed by the Mpika office since there is no Forestry Department office in that district. • FD mentions that a 50 m buffer zone is recommended from forest reserves. • The boundary of the FR is described in attachment to Forest Act 7, of 1999. WSP should refer to that. • The CM FR is protected area number P4-18 and was gazetted in 1979. • The management plan for the FR is out of date.	N/A

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ITEMS DISCUSSED	ACTION BY
• The FR covers an area of 348.2 km^2. • Management actions include early burning activities. • There is no recent survey of the FR. • It is severely encroached by population. • Species present are common species of the Miombo woodlands.	
3 RECOMMENDED MITIGATION MEASURES • Sensitize people to forest preservation. • Compensation projects for lost trees should be carried out, such as financing nurseries and tree planting. • Mpika FD considers it a project of national interest, but that some compensation would be good. The forest is an important supply of resources for the communities and there is increasing pressure on forests in the area. • The FD's role is not just to protect the forests within the FR, but within the whole district. • ZESCO mentions common practice is to compensate for tree loss only in forest reserves. Tree planting activities are sometimes carried out not specifically to projects, but more for social corporate responsibility.	

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Northern Province Forest Reserves	**DATE:**	September 12, 2019
VENUE:	Northern Province - Forestry Department, Kasama.	**TIME:**	10:00 to 11:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Forest Research - AECS
	Provincial Forestry Official – Northern Province
	Kasama District Officer - Forestry Department
	ZESCO
	ZESCO
	ZESCO
	SAPP
	ZESCO

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter. • The wayleave will be 50 m for the Kasama-Nakonde line (ICBC) and an added 35 m for the ZTIP, which is standard practice.	N/A

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ITEMS DISCUSSED		ACTION BY
2	**NORTHERN PROVINCE FORESTRY DEPARMENT** • There are 12 districts within the Northern Province and each one has a Forestry Department district office. • No Forest Management Plans have been developed since 1995. Hence, they are all out of date for every FR. • Management measures exist but they are not on paper or in reports. • The provincial Forestry Department is waiting for funds for certain management activities, such as boundary clearing and route maintenance.	N/A
3	**KASAMA FOREST RESERVE** • There are 1086 ha of forest reserves in Kasama. • The boundaries are described in the Forestry Act. Some clearing was done in the Kasama forest reserve in 2015. • The northern part of the FR was removed, north of the railway. • The southern boundary goes down to the road. • A hard copy of the mapping was presented to WSP. • The Mwela Rock Art site is the whole eastern part of the Kasama FR. • There are many illegal settlements within the Forest Reserve. • People extract sand in the area and some houses are present within the FR.	N/A
4	**IMPACTS OF THE POWERLINE** • Fragmentation is one of the main impacts on the FR. The Forestry Department assumes that ZESCO has studied alternatives to reduce fragmentation and to avoid the Forest Reserves as much as possible. • Constructing the line on the edge of the FR may result in small portions of the FR being eventually lost over time due to land use in adjacent land parcels (nibbling at the edges of the FR); whereas, constructing the line in the middle of the FR would not have the same effect. • Many people have encroached within the forest reserves. They will be asking for compensation. • The Chief should be implicated. Even within forest reserves, the land was initially within the traditional chiefdoms. • For specific requirements and processes, WSP/ZESCO should refer to the National level of the Forestry Department. • Assessment of the stumpage value should be done just before project implementation. It would come as a directive from the National Offices to the Provincial Office, and then the work would be done at the district level. • Given the fact that this is government property, payment will be required for the damage.	N/A

ITEMS DISCUSSED	ACTION BY

5 KASAMA DISTRICT FORESTRY DEPARTMENT
• Mrs. Kalengwe, the Kasama District Forestry Officer, was met briefly and shared the following points:
  • The Kasama District Forestry office collaborates with the National Heritage Conservation Commission regarding issues within the Kasama FR. However, the FR goes beyond the Mwela Rock Art site.
  • For example, for the ICBC Kasama-Nakonde line, ZESCO was communicating with the NHCC, but the district Forestry Office was informed by the NHCC.
  • For this ESIA, there should be communications with both authorities.
  • Assessment of stumpage value must be done at the district level. For the Kasama-Nakonde line, ZESCO is in the acquisition phase and the stumpage value assessment will come soon.
	N/A

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Kasama Forest Reserve	**DATE:**	September 12, 2019
VENUE:	National Heritage Conservation Commission offices, Kasama	**TIME:**	8:30 to 10:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Site Manager - NHCC
	Architect - NHCC
	Archeologist - NHCC
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	SAPP
	ZESCO

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for several years. ZESCO is the project promoter. • Project was previously presented to NHCC by ZESCO in March, in a brief consultative meeting.	N/A

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ITEMS DISCUSSED	ACTION BY
2 MWELA ROCK ART SITE • The line under study passes within the Mwela Rock Art site. • The site has legal protection, being a National Heritage Site and a Forest Reserve. • The site is one of the 5 national sites on the UNESCO World Heritage pending list. • It has the highest concentration of rock art paintings in Southern Africa. • The site's significance is not just archeological, it is also geologically significant and has mythological value. • It is also of ecological significance and is a cultural landscape. • There is no clear demarcation of the Mwela Rock Art site.	N/A
3 ANTICIPATED IMPACTS AND MITIGATION MEASURES • The NHCC cannot speak for the Forestry Department. • In order to give an informed view of the potential impacts and how to mitigate them, the NHCC needs to carry out a heritage assessment in the ROW. • The project proponent funds the study to be undertaken by the NHCC. • A similar assignment was completed for the Kasama-Nakonde line, within the 50 m ROW. • The previous study does not cover the ZTIP. The new assessment will be an updated previous study to consider this new project. • Time estimate: a scoping study has already been completed and the assessment will require about 6 days of field work. Within a month everything should be completed. • The study will be completed as soon as possible. A meeting is planned with ZESCO next Tuesday to determine the details. • This Heritage Assessment needs to be completed for NHCC to determine if there are any direct impacts on the Mwela Rock Art site. • As mentioned before, there is no clear demarcation of the Mwela Rock Art, but NHCC confirms that the line is within the Mwela Rock Art site. • For recommendations on mitigation measures from the NHCC, it is better to wait for the Heritage Assessment. • Lessons learned from other projects in heritage sites: • Powerlines often have specifications that cannot change, for example structures lower than the trees, to protect the landscape. This is not possible.	N/A

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Northern Province Forest Reserves	**DATE:**	September 13, 2019
VENUE:	Northern Province Department of National Parks and Wildlife (DNPW), Kasama.	**TIME:**	8:30 to 9:30

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Forest Research - AECS
	Senior Wildlife Ranger - DNPW Kasama
	Senior Wildlife Officer – DNPW Kasama
	ZESCO
	ZESCO
	ZESCO
	SAPP
	ZESCO

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. ZESCO is the project promoter. • General maps of the project were presented to DNPW.	N/A

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ITEMS DISCUSSED	ACTION BY
2 THE DNPW KASAMA OFFICE • This office has jurisdiction on the Kasama, Chilubi and Luwingu Districts. • The office manages the Isangano National Park, the Luwingu GMA and the Chambeshi GMA. • Most of these areas are depleted of wildlife. There is not as much fauna as on the Eastern side of Zambia (Luangwa National Park). • Poaching has led to a decrease in wildlife populations. • In the past, there were not enough wildlife camps and human resources to enforce legislation. Especially during the ZAWA period, when many camps were closed and animals were left unattended. • The DNPW office works on some community awareness to protect wildlife and people are encouraged to move out of the parks on their own.	N/A
3 WILDLIFE IN THE PROJECT AREA • Hippos are present in the lakes and streams and they can move upstream when there is more water. • There are many reports of human/crocodile conflicts, which suggests that their populations are relatively healthy. • Leopards can be found everywhere, even in “open areas” (outside the GMAs and NPs). They are very mobile. • Waterbucks and black letches are present in wetlands within the GMAs. • However, they are moving away because of the presence of people in the area. There is an important fishing community in the GMA. They are being told they will have to leave. • There are no elephants or lions in these areas, but some leopards are present. • Animals are mainly in the NPs and GMAs, but they are mobile and will also be found in the Forest Reserves. • Lions and elephants are present in the Mbala area, they might also be found near Nakonde. • Elephants migrate from the Katavi National Park in Tanzania towards the Mbala area and then towards Mpulongwe (Nsumbu NP). • This migration is not so dependant on the season, rather the elephants move when they are disturbed. They mostly move during the wet season, but with climate change, the seasons are changing.	

ITEMS DISCUSSED	ACTION BY
4 IMPACTS OF THE POWERLINE • Part of the Luwingu GMA is near the proposed line. • Even if the line will cause some habitat losses, the advantage of having the line and a more stable electricity supply outweighs the impacts. • For another powerline project that passed through an NP, some cut wire was left behind after the construction. This wire was used by locals to build animal traps. The park scouts had to gather the wire. • It is important to remove all litter once the construction is finished. • The vegetation clearing makes place for grass, which can be an advantage for grazing animals. • Community Forest projects help conserve the protected areas. ZESCO could participate in some projects for good social corporate responsibility.	

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project and passage in the Mungwi and Chitimululu Forest Reserves	**DATE:**	September 13, 2019
VENUE:	Mungwi District Forestry Department, Mungwi.	**TIME:**	11:00 to 11:30

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Forest Research - AECS
	Forestry Department - Mungwi District
	Forestry Department – Mungwi District
	ZESCO
	SAPP

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for several years. ZESCO is the project promoter. • General project maps were presented.	N/A
2 MUNGWI AND CHITUMUKULU FOREST RESERVES • The two forests are production forests. • There is legal charcoal burning in the Chitimukulu FR (pay the Forestry Department to produce the charcoal). • There is also illegal charcoal burning. • People have encroached on the forest, mostly cassava and ground nuts are cultured. • The Mungwi FR is a water catchment area. There is illegal timber harvesting and gardens within the FR. • There are beekeeping projects in the area.	N/A
3 IMPACTS OF THE POWERLINE • The district will need to do a resource assessment before clearing is done for the line.	N/A

Prepared by: Maya Brennan Jacot, September 2019.

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MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project ESIA	**DATE:**	September 16, 2019
VENUE:	WWF Zambia offices, Lusaka	**TIME:**	8:30 to 10:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Coordinator Climate Change and Energy Team
	GIS Expert – Freshwater Team
	Wildlife Officer

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. Zesco is the project promoter. • There is already an existing powerline built 3 years ago, from Pensulo to Kasama, and a second line is already planned from Kasama to Nakonde. • WSP also has the mandate to produce a Biodiversity Management and Monitoring Plan.	N/A
2 FRESHWATER AND ENERGY PROGRAM • One of the freshwater team's and energy team's key interests is hydropower, on how to make power generation more sustainable in Zambia. • WWF is working closely with the Department of Energy on this issue. • Recently, a hydropower project planned in the Luangwa River Valley, in the North Luangwa National Park, was abandoned following WWF reaching out to the government. • WWF is now working on proposing a sustainable hydropower configuration for the country.	

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ITEMS DISCUSSED		ACTION BY
3	**WATER RESOURCES - PROTECTED AREA PROGRAM** • This program aims at identifying highly sensitive areas in the country, such as erosion areas and areas sensitive to sediment runoff • All information is mapped and integrated in a data base. • Candidate catchments were ranked according to different criteria. Sensitivity also considers land use mapping. • Data base creation required very intensive work and integration of quality data. The data base integrates all data available on water resources in the country. • The WRPA program should be used as a tool to support decision making and eventually activities in protected water resource areas should be restricted. • The WRPA data is not yet published. The next step for this program is communications. Following that, the WRPA data will be in the public domain. • ZESCO should write a letter to WWF to get this information which could be useful in completing the ESIA. • ZESCO should send letter to WWF Zambia CD requesting WRPA data and information for the ESIA. Send e-mail with attached letter to fchivava@wwfzam.org and lkatiyo@wwfzam.org and she will transfer the letter.	N/A
4	**SENSITIVE AREAS** • The road the line follows is on the Luangwa - Chambeshi divide (east is the Luangwa basin and west is the Chambeshi basin). The area is a source of several streams and the Chambeshi River is a very significant catchment. • There is an important bat migration between Kasanka and Pensulo. Bats follow the fruiting of the Uapaca tree. • There are congregations and some nesting sites of the vulnerable Southern ground hornbill. The species is specialized in the miombo woodland. • The Lavushi Manda National Park is gaining more and more attention from the government. Also, the Lwitikila Forest Reserve, north of the National Park, is one of the Forest Reserves that is still intact. • There is an important Bird Area on the northern side of the Chambeshi Basin, between Nakonde and the Chozi station. There are many cranes in that area.	
5	**POTENTIAL IMPACTS OF THE PROJECT** • Regarding aquatic ecosystems, the cutting of trees during powerline construction and maintenance can have impacts on aquatic ecology. • Impacts on natural resources should be looked at, for example, impacts of tree cutting on caterpillar harvesting. Miombo worms and Mopane worms are harvested from trees and eaten by local populations. • Cumulative impacts of encroachment in habitats should be assessed. • Endangered Wildlife Trust has published a study on birds and impacts from the powerline.	

ITEMS DISCUSSED	ACTION BY
6 BIODIVERSTY MANAGEMENT AND MONITORING PLAN • WSP will be preparing a BMMP for the project, in parallel to the ESIA. • WWF Zambia will be re-contacted to present BMMP results.	WSP to contact WWF Zambia

Prepared by: Maya Brennan Jacot, September 2019.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**WSP Ref.:**	191-09831-00
SUBJECT:	ZTIP Project ESIA	**DATE:**	September 17, 2019
VENUE:	Department of National Parks and Wildlife, National Office, Lusaka	**TIME:**	9:00 to 10:00

ATTENDEES	
Name	**Corporation**
Maya Brennan Jacot	WSP – Biodiversity Specialist
	AECS – Coordination
	Principal planner - DNPW
NOTE: as it was finally not possible to meet with DNPW Assistant Director, WSP/AECS met with Principal Planner, to see if information could be shared regarding national park limits.	

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • WSP has the mandate to produce the ESIA for the ZTIP project. • WSP is working with AECS, who are the national ESIA coordinators and are handling the national ESIA process. • ZTIP: the project has been ongoing for a number of years. Zesco is the project promoter. • A deviation of the line route was identified to avoid encroachment in the Lavushi Manda National Park.	N/A
2 NATIONAL PARK BOUNDARIES • Sending a letter to the DNPW Director to get the national park and game management area limits, is the official way to get park boundaries. • DNPW shared the georeferenced boundaries of the Lavushi Manda National Park and the Munyamandzi Game Management Area.	

Prepared by: Maya Brennan Jacot, September 2019.

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MINUTES OF MEETING: CARE, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 25, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	CARE, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS

ITEMS DISCUSSED

- Unfortunately, no meeting could be held due to the absence of the gender program manager.
- Rapid discussions with a member of CARE has helped understand the scope of CARE activities. CARE integrates gender into all their projects, and GBV is mainstreamed.
- A document was later sent, by the gender coordinator to the consultant, on CARE involvement regarding GBV: “ONE-STOP MODEL OF SUPPORT FOR SURVIVORS OF GENDER-BASED VIOLENCE: LESSONS FROM CARE ZAMBIA”, this document highlights the involvement of CARE in several Coordinated Response Centers (CRCs) in several areas of the country, unfortunately none are in the project area.

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MINUTES OF MEETING: CARITAS, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 25, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	CARITAS, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- Programme Officer Knowledge Management

ITEMS DISCUSSED

- Eric Deneut presented the Project and its impacts.
- Eric Deneut asked which activities were undertaken by CARITAS related to GBV.
- Rapid discussions with a member of CARITAS helped understand the scope of this NGO's activities. CARITAS integrates gender into all their projects, and GBV is mainstreamed. However, there is no specific program on GBV.
- CARITAS carries training on gender issues for field coordinators in Mpika and Kasama. Field coordinators are involved in agriculture activities. Field coordinators, in turn, have trained lead farmers on gender issues during a 2-week program.
- According to Chibesa Ngulube Ngwira, CARITAS realised that when men are empowered thanks to a funded project by CARITAS (such as creation of aquaculture), they start behaving poorly toward women, especially during harvest time where women are left alone on the field. When implementing a project, community members feel that men are more eligible than women. Since then, CARITAS has engaged in sensitization with men to ensure women do not pay the consequences of funded projects.
- Chibesa Ngulube Ngwira was provided with CARITAS member's contact number, in the project area.

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MINUTES OF MEETING: NGOCC, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 25, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	NGOCC, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS

ITEMS DISCUSSED

- Unfortunately, no meeting could be held due to the absence of the Program Manager.

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MINUTES OF MEETING: WORLD VISION, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 25, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	World Vision Headquarters, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- Associate Director - Grants Acquisition & Management of World Vision

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts.
- Eric Deneut asked which activities were undertaken by World Vision related to GBV.
- Mme Banda presented the One-Stop Centers (OSCs) in the project area. These OSCs were recently handed over to the Ministry of Health. This ministry is now in charge of all OSCs. There are OSCs in Mpika, Kasama, and Nakonde, but not in Serenje.
- According to Mme Banda, OSCs are mobile, they can go on site even in rural areas where the project will take place.
- According to Mme Banda, OSCs are also doing sensitization work in rural areas.
- According to Mme Banda, OSCs offer medical support.
- Eric Deneut mentioned that these would be visited during field work.
- Mme Banda asked that the capacity of these OSCs be assessed, to not create too much burden on existing staff.
- Mme Banda provided contact number for the Ministry of Gender.

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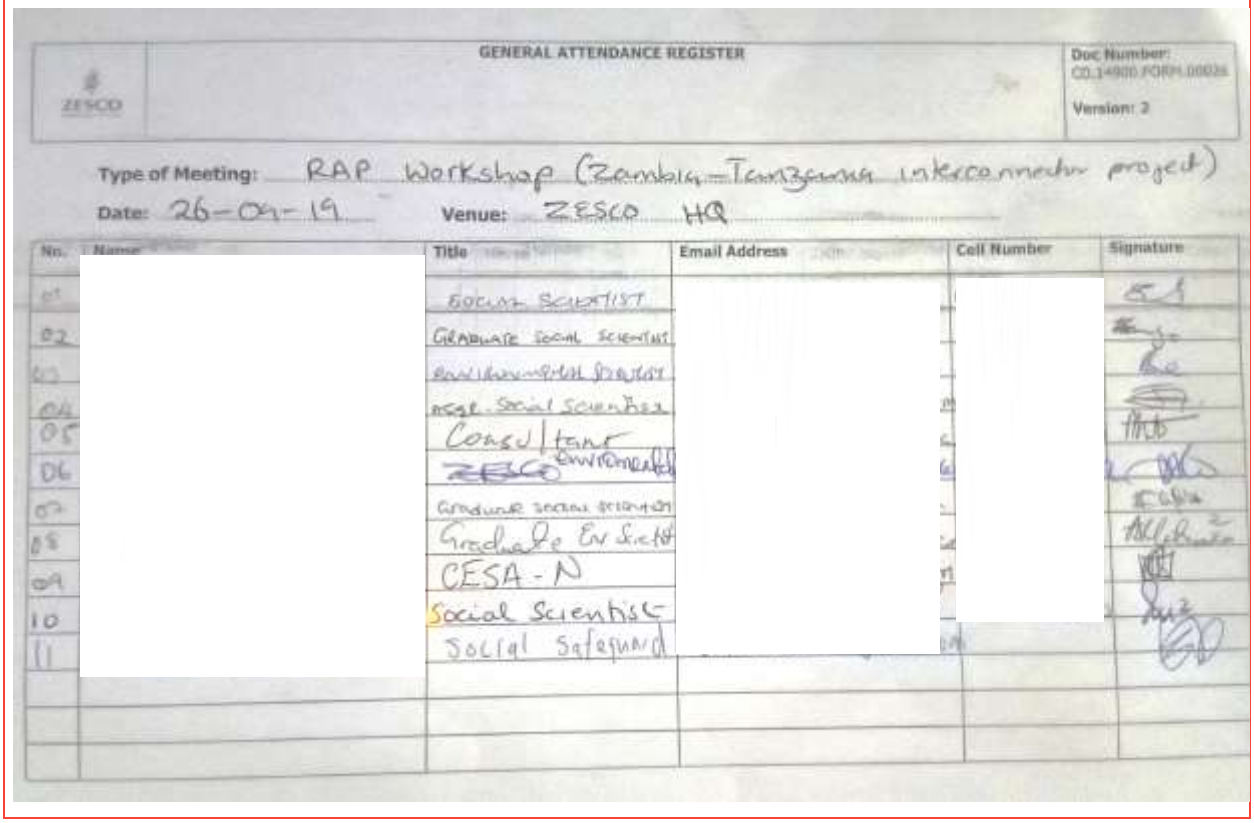
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WORKSHOP MINUTES: ZESCO HEADQUARTERS

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 26, 2019, and field discussions on September 30.
SUBJECT:	Workshop on Resettlement and ZESCO's Census Data	**VENUE:**	ZESCO, Lusaka

ATTENDEES



GENERAL ATTENDANCE REGISTER

Doc Number: CO.14900.FORM.00026
Version: 2

Type of Meeting: RAP Workshop (Zambia-Tanzania interconnector project)
Date: 26-09-19 Venue: ZESCO HQ

No.	Name	Title	Email Address	Cell Number	Signature
01		Social Scientist			
02		Graduate Social Scientist			
03		Environmental Officer			
04		Asst. Social Scientist			
05		Consultant ZESCO Environmental			
06		Graduate Social Scientist			
07		Graduate Env Scientist			
08		CESA-N			
09		Social Scientist			
10		Social Safeguard			
11					

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ITEMS DISCUSSED

- Eric prepared a PowerPoint presentation listing all ZEMA requirements for the RAP.
- Discussions were held on the following topics to make sure that WSP obtains all the census data and understands the way ZESCO usually compensates PAPs. Additional discussions during the first field visit (in Pensulo, September 30, 2019) are captured in these minutes, since the consultant wanted to have more information after a first field visit:
  - Census method;
  - 2019 census results;
  - 2019 valuation results;
  - Categories of PAPs;
  - Vulnerable persons;
  - Land tenure;
  - Livelihood;
  - Household income levels and expenditure;
  - Comprehensive description of the eligibility criteria for the compensation program (who will receive compensation or rehabilitation assistance and how will the compensation or rehabilitation assistance be structured?);
  - Compensation or rehabilitation assistance measures for loss of income;
  - Compensation or rehabilitation assistance for social and/or public infrastructure;
  - What are the choices regarding compensation?
  - Resettlement options considered;
  - Measures to prevent land speculation;
  - Assistance to special groups of people;
  - Compensation or rehabilitation assistance for social and/or public infrastructure;
  - Consultations that have taken place during the census/valuation process;
  - Issues that were identified, and/or agreements that were reached to address these issues;
  - Stakeholders involved in public consultations;
  - Compensation payment;
  - Beginning of resettlement;
  - Beginning of construction work;
  - Estimated cost per component (compensation and assistance);
  - Method for registering and addressing grievances;
  - Current grievances regarding the project;
  - Who will be the main resettlement actors;
  - Monitoring of post relocation.

ITEMS DISCUSSED

- Census method:
  - Yes, the entire line was covered by ZESCO's census;
  - Census started August and ended in September 2019;
  - Beacons? No beacons are installed because the final design is yet to be done. Surveyors looked at coordinates on GPS to identify PAPs;
  - Census took place within 35 m on one side due to the existing 330 kV line (between Pensulo and Kasama) for which a RAP was produced;
  - Around Kasama substation and along the diversion to this substation, an area of 300 m was captured during ICBC RAP and not covered in this project census;
  - Kasama to Nakonde: 100 m were acquired during ICBC RAP, during this project census an additional 10 m on one side were acquired and surveyed. The ICBC RAP was not obtained;
  - For substations, no additional land was required (substations are already in place except for Nakonde).
- 2019 census results:
  - 182 households were surveyed in the area mentioned above. However, after reviewing the census table, this figure was reduced to 177;
  - Few communal assets, two church lands, no graveyards;
  - There is a mix of economic and physical resettlement;
  - The table of census results was obtained.
- 2019 valuation results:
  - Valuation is still to be done, the valuator still needs to go to the field, it is an independent private firm, this will be done next month;
  - Pictures of PAPs will be done during the valuator's mandate, at this stage census took identification numbers and names, but no pictures.
- Categories of PAPs:
  - People are still allowed to continue agriculture in the wayleaves, TA are allocating land to PAPs for permanent losses, most PAPs will be compensated for the time of construction only, and not for land, since they are customary owners and the land belong to Chiefs.
- Vulnerable persons:
  - ZESCO's census collected specific data;
  - Vulnerable people's study was done using the central statistics office's living conditions' monitoring survey to determine vulnerability. The method is called PPI.

ITEMS DISCUSSED

- Land tenure:
  - Customary land owner, few state lands (titled lands) (categories were done during ZESCO's census);
  - Impacted National Forest will be compensated separately from the RAP and were not captured during ZESCO's census;
  - Land remains customary in the servitude, no changes in land tenure (it does not become titled land nor ZESCO land).
- Livelihoods:
  - Livelihood assessment was done during the census, most households are doing subsistence agriculture;
  - Grazing will not be restricted so there is no impact on this source of livelihood;
  - Eric Deneut asked about impacts on ecosystem services, participants mentioned that no specific information and no impacts on ecosystem services were collected, such as native trees. Census people did not raise the question/issue on this topic.
- Household income levels and expenditure:
  - Income is obtained (monthly income per household). Data on expenditure is more complicate to obtain because people do not have a budget nor a bank account.
- Comprehensive description of the eligibility criteria for the compensation program (who will receive compensation or rehabilitation assistance and how will the compensation or rehabilitation assistance be structured?):
  - Caretakers (user rights are compensated);
  - Squatters: more in urban areas, not common in rural areas, foreigners from Tanzania are eligible for compensation;
  - Regular land owners;
  - Widow land owners;
  - Orphan land owners;
  - Draft policies describing eligibility was obtained from ZESCO;
  - If not mentioned in ZESCO's census, it means that there are no such categories encountered.
- Compensation or rehabilitation assistance measures for loss of income:
  - ZESCO mentioned that one compensation package will be provided that includes loss of crops (temporarily impacted livelihood);
  - ZESCO mentioned that there will be one compensation method for houses that need to be moved: the full replacement at market value according to official rates will be applied;
  - All compensations are under one budget, but physical assets are separately budgeted from livelihood;
  - Temporary impacts: people will be allowed to return and crop on their land after work. Compensation for a given crop and its value only (not for permanent land lost). The head of household is eligible for compensation for the lost harvest;
  - There is no compensation for permanent land losses (under towers) and no compensation difference between permanent restrictions to land access and temporary restrictions to land access since land tenure does not change;

ITEMS DISCUSSED
– Eric Deneut asked about titled lands that will be permanently impacted by towers: ZESCO does not intend to acquire permanent lost land under the tower and does not intend to compensate for the value of the land. Under towers there will be no permitted activities; – No businesses will be impacted by the current project; – Fruit tree compensations are rated by district agriculture coordinator (DACO) and gazetted rate under the Agriculture Act, Eric Deneut mentioned that rates are not in the act itself but probably in a bylaw or decree which were not obtained at time of this RAP. DACO needs to carry out their valuation of crops and fruit trees (in addition to the house valuation activity). – ZESCO intends to carry out work after the harvest to minimize impacts on people's livelihood; – Compensation is paid at once; – People sign a compensation agreement at Disclosure (stage called "Disclosure" by ZESCO).
– Compensation or rehabilitation assistance for social and/or public infrastructure: – Full market value; – Money will be paid to a contractor directly and village committees are there to follow up on this.
– What are the choices regarding compensation? – Always cash compensation along transmission line because impacts are minor (there are no choices); – House for house is implemented for dams and reservoirs because impacts are more serious; – Eric Deneut asked about the impact of cash compensation: ZESCO engages in counselling at village level to avoid unwanted impacts. Both wife and husband are present during disclosure and are encouraged to open a joint account. These are not embedded in procedure (no obligation but only sensitization), ZESCO asks banks to come to the community to help open a bank account, these measures are project specifics depending on the finding and risk assessments. ZESCO can adapt its approach to reduce the risks; – Old persons can be compensated in kind (house for house) to avoid the younger men in the family stealing money. Vulnerable people can be treated separately, all based on risk assessment; – Polygamy: counselling for the whole family on money management; – Household definition is taken from the Act (Disaster Management and Mitigation Act); – It is ZESCO's normal practice to implement this method for compensation.
– Resettlement options considered: – Cash only (as mentioned above), since the person and TAs know where to go, there is no search for available land during RAP process.
– Measures to prevent land speculation: – Sometimes, market value changes over the course of a project. When this happens, ZESCO takes the case back to the valuator and re-evaluates the land and verifies the land value.
– Assistance to special groups of people: – Elder people will receive assistance; – Ordinarily, there is a single document with two compensation amounts, one for crops and one for the house. Other than that, there is no itemized compensation money according to the categories of PAPs and eligibility; – The valuator report still needs to be done.

ITEMS DISCUSSED
— Compensation or rehabilitation assistance for social and/or public infrastructure: – Market value.
— Consultations that have taken place during the census/valuation process: – March, where specific consultations were done with Chiefs (chiefs), and courtesy meetings, yet there are no minutes available from ZESCO; – ZESCO obtained 9 consents from them, data were obtained from 8 consent letters; – No specific public consultations on resettlement have been done since 2017; – ZESCO intends to do pre-disclosure counselling; – After the valuator report, ZESCO usually goes back on site to present the compensations and asks for the PAP to sign the compensation package (called “disclosure” stage). Disclosure allows PAPs to check if information is correct, look at the amount, then agree on the compensation and sign off; – These disclosure meetings involve the ministry of community development and social services (only for communication). ZESCO supervises the sign off; – Cut-off date will be declared later, once all is complete. ROW servitude will be communicated later during the installation of towers. There has been no declaration of a cut-off date because the final design is not produced yet.
— Issues that were identified, and/or agreements that were reached to address these issues: – Collected during the survey, but no specific public consultation; – Questions were asked during census, however the data provided by ZESCO do not provide these.
— Stakeholders involved in public consultations: – No specific consultations done since 2017 public consultations.
— Compensation payment: – Payment will be done before resettlement; – Calendar of RAP activities is not done yet, nor are technical studies (final design of the Project). There is only a final feasibility study. The final design will be done in about one year.
— Beginning of resettlement: – Unknown.
— Beginning of construction work: – Unknown.
— Estimated cost per component (compensation and assistance): – Valuation has not been done yet, impossible to make forecast.

ITEMS DISCUSSED

- Method for registering and addressing grievances:
  - There is already a committee per village, but it is not specific to the project;
  - Community liaison officers can address grievances;
  - Eric Deneut mentioned that it is preferable to involve an independent person to undertake the grievance redress mechanism (GRM).
- Current grievances regarding the project:
  - No grievances are currently conveyed to ZESCO;
  - There is no GRM for this project;
  - There will be a PIU located close to the project site.
- Who will be the main resettlement actors be?
  - PIU;
  - ZESCO engages outsider specialists for community services (counselling for social and psychological risks) and financial experts for money management;
  - Project accountant from ZESCO distributes compensation;
  - Agriculture and forestry officers (other agencies from the government) are engaged, NHCC for heritage sites, and an environmental coordinator from ZESCO is addressing and managing grievances;
  - Evaluation expert.
- Monitoring of post relocation:
  - Monitoring of post relocation: ZESCO goes with ZEMA on the field and they check on people and their livelihood (standard procedure from ZESCO, policy document details this).
- Additional questions from Eric Deneut during field visits:
  - Eric Deneut asked how are houses demolished? People dismantle their house themselves by recuperating bricks. According to ZESCO, the compensation for houses includes an allowance for the disturbance, however, this item is not mentioned in the valuation report (to be done). Eric Deneut recommended that the valuation itemize the compensation to highlight these allowances. There will be no transport allowances since people can move a few meters from the wayleave;
  - Eric Deneut noticed that the surface of lands occupied by regular towers is about 40 m^2 while the surface lost under V towers is indeed much larger due to the presence of cables, surface lost covers about 600 m^2. Eric Deneut asked about compensation for permanent losses of land under the towers: customary land belongs to Chiefs and people have never paid for it (and do not pay taxes) and Chiefs have given their consent for the project, people who are impacted will be given land by their village headmen for free. Eric Deneut asked about titled land, where people have land titles that they payed for and pay taxes on them: ZESCO answered that even this category of PAPs will only be compensated for lost crops and not for land because there is no alienation of land (no new land demarcation). Eric Deneut mentioned that best practices recommend compensating land lost;
  - Eric Deneut asked about the fees to open a bank account and where the money will be deposited. What about people that do not have a bank account (most PAPs do not have a bank account)? What about bank fees when people will withdraw their money? Will they lose some money? According to ZESCO that is correct.

MINUTES OF MEETING: MINISTRY OF GENDER, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 27, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	Ministry of Gender, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- Assistant Director Ministry of Gender (MoG)

ITEMS DISCUSSED

- Eric Deneut presented the Project and its impacts;
- Eric Deneut asked which activities were undertaken by MoG related to GBV;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work.
- Namatama Sakabilo Chinyana presented the role of the MoG:
  - Coordinate and monitor the Gender Policy 2000;
  - Coordinate and monitor Anti-Gender Violence Act;
  - Coordinate and monitor Gender and Equity Act;
  - Coordinate and monitor the National Strategy on ending child marriage.
- Namatama Sakabilo Chinyana presented the various activities implemented by the MoG and all programs funded by various lenders;
- The MoG does not have structures at provincial level or district level, they depend on NGOs on the ground;
- Namatama Sakabilo Chinyana presented the OSCs.

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ITEMS DISCUSSED

- Discussions were held on the type of GBV most commonly encountered in the country and most particularly in the project area:
  - Child marriage (marriage in convenience) is common in the project area. Poverty leads to GBV, parents want to reduce the number of mouths to feed by marrying their daughters. Usually the man leaves the young girl and her child after construction is over and denies responsibility. Lack of employment opportunities does not help as well as limited access to recreational facilities for children. Many young girls have a misconception about pregnancy, they think that it only happens after participating often in sexual intercourse;
  - GBV is deep rooted in the local culture;
  - In Nakonde (border town) there is a lot of GBV and many sex workers;
  - In total in Zambia, there are 22,073 reported cases of GBV;
  - There are also many challenges when trying to address GBV: lack of transport to go to the field and collection of evidence.
- Eric Deneut asked what can be done to change things:
  - Change the mind set, people need to feel comfortable talking about GBV, today there is a culture of secrecy;
  - Sensitization needs to start at the household level in villages;
  - In order to select a good services provider for the time of construction work it is best to select a person that is not influential in the village but well respected by community, someone who has experience in GBV needs to be selected;
  - Sensitization in schools is recommended.
- Namatama Sakabilo Chinyana recommends that the Victim Support Units from the police and OSCs be met.

MINUTES OF MEETING: VICTIM SUPPORT UNIT, LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 27, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	Victim Support Unit (VSU), Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- National Coordinator of the Victim Support Unit (VSU)

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked which activities were undertaken by VSU related to GBV;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut presented a draft version of the GBV Action Plan to discuss its feasibility;
- Gloria Meamui Mubitam mentioned that the VSU never provided awareness to construction workers because they are not invited, and because contractors are opposed to this;
- The VSU works with the OSCs, in fact they are part of the OSC team;
- VSU is present all over Zambia in every police station;
- According to Gloria Meamui Mubitam, the most common types of GBV are unwanted pregnancies and sexual harassment on construction sites;
- Eric Deneut presented the GBV Action Plan where the VSU shall play a role in addressing GBV (in the GBV complaint team) and in doing prevention and awareness to workers. Eric Deneut proposed that a uniformed VSU do awareness induction training to workers. Gloria Meamui Mubitam agreed to these measures and to the role of the VSU in the GBV action plan.

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MINUTES OF MEETING: YWCA LUSAKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 27, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	YWCA, Lusaka

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- Executive Director

ITEMS DISCUSSED

- Eric Deneut presented the Project and its impacts;
- Eric Deneut asked which activities were undertaken by YWCA related to GBV;
- YWCA has an office in Kasama. It is a drop-in center, a shelter for victims where people report their cases and are kept safe and away from their violent spouse. Patricia M. Mphanza Ndhlovu was provided with the shelter's contact number;
- YWCA has an awareness program on GBV in the study area, locally they work with the MoH;
- YWCA has extensive knowledge and experience on GBV and understands the issues at stake and "what works and what does not work".

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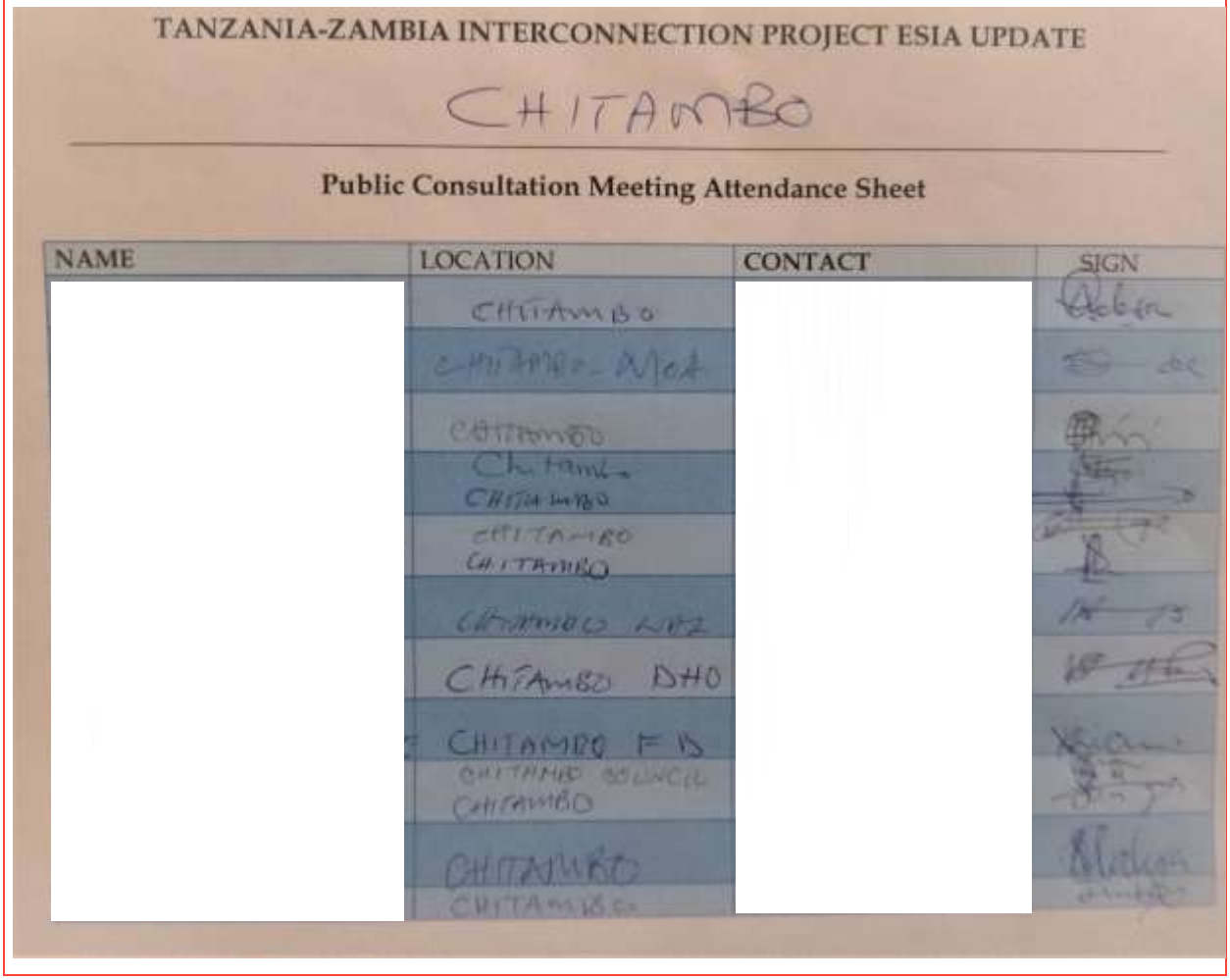
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MINUTES OF MEETING: CHITAMBO DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 30, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	Chitambo DC office

ATTENDEES



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

CHITAMBO

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
	CHITAMBO		
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	CHITAMBO DHO		
	CHITAMBO F B		
	CHITAMBO COUNCIL		
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ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist

In addition, the Kumda DC, was met separately prior to the meeting

ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan;
- According to Catherine, the Kumda DC, a possible way to implement a GRM is to involve local Ward Development Committees, which work with Chief representatives. Ward Development Committees receive an allowance by the gov, they are elected representatives of the government at Ward level. Ward Development Committees meet and report to the Councillor. According to Catherine, the Kumda DC, they need to be prepared for the construction to come;
- According to Catherine, the Kumda DC, GBV cases are present here and no NGOs are working in this district. Child marriage is taking place in this district;
- To remedy for GBV, awareness shall be done at schools with boys and girls, but the focus shall be on boys;
- GBV is present but since no NGOs are here, they are only a few reported cases;
- There is a need for more awareness campaigns regarding GBV;
- Workers go to communities and engage in GBV;
- The local health department is dealing with GBV cases;
- Chief courts are addressing GBV for civil matters, then Chiefs are reporting to the VSU for criminal affairs. However, customary courts are not applicable for foreign workers;
- According to Catherine, the Kumda DC, a new ward named Nakatambo is missing from WSP maps;
- Meeting with district stakeholders took place in another room;
- District employees were from several departments: agriculture, health, forestry, social services, etc. A person was from the District Aids Task Force (DATF);
- A question was asked regarding the need for local content: Stella S. Kayope, ZESCO Social Scientist answered that ZESCO has foreseen this;
- A question was asked on ZESCO social corporate policy and why they do not give money to districts for specific activities. Stella S. Kayope, ZESCO Social Scientist, answered that ZESCO has AIDS awareness fund during projects;
- A person from Forestry mentioned that the line is passing through Kanona Forest Reserve and that ZESCO needs to engage with the Forestry Department on that subject;.

ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

- A person from the district's social services mentioned that there is no GRM and no GBV action plan in place, for GBV they receive complaints only through the VSU. There is a culture of not reporting GBV in this district, and many people believe GBV is part of love. This person also mentioned that GBV is felt more in towns than in rural areas during construction work because workers go to town to meet women;
- Discussions were held on the possibility to involve Ward Development Committees in the GRM, however, their role is economic development, not addressing grievances;
- The traditional way of addressing GBV in this district is as follows: complaints are conveyed to the village headman which in turn goes to the Chiefs, which in turn call the VSU;
- DAFT is made of a woman employed by the District, she carries out sensitization and awareness to community members. According to this lady, people fear opening and reporting GBV because they fear ending up living in poverty and losing money, even when women report cases, they retrieve their complaints after a while. There is fear of social stigma. To address GBV through a GRM, there is a need for an independent person who does not have any interest in the project, a GRM focal point;
- According to a participant, another important factor is discouraging women from filing a complaint with the police: the fact that transportation is costly from rural areas to the VSU;
- A participant highlighted that there are no GBV services provider in this district;
- A participant recommended that the VSU have a mobile unit to go around impacted communities and detect GBV cases and keep victims from spending money to go to the VSU in town;
- A person from the agriculture department asked when they will be involved to assess the value of crops. ZESCO mentioned that the valuation of crops should start soon;
- Another person asked when the project would start: Stella S. Kayope, ZESCO Social Scientist, said construction would start between 2020 and 2021.

MINUTES OF MEETING: SERENJE DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 30, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	DC office in Serenje

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- District Commissioner

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan;
- mentioned that in the area there were GBV issues with manganese workers, but they have been sensitized on AIDS and the department of labor has sensitized workers;
- According to X, GBV is not directly addressed by district officers in the district but mainstreamed by several departments. He talked about the work of the VSU in the district;
- According to X a GRM does not exist but is mainstreamed by several departments:
  - Community Development and Social Welfare are dealing with grievances from communities;
  - Labor department is dealing with grievances from workers;
  - Department of agriculture is dealing with grievances related to agriculture, etc.

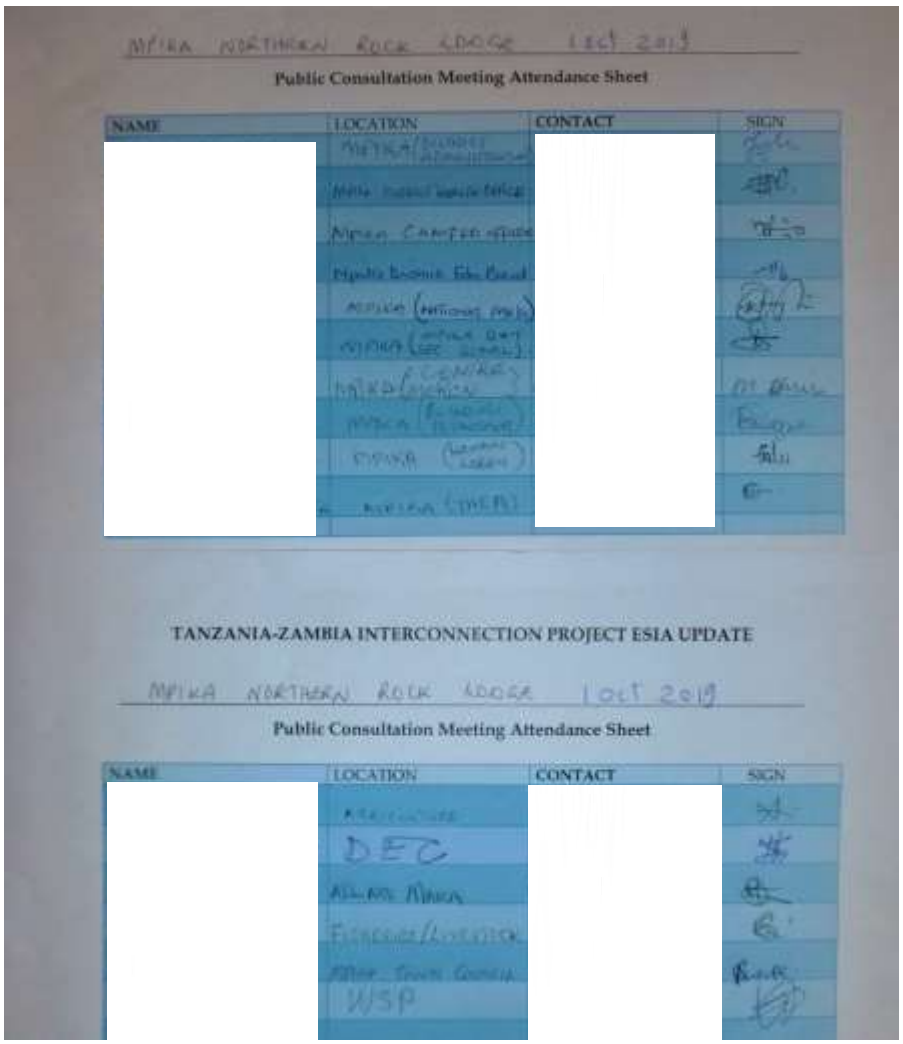
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MINUTES OF MEETING: MPIKA DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 1, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	Hotel venue, Mpika

ATTENDEES



MPIKA NORTHERN ROCK LODGE 1ST OCT 2019

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
[redacted]	[redacted]	[redacted]	[redacted]

TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

MPIKA NORTHERN ROCK LODGE 1ST OCT 2019

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
[redacted]	[redacted]	[redacted]	[redacted]

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ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan;
- The DAO (District Administrator Officer) apologized for the absence of the DC and the two other DCs from Lavushimanda and Kanchibiya who were supposed to attend but due to a funeral of an important bishop they could not join the meeting;
- The DAO talked about the 2013-2017 rounds of public consultations in which many participants attended;
- Discussions started with an input from a representative from YWCA: Mpika is a large district and there is a need for more sensitization and resources are lacking to address GBV. In this context, it is difficult to sensitize everyone. In this district, there is a legacy issue with GBV and construction works. There is a OSC and the VSU are here. There are many GBV cases involving workers from foreign countries in this district. OSCs are successful because women feel free to talk, however, urban areas are benefiting more from OSCs than rural areas because of the cost of traveling to town. The OSC needs to borrow a vehicle from the DC when there is a rural case (the OSC does not have a vehicle, which was later confirmed by the Mpika OSC);
- Eric Deneut asked about the Ward Development Committee, whether they could play a role in the GRM. Participants mentioned that this committee scope of work is to develop local economy, not to address GBV and grievances. It was also recommended not to involve Traditional Authorities in GBV because of traditional ways of addressing GBV;
- The representative from YWCA recommends that a local focal point be implemented on site. Also, the chain of communications with the Ward Development Committee is too long to address grievances and GBV in an efficient way. In addition, victims may not feel comfortable talking to this committee;
- A participant mentioned that the focal point shall be an independent person that would just report GBV cases to the VSU and OSCs for the sake of confidentiality;
- Discussion were engaged on the root causes of GBV: according to one participant, young school girls are attracted to young workers with high paid wages, it is not always the family that pushes girls to get married. It is therefore also important to sensitize young girls before construction starts. Drugs and alcohol also often lead to GBV (it is a contributing factor);
- The DAFT is playing a role in sensitizing in Mpika;
- Awareness shall be done to workers, Eric Deneut mentioned that a Code of Conduct shall also be embedded in workers' contract;
- A participant also mentioned that there are cases of retaliation when a woman complains about GBV. Measures should be included in contracts to avoid retaliation;
- A participant mentioned that child labor is also an issue and that sensitization shall be done at the school level;
- Child pregnancy is an issue as well, and the department of education is already sensitizing at the school level;
- A participant mentioned that TAs should be involved and should not be pushed too far, they should also be sensitized, and the focal point should work with TAs in addressing grievances.

ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

– A period of questions started:
  – What is the definition of GBV? Eric Deneut provided the definition;
  – How to detect fake victims looking for money? Eric Deneut presented the concept of a GBV complaint team where all actors are involved to study the case and decide on sanctions;
  – A participant mentioned that logistics need to be put in place, that facilities are not adequate to address GBV. Eric Deneut mentioned that the project scale is small and that worker camps will not remain more than 3 months at one location. He also mentioned that the Mpika OSC will be visited after the meeting to assess its capacity;
  – A participant mentioned that bribing victims is common.

MINUTES OF MEETING: DOPE, MPIKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 1, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	DOPE, Mpika

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- Coordinator - Development of People's Empowerment (DOPE)

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan;
- X mentioned that all districts have a district task force to address GBV, while DATF are more oriented to address AIDS issues. A district task force is made of several other actors including local NGOs and district staff;
- DOPE works with women in different chiefdoms and in the district. They do sensitization at the village level, with village headmen, to end child marriage. Some Chiefs are proactive, others do not support GBV activities;
- DOPE has trained women's clubs to sensitize women in rural areas;
- Falling to pay school fees leads to child marriage (to reduce household fees);
- DOPE recommends to follow GBV cases as fast as possible to avoid giving time to perpetrators and families to discourage the victim.

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ITEMS DISCUSSED

– According to DOPE, the best way to identify victims is to:
  – sensitize husbands;
  – involve TAs to make them understand that GBV culturally accepted practices are no longer acceptable;
  – quickly address all cases because after a while evidence is hidden and people are starting to lie. In fact, only about 10% of reported cases end up with a court case;
  – spread awareness amongst workers;
  – implement community-based champions, in addition to a GBV service provider, who is from the community and knows the households in the area. They act as informants for the focal point and the GBV service provider.

MINUTES OF MEETING: ONE-STOP CENTER, MPIKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 1, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	OSC, Mpika

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- OSC Coordinator

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan, and discussed about the way OSCs function;
- Eric Deneut asked how do you address cases when they happen in rural areas? Usually they go on site and bring the victim to the OSC. Rural Health Centers are often involved in detecting cases, however they suffer from lack of capacity;
- According to OSC Coordinator, many cases happen in rural areas;
- They were funded by World Vision and two years ago the center was handed to the ministry of health;
- In terms of mobility, they face a challenge because they have no vehicle and must ask for the DC to borrow a vehicle and the vehicle is not always available. Lack of transportation is the main issue of this OSC;
- This OSC has the following staff: 2 permanent nurses and 4 counsellors (volunteers);
- OSC works with the VSU where filing a complaint is free for victims. They offer paralegal support from civil cases to criminal cases;
- OSC deals with all cases of GBV from psychological help to medical assistance;
- OSCs are members of GBV task forces (this task force is made of several departments);
- OSC Coordinator mentioned that some Chiefs are interfering as they want to address GBV themselves (even for criminal cases), others are more proactive in addressing GBV (such as Chief Chikwanda);

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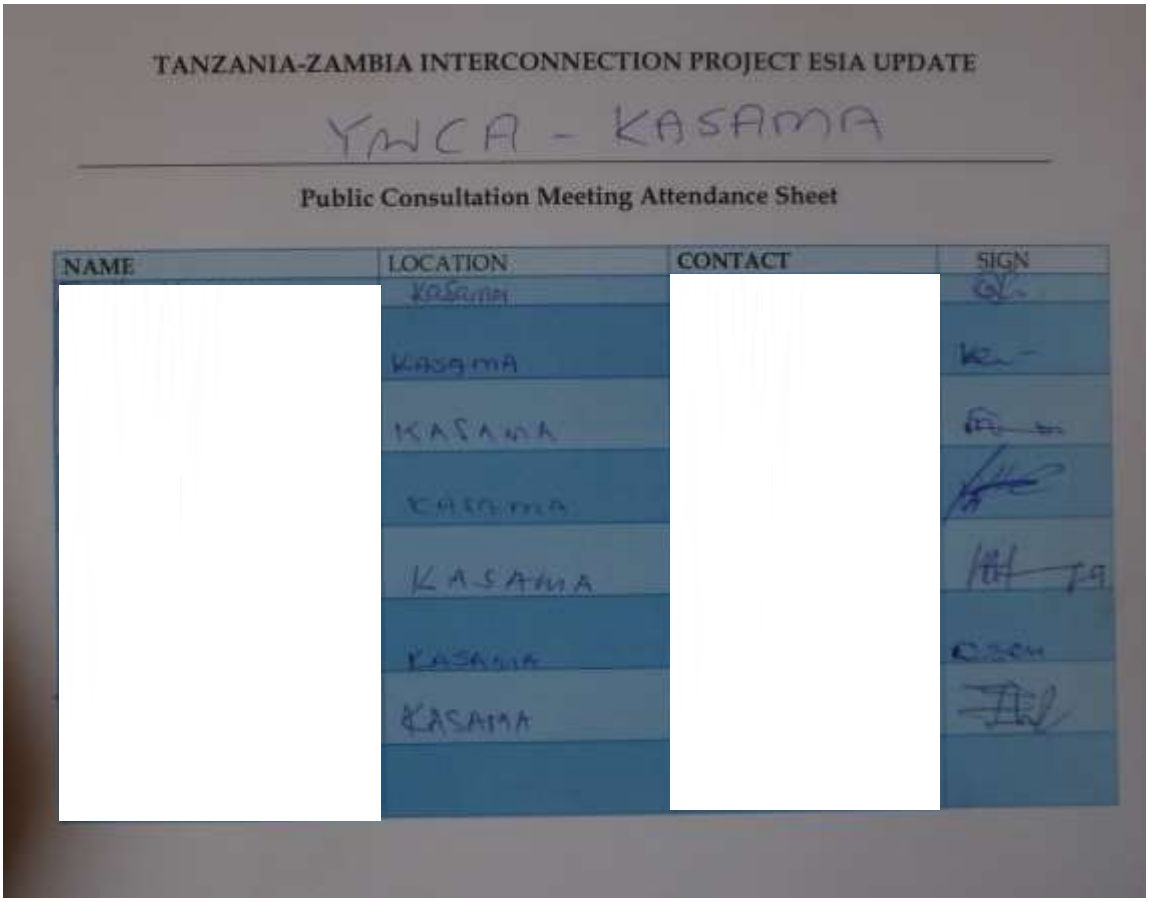
ITEMS DISCUSSED
— OSC Coordinator mentioned that construction work often leads to GBV; — OSC Coordinator recommended that a Local Content Plan be in place to reduce poverty and GBV; — OSC Coordinator mentioned that main actors spreading awareness in this region are DOPE, YWCA and World Vision; — OSC Coordinator mentioned that child marriage is the least reported case but the most frequent case in rural areas; — OSCs do not offer shelter for victims.

CONSULTATION NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	YWCA, Kasama

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

YWCA - KASAMA

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
	Kasama		
	Kasama		
	KASAMA		
	Kasama		
	KASAMA		
	KASAMA		
	KASAMA		

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ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions on the possible ways to implement a GRM and a GBV action plan;
- YWCA is running a shelter of 18 beds where victims can stay to escape from violent spouses or family members;
- The shelter has 4 counsellors and 2 paralegal officers (to help with legal cases), however, unlike the OSC they do not offer medical support. They do liaise with the Kasama OSC whenever needed;
- YWCA works in the district and in rural areas;
- YWCA has a GBV program made of:
  - awareness;
  - HIV sensitization;
  - land and property grabbing;
  - work with courts and VSU, upstream of legal cases;
  - work with the MoG;
  - work with TAs.
- According to general coordinator for the Northern province, confidentiality of victims is often an issue, they work in complete confidentiality for the protection of the victim;
- They detect cases by providing community members with a phone number where victims can call, this phone number is advertised. They also have door to door campaigns to reach women;
- YWCA has a vehicle and uses it to retrieve victims from unsafe environments;
- According to general coordinator for the Northern province, there are some Chiefs that are proactive in addressing GBV and others who are more resistant;
- According to general coordinator for the Northern province roads and other linear constructions are GBV vectors.

MINUTES OF MEETING: PARAMOUNT CHIEF CHITIMUKULA, ACTING CHIEF

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence and Resettlement	**VENUE:**	Hotel venue

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- AECS Coordinator
- Paramount Chief Chitimukulu, Acting Chief

ITEMS DISCUSSED

- Eric Deneut presented the Project and its impacts, including resettlement;
- Eric Deneut mentioned that this meeting was a courtesy visit;
- Eric Deneut asked about the types of GBV in the study area;
- The acting chief mentioned that the paramount Chief supports in fighting GBV. He also mentioned that ZESCO already met with the paramount Chief to talk about the substation;
- According to the acting chief, the main cause of GBV is poverty, where women are tempted to cheat on their husband for money. He also mentioned that most Chiefs are not aware of GBV cases.
- Eric Deneut asked if a local focal point could be ok to detect GBV cases, the acting chief mentioned that this is acceptable;
- Discussions on the previous resettlement along the existing 330 kV line carried out by ZESCO took place, the acting Chief mentioned that people were happy with ZESCO's way of addressing resettlement and that people have improved their livelihood after compensation payment.

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MINUTES OF MEETING: CHIEF MPEPO

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence and Resettlement	**VENUE:**	Chief Mpepo, Palace

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- AECS Coordinator
- ZESCO Social Scientist
- Chief

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts, including resettlement;
- Eric Deneut mentioned that this meeting was a courtesy visit;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Chief discussed the impacts on his property and asked for more information regarding the project and the new alignment. Eric Deneut showed him the wayleave on the map and mentioned that the line passes about 3 km from the Palace and avoids his land;
- When the discussions about GBV started, Chief mentioned that poverty is the cause of GBV, that most cases are related to alcohol from both women and men. Chief does not adhere to the definition of GBV as presented by Eric Deneut (he adheres to the traditional view on GBV).

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MINUTES OF MEETING: KASAMA DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	DC office in Kasama

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- District Administrative Officer (DAO)

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan;
- The DAO is also the District Gender Focal Point in charge of the GBV Task Force;
- The DAO highlighted the importance to act locally to ensure the GBV action plan is efficient;
- The DAO explained his role as a District Gender Focal Point. They are employees of the district and manage the Gender Based Violence Task Force at the district level. This task force coordinates activities related to GBV and meets with GBV service providers on a regular basis. The focal points are however holding other positions at the district level and are not in charge of field work.

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MINUTES OF MEETING: ONE-STOP CENTER, KASAMA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	OSC, Kasama

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- OSC Coordinator

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan and regarding the way the OSC functions;
- Eric Deneut: how do you address cases when they happen in rural areas? They have a community network made of 10 men and 10 women, trained to provide support and solve less severe cases. If this community network cannot address the case, they refer to a “Held Desk” at Chiefdoms. Severe cases are reported to the OSC. Community sensitization is done through this community network, including in schools;
- Capacity: 12 people work at this OSC: paralegal officers, social workers, counselors, a nurse, a clinic officer, a doctor, gender workers on the field, and a data entry clerk. This OSC is the biggest in the project area;
- The OSC offers the same services as the ones met previously;
- This OSC has a vehicle and picks victims up to take them to the OSC whenever cases cannot be resolved by the community network;
- The OSC does not offer shelter for victims.

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MINUTES OF MEETING: YWCA, KASAMA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 2, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	YWCA, Kasama

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- Geoffrey Siame, AECS Coordinator
- Stella S. Kayope, ZESCO Social Scientist



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

YWCA - KASAMA

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
	Kasama		
	KASAMA		
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	KASAMA		
	KASAMA		
	KASAMA		
	KASAMA		

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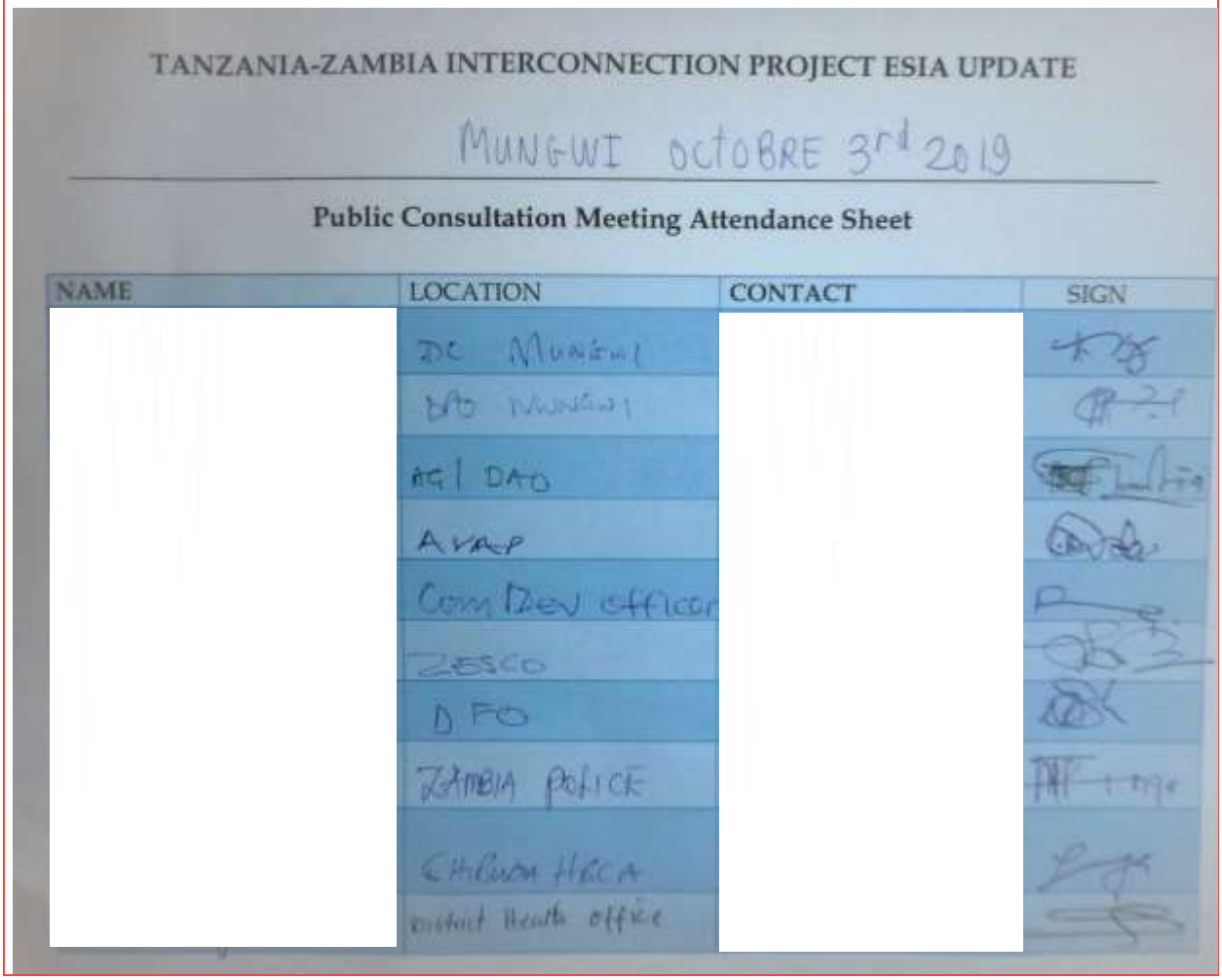
ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan;
- YWCA is running a shelter of 18 beds where victims can stay to escape from violent spouses or family members;
- The shelter has 4 counsellors and 2 paralegal officers (to help with legal cases), however, unlike the OSC they do not offer medical support. They do liaise with the Kasama OSC whenever needed;
- YWCA works in the district and in rural areas;
- YWCA has a GBV program made of:
  - awareness;
  - HIV sensitization;
  - land and property grabbing;
  - work with courts and VSUs, upstream of legal cases;
  - work with the MoG;
  - work with Tas.
- According to general coordinator for the Northern province, confidentiality of victims is often an issue, they work in complete confidentiality for the protection of the victim;
- They detect cases by providing community members with a phone number where victims can call, this phone number is advertised. They also have door to door campaigns to reach women;
- The YWCA owns a vehicle and uses it to remove victims from unsafe environments;
- According to general coordinator for the Northern province,, there are some Chiefs that are proactive in addressing GBV and others who are more resistant;
- According to general coordinator for the Northern province, roads and other linear constructions are GBV vectors.

MINUTES OF MEETING: MUNGWI DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 3, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	Mungwi, DC office

ATTENDEES



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

MUNGWI OCTOBRE 3rd 2019

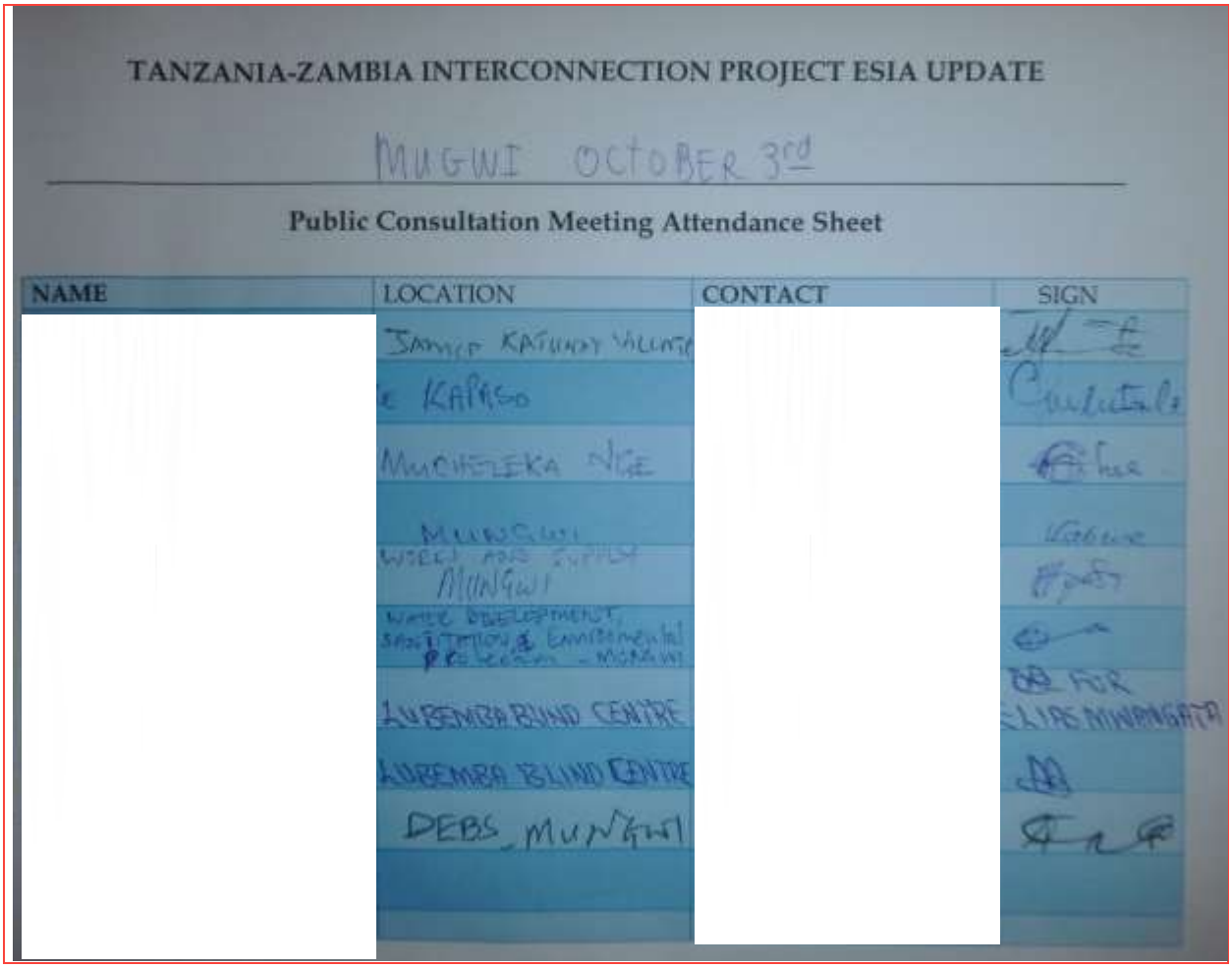
Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
	DC Mungwi		
	DAO Mungwi		
	AG/ DAO		
	AVAP		
	Com Dev officer		
	ZESCO		
	DFO		
	ZAMBIA POLICE		
	Chiluwa HRCA		
	district Health office		

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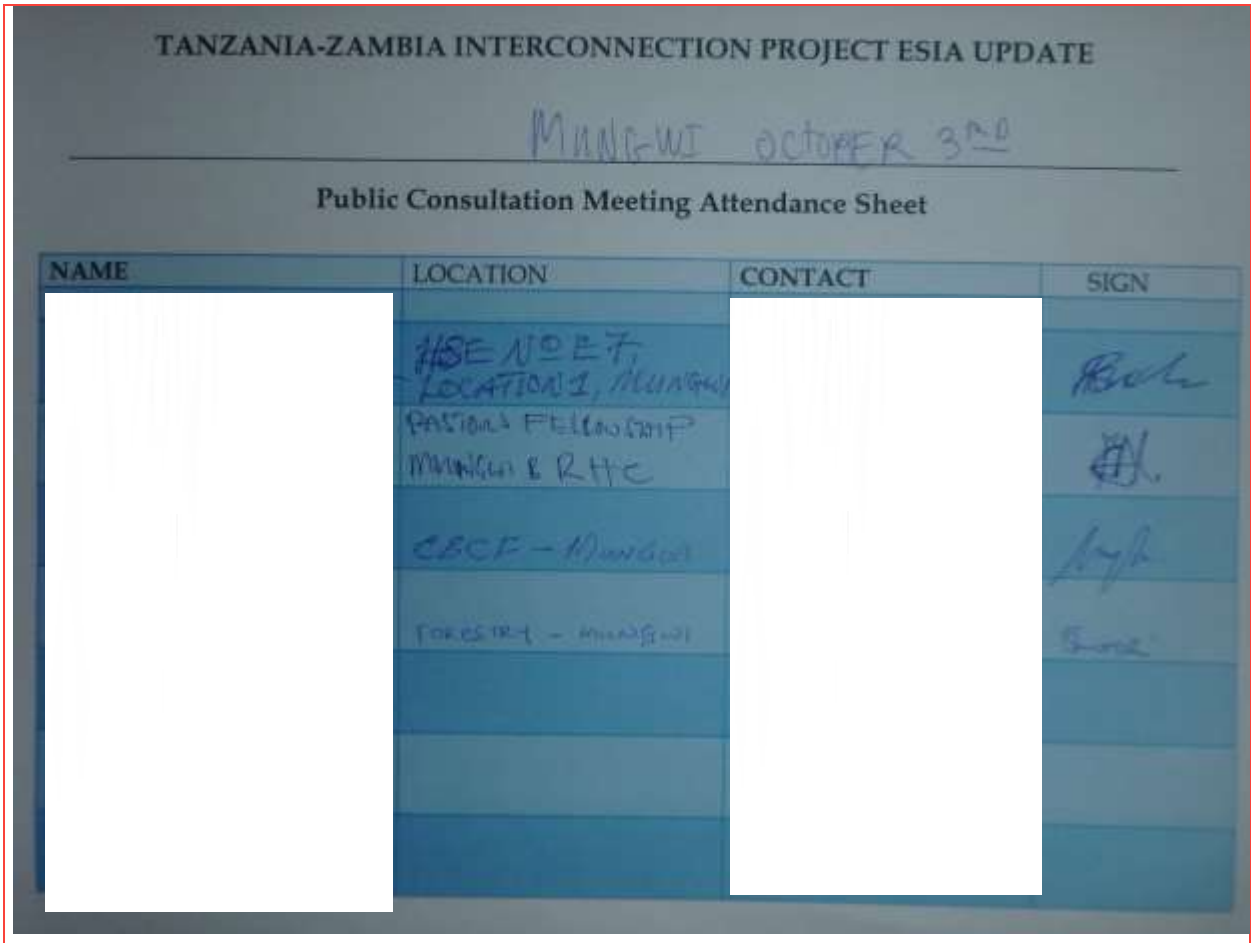


TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

MUGWI OCTOBER 3rd

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
[redacted]	[redacted]	[redacted]	[redacted]



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

MANSA - WI OCTOBER 3RD

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
[redacted]	HSE NO E7, LOCATION 1, MUNGWI	[redacted]	
	PASTORAL FELLOWSHIP MUNGWI & RHC		
	CBCF - MUNGWI		
	FORESTRY - MUNGWI		

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist

In addition, the Kumda DC was met separately prior to the meeting.

ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan;
- A member requested that a project schedule be disclosed to community members, Stella S. Kayope from ZESCO answered that the schedule will be released once the project details are known;
- A member asked if the Ward Development Committee should be involved in dealing with grievances, Eric Deneut mentioned that the scale of work is probably too small to involve such a big committee;
- A person mentioned that there was no physical demarcation along the wayleave;
- A community development officer, which is the gender focal point, mentioned that she is already doing sensitization on the field and that she trained people to help her. In fact, there are focal points in both district and council levels. When there is a case, she goes to the village headmen. Proper capacity building and training was recommended for them so they can act as focal points for the GRM;
- A participant mentioned that it is difficult to detect cases, but some are not regarded as GBV and are accepted;
- A participant mentioned that both prevention and treatment are necessary;
- A participant mentioned that GBV is a typical road-project impact;
- A participant also mentioned that women and girls shall also be sensitized about the risk of GBV when meeting a construction worker (and thinking of engaging in a relationship with the men);
- A member of a local NGO, called Community Based Care Foundation, mentioned that young girls are the most vulnerable because of their poverty and because of the lack of social amenities, they are often very keen in meeting outsiders to take them out of villages. In addition, in fishery areas, there is a link between GBV and the fish ban (when families are faced with hard financial periods, they often push for their young girls to get married). This NGO has 4 permanent staffs, they do awareness programs but nothing more. Child defilement is common, according to this NGO;
- There are no OSCs in this district but there are RHCs (such as the Mungwi Baptist Rural Health Center), this RHC offers counselling to victims and screens for HIV and STDs; and one district hospital. The issue of confidentiality is key and these RHCs and hospitals are not suited to ensure confidentiality (fear of being bullied is also mentioned);
- A participant from the department of health mentioned that an OSC is under construction (and showed it to the consultant);
- A participant mentioned that alcohol leads to GBV;
- A participant mentioned that abused girls usually stop going to school;
- A discussion was engaged on the age of legal marriage. Some participants mentioned that there are two systems in conflict in Zambia: a customary traditional age that corresponds to the age at which a girl is physically mature (but still a minor); and the legal age of marriage from an official perceptive (18 years of age); however, some participants mentioned that the customary system does not allow young girls to marry (even if it does take place);
- According to a member of Caritas, GBV is also a question of social justice. Caritas is doing social justice as well as awareness in communities;

ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)
— A member of the Red Cross requested that NGOs be warned, in advance, of the project so they can start spreading awareness in communities. There is a need for focal points to be local informants in the community. In addition, grass root level sensitization is also necessary; — A participant also mentioned that child registration is necessary to end child marriage; — A person working for an NGO (Lubemba Blind Center) that advocates for blind persons, mentioned that special attention shall be paid to them to keep them informed on the project schedule; — A participant also mentioned that poverty is the source of GBV and lack of education is also a factor; — There are also clubs running in schools to sensitize girls; — Village headmen shall be sensitized on GBV; — Chibuca Home Based Care association (CHBA) is acting in the project area, they do outreach in the agricultural sector; — A participant mentioned that there is a need for a specific project strategy to employ young people during construction; — A participant mentioned that during maintenance there is also a risk of seeing child marriage (and "ZESCO's orphans, as mentioned by a participant); — A participant asked if special assistance would be provided to vulnerable people; — The issue of compensation was mentioned by a participant as, under customary rule, all lands belong to Chiefs and villagers only have user rights. They shall not be compensated for land lost; — Eric Deneut asked if Chiefs assist PAPs in clearing new land, the answer was no they do not; — A participant asked: How can permanently impacted titled land be compensated? The answer from ZESCO was not clear on this topic.

MINUTES OF MEETING: CHIEFTAINESS NAWAITWIKA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 4, 2019
SUBJECT:	Gender-Based Violence and Resettlement	**VENUE:**	Chieftainess Nawaitwika, Palace (close to Nakonde)

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- AECS Coordinator
- Chieftainess

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts, including resettlement;
- Eric Deneut mentioned that this meeting was a courtesy visit;
- Eric Deneut asked about the types of GBV in the study area and ways GBV is addressed in this Chiefdom;
- According to the Chieftainess, this Chiefdom is championing the fight against GBV;
- According to the Chieftainess, the main challenge with Chiefs is that there are two views: those who want to keep the traditional system (where women are disadvantaged) and those who are more progressive and championing the fight against GBV;
- In this Chiefdom, there are community committees offering counselling to victims;
- Some victims come to the Chief directly. In some cases, when the wife is beaten, the Chief provides advice to the men, if the men do not change the Chief refers them to the judicial system;
- The Chieftainess requested that when the construction contractors arrive on site, they meet with the Chieftainess so that she can provide advice on GBV issues and spread awareness on GBV;
- According to the Chieftainess, the number of reported cases is higher here because women dare to speak in this “Chiefdom”;
- The Chieftainess mentioned that some people complained about the fact that they have not received their compensation payment and the fact that the contractor workers are already on site (same case as the one presented at the DC’s office). A site visit to the future substation area confirmed this information: workers are already on site;
- The Chieftainess requested a local content plan to provide work for community members.

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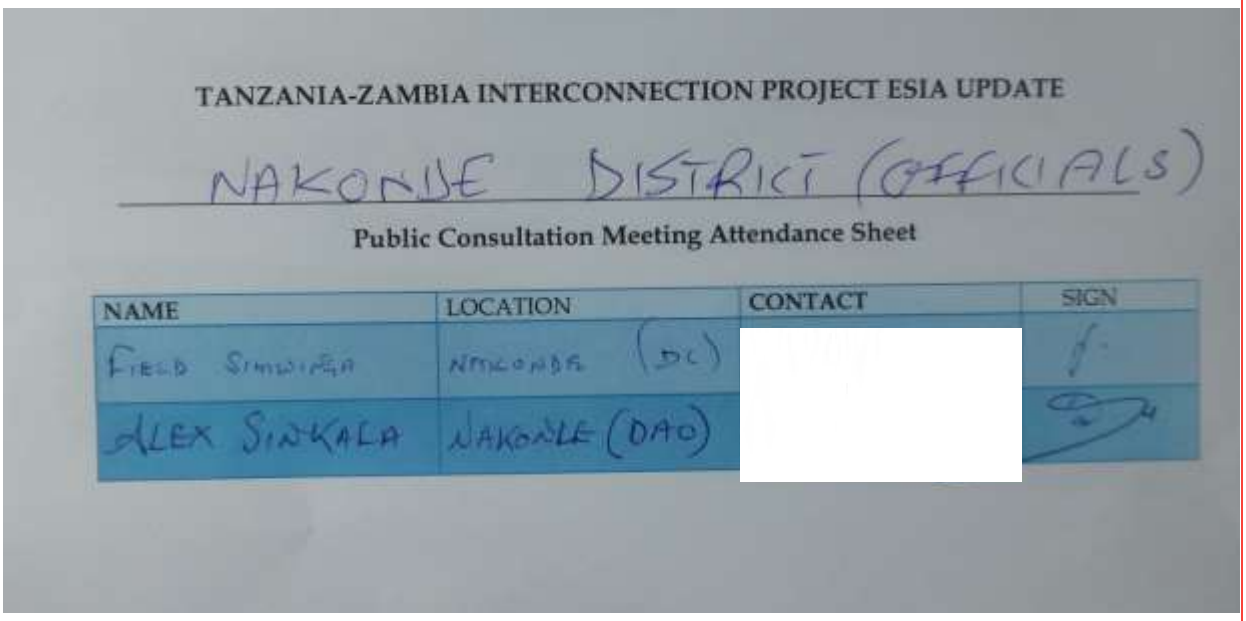
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MINUTES OF MEETING: NAKONDE DISTRICT

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 4, 2019
SUBJECT:	Gender-Based Violence, Grievance Redress Mechanism, and Resettlement	**VENUE:**	Nakonde, DC office

ATTENDEES



TANZANIA-ZAMBIA INTERCONNECTION PROJECT ESIA UPDATE

NAKONDE DISTRICT (OFFICIALS)

Public Consultation Meeting Attendance Sheet

NAME	LOCATION	CONTACT	SIGN
FIELD SIMWINGA	NAKONDE (DC)		
ALEX SINKALA	NAKONDE (DAO)		

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist

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ITEMS DISCUSSED (DURING BOTH MEETINGS WITH THE DC AND WITH STAKEHOLDERS)

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan;
- Discussions pertaining to the project and its impacts were engaged by the DC who mentioned that the Nakonde substation construction started despite the PAPs not having been compensated yet. The DC showed the compensation sign-offs which dated from a year ago. A contractor has already cleared a piece of land in Chitamba. The grievance has reached the DC office. The DC mentioned that when compensation sign-offs are a year old and compensations are not paid, PAPs are affected by the recent strong devaluation of the Kwacha;
- The DC reminded everyone that all compensations are to be paid prior to the beginning of work;
- ZESCO Social Scientist reminded everyone that the ZESCO policy does not allow work to start prior to compensation payments (*later it was confirmed on the ground that work did in fact start*);
- The DAO is also the Gender Focal Point (as in all districts). The role of this focal point is to coordinate all GBV related activities and service providers in the district. They set meetings every quarter, or whenever needed, with service providers who come to their office;
- The OSC coordinates their work with VSU;
- According to the focal point, the main GBV issues in the area are:
  - land ownership: women are disadvantaged;
  - early marriage and school drop-outs;
  - the practice of forced marriage is less important here;
  - polygamy is well accepted and, according to the DAO, does not lead to GBV;
  - this town being a border town, and there is a lot of GBV and prostitution, there is an influx of young people looking for opportunities and many girls end up in prostitution;
  - the future camp site for the transmission line and the substation will most likely lead to GBV.

MINUTES OF MEETING: ONE-STOP CENTER, NAKONDE

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 4, 2019
SUBJECT:	Gender-Based Violence	**VENUE:**	OSC, Nakonde

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ESCO Social Scientist
- OSC Coordinator

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts;
- Eric Deneut asked about the types of GBV in the study areas and the typical GBV during construction work;
- Eric Deneut engaged in discussions regarding the possible ways to implement a GRM and a GBV action plan and discussed the way OSCs function;
- Eric Deneut: how do you address cases when they happen in rural areas? They spread awareness and they implemented a group network made of GBV survivors. They detect GBV through Rural Health Centers (RHC) where posts advertising the fight against GBV are shown at the entrance. In RHC, staffs have been trained there to address GBV. There are also local informants from the community (women informants' networks) who help the OSCs in detecting victims. However, although the OSCs own a vehicle, it is used by other departments and there is no money for fuel;
- In terms of staffing, the OSC has all the staff required: councillors, paralegal staff, medical staff, volunteers, and data entry clerks;
- There are no fast-track courts;
- Confidentiality is key in respecting the victim;
- Earthly awareness is also important;
- OSCs do not offer shelter for victims but certain churches do.

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MINUTES OF MEETING: CHIEF CHIKWANDA

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	October 5, 2019
SUBJECT:	Gender-Based Violence and Resettlement	**VENUE:**	Chief Chikwanda, Palace (close to Mpika)

ATTENDEES

- Eric Deneut, Social Specialist, WSP
- Social Specialist, AECS
- AECS Coordinator
- ZESCO Social Scientist
- Chief

ITEMS DISCUSSED

- Eric Deneut presented the project and its impacts, including resettlement;
- Eric Deneut mentioned that this meeting was a courtesy visit;
- Eric Deneut asked about the types of GBV in the study area and ways GBV is addressed in this Chiefdom;
- According to Chief , this Chiefdom is championing the fight against GBV. The Chikwanda Chiefdom, and GBV and Child Protection Association, were created in 2010;
- According to Chief , there are 200 village headmen participating in anti-GBV associations. Zones are created including several villages, one coordinator is designated at each zone to detect GBV. Chief has implemented anti-GBV courts in each zone including a higher court to address serious cases.
  Eric Deneut remark: customary courts are not applicable for foreign workers or people from outside the "Chiefdom";
- According to Chief the main action to address GBV is to remove young girls from marriage and reintegrate them in the schools;
- According to Chief when a village headman is involved in GBV he is removed from his functions;

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ITEMS DISCUSSED
— Chief has implemented a Land Development Trust to administer land. In cases of resettlement, the village headman identifies available land for displaced households, and the Land Development Trust allocates the land. Many PAPs are not capable of searching for land and or building houses, and the Land Development Trust helps them. This Land Development Trust also finances anti-GBV measures and asks people who wish to obtain a land to adhere to the anti-GBV principles; — Chief believes that some people do not put their compensation money to good use, the Chief provides guidance to PAPs.

2019 SOCIAL SURVEY NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project	**DATE:**	September 30 to October 4, 2019
SUBJECT:	Gender-Based Violence and Resettlement		

PARTICIPANTS

- Dr. Mitulo Silengo, Social Specialist, AECS
- Gender Specialist, AESC
- ZESCO Social Team
- Community Members (focus groups with women and men)

SURVEYED VILLAGES

UTM Coordinates	Village
35 L 0223065 8558356	Mambwe Kasapato
36 L 0322194 8689816	Malambwa Village
36 L 0308021 8732216	Litumba Farm, Kanchibiya
36 L 0291017 8775782	Mulayamba
36 L 0296720 8649249	Nkuka
36 L 0296394 8648614	Mukonkotela
36 L 0301622 8659386	Kasenga Farms

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Montréal, QC H3H 1P9
Canada

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wsp.com

SURVEYED VILLAGES	
UTM Coordinates	**Village**
36 L 0301577 8871075	Chandamukulu
36 L 0294735 8802633	Chandamukulu
36 L 0294773 8803049	Chandamukulu
36 L 0294916 8803707	Chandamukulu
36 L 0310865 8873584	Mupapa
36 L 0310900 8873593	Chalali
36 L 0302243 8863140	Chaiwila
36 L 0319337 8881063	Masela
36 L 0473259 8968262	Katete
36 L 0437537 8971240	Kasakalawe

MINUTES OF DISCUSSION

1.What are the perceived impacts for women during resettlement and compensation pay-off?

- The distances from where women draw water will increase;
- There will be loss of property and fruit trees e.g. mangoes and guavas;
- There will be loss of family relations because of distance and the beginning of new lives in new places;
- There is also the fear of not having enough food because certain fields will stay behind after moving e.g. cassava;
- There will also be loss of ancestral land and the fear of not securing land to inherit for our children.

a-If compensation is paid in cash, are you afraid that this may affect your family?

- If compensation is paid in cash some men may run away with the money or misuse it. It also depends on how the married couple relates to each other. Some get on well, so they will use the money together;
- There may be family breakups. Some husbands will look for other women because they have moved to another place where they will join another community;
- Fear of being left without a house for some time if the money is misused.

And if compensation is paid in cash, can you explain what should be done to avoid unwanted situations?

- The families need to sit down and decide how the money is to be used. The communities need to be sensitized on how to use this money. e.g. building a house first and the remainder of the money can be used for fertilizer and the business.

b-If you are a female head of household, can you explain how resettlement will affect you because of your sex or social status?

- Women we will be affected much more because of the distance they will travel to draw water; and get to a clinic and/or church;
- Some women occupy plots they bought in the past which means looking for other plots to buy, which may be difficult;
- For single women, some family members may use the situation to inherit a house/plot because they helped them build the house in the past.

2. What are the perceived impacts for women during construction?

- There is fear of losing their children because of unwanted pregnancies;
- Women may be abused by their husbands and even by contract workers.

a-What would you recommend to protect women from gender-based violence?

- Parents will need to discipline their children (especially the girls);
- It may be difficult to protect women because they are poor, so there will be conflict in homes;
- Community leaders should be close, to help communities in this situation. Community workers should be available to talk to contract workers and the police should be available to arrest those with bad conduct.

MINUTES OF DISCUSSION

b-When a woman is a victim of gender-based violence, where can she turn to find support and counselling, and medical care?

- To the families;
- To the Community Crime Prevention Unit (CCPU) or to the police;
- Girls in school can report to teachers who have done Guidance and Counseling;
- Women can also report to the Chief or village counsellors;
- The church may also help in those situations.

c- Is there any organization that helps women to overcome everyday challenges?

- Women answered that the following organizations provide help: YWCA, Chiefs, CCPU, VSU;
- Teachers who have done counselling and guidance.

3. Men and women (perceived risks)

a- If you have a grievance who do you turn to?

- To the Chief, and if not satisfied, to the District Commissioner.

b- Have you heard about the project?

- Communities have heard about the project. It will bring electricity.

c- What are the main challenges with resettlement?

- The problem is to move from a place we are used to and getting used to another place;
- There may be loss of livelihoods, especially those who depend on gardening in areas where water is available throughout the year;
- The money given may not be enough to change their lives;
- Polygamists have issues regarding sharing the compensation with other wives (there is risk of conflict for polygamist households);
- One case was a widow who lives with her daughter who is also a widow: family of the deceased spouses are trying to grab the land from the widows, moving will be a good thing because they are intimidated by them.

d- Do you have a bank account? Does your wife have access to this bank account?

- Most people do not have bank accounts. The money is just kept in the house to avoid deductions from the bank;
- Bank accounts will be opened when the money is given;
- According to interviewed men, their wife will have access to money in the account.

4. Vulnerable people (elders, orphans, and the physically challenged)

a-What is the main concern regarding the resettlement process?

- For older people starting fresh will be a big challenge despite receiving compensation payment (resettlement is stressful and physically challenging);
- Family members usually help in building a house for elderly parents;
- Orphans are usually kept under the care of the family.

MINUTES OF DISCUSSION

b-If compensation is paid in cash, are you afraid this may affect your situation?

- The cash compensation will not affect the families who will sit down together to decide how the money will be used;
- Some families may breakup and divorced because the money may change their choices.

5. Calendar of vulnerability for all people

- Almost half of the year, people struggle to feed themselves, to pay school fees, or buy fertilizer, and yet they work very hard;
- Women's work load is heavier than men's workload, as during daytime they work in the field and at the same time are doing house chores. They work from dusk to dawn.

See calendar on last page.

PICTURES





Table 1 Calendar of Vulnerability for All People

	January	February	March	April	May	June	July	August	September	October	November	December
Activities (harvest, land preparation etc.)	– Planting sweet potatoes and beans – Weeding maize and applying fertilizer	– Planting beans – Weeding maize	– Weeding maize fields	– Harvesting beans planted in November – Weeding and planting cassava	– Harvesting pumpkins and beans, or food available from field	– Harvesting maize – Selling maize crops	– Harvesting maize – Selling maize crops	– Preparation of new fields and Chitemene	– Arrangements of buying fertilizer	– Receiving fertilizer from cooperatives	– Cultivation and planting of maize – Harvesting caterpillars	– Cultivation and planting of maize
Main challenges faced	– Hunger situation – Stress over school fees	– More hunger – High labour demands for weeding	– Hunger not enough food – High labour demands for weeding	– More demand for labour during harvesting	– More demand for labour during harvesting – Paying for school fees for second term	– Looking for market to sell maize	– Looking for market to sell maize	– Challenges of marketing produce	– completion of school fee payments – Coughs	– Finding matching fees to obtain fertilizer from cooperatives	– Diarrhea – Malaria disease on the rise	– Diarrhea – Malaria disease on the rise – Less food available for family consumption
How do you overcome these challenges?	– Find piece work – Sell some livestock	– Find piece work – Sell some livestock	– Exchange maize for help with farm work	– Exchange maize for help with farm work	– Borrow money from village banks	– Vegetable gardening – Vending in household food products	– Selling crops	– Selling crops	– Selling crops	– Sell maize to buy fertilizer	– Sell caterpillars to raise cash	– Find piece work to buy food

APPENDIX

7-10 ZTK II CONSENT LETTERS

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No..CUSTOMARY.....LAND.....

I acknowledge receipt of your letter reference. A440/ESU/ZTK...II/..2019.....
Date.23/05/2019. and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed.:.....
Owner/ Leaser/ Occupier

NRC/Passport N

REPUBLIC OF ZAMBIA
IMITI LOCAL AREA
23 MAY 2019
CHIEF NKOLEMFUMU
P. BOX 410244, KASAMA

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No……..
Property No…CUSTOMARY LAND……..

I acknowledge receipt of your letter reference…A140/ESU/ZTK II/2019…….. Date.23/05/2019…. and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed……
Owner/ Leaser/ Occupier

NRC/Passport No:

OFFICE OF THE QUEEN MOTHER
[illegible] ROYAL ESTABLISHMENT
23/05/2019
HER ROYAL HIGHNESS CHANDA MUKULU VII CHISUNDU LOCAL AREA P/B KASAMA.

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No...CUSTOMARY LAND.....

I acknowledge receipt of your letter reference....A140/7TK II 330 KV OHL/ESU/209
Date.05/03/2019. and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed.....
Owner/ Leaser/ Occupier

NRC/Passport No:

REPUBLIC OF ZAMBIA
CHIEF MAKASA
DATE 05-03-19
OWN MUSUMBA
MAKASA SUB POST OFFICE
V. MAKASA

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....NAKONDE DISTRICT.....
Property No.....CUSTOMARY LAND.....

I acknowledge receipt of your letter reference ANP/ZTK II 330 KV OHL/ESU/2019 Date 13/03/2019 and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed..... EVES SIAME
Owner/ Leaser/ Occu

NRC/Passport No

NKH CHIEFTAINESS WATTWIKA
OWN MUSUMBA
2019 -03- 13
P.O. BOX 4300183
NAKONDE

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No..CUSTOMARY LAND.....

I acknowledge receipt of your letter reference..A140/27KII 330KV BHL/ESU/299
Date..20/02/2019... and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,
HUMPHREY S CHITUPILA
Signed..CHIEF MAILO.....
~~Owner~~/ Leaser/ ~~Occupier~~

NRC/Passport No:

REPUBLIC OF ZAMBIA
MINISTRY OF CHIEFS & TRADITIONAL AFFAIRS
25 FEB 2019
HIS ROYAL HIGHNESS
CHIEF MAILO OWN PALACE
P.O. BOX 850017, KANONA SERENJE.

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No……..
Property No……..

I acknowledge receipt of your letter reference. A140/ZTK.II.330KV OHL/ESU/2009
Date 02/03/2009.... and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed……c/s……
Owner/ Leaser/ Occupier

NRC/Passport No

CONDITION GIVEN UPON BUILDING THE NEW STRUCTURES

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No..CUSTOMARY LAND.....

I acknowledge receipt of your letter referen HL/ESU/2019
Date.21/02/2019... and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed.....
Owner/ Leaser/ Occupier

NRC/Passport No:

REPUBLIC OF ZAMBIA
MINISTRY OF CHIEFS & TRADITIONAL AFFAIRS
21 FEB 2019
PRIVATE BAG MPUMBA
CHIEF MPUMBA'S OWN MUSUMBA
P.O. BOX..... MPIKA

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No...CUSTOMARY...LAND.....

I acknowledge receipt of your letter reference...A140/ZTK II 330KV OHL/ESU/2019 Date.22/02/2019... and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed.....
Owner/ Leaser/ Occupier

NRC/Passport No:.

IMPUKI NO MUMBUBU
CHIEF MPEPO
-22. FEB 2019
MPIKA

TO PART II

ZESCO Limited,
Environment & Social Affairs Unit
P. O. Box 33304
LUSAKA

Dear Sir,

SURVEY & ERECTION OF ELECTRICITY LINES SHOWN ON DRAWING No.....
Property No..CUSTOMARY..LAND.....

I acknowledge receipt of your letter reference..AHO/ZTK II.330KV.OHL/ESU/2019 Date..20/02/2019... and as Owner/ Leaser/ Occupier, I give the necessary permission to carry out the work as detailed in your letter.

Yours faithfully,

Signed.....
Owner/ Leaser/ Occupier

NRC/Passport No ..

REPUBLIC OF ZAMBIA
CHIEF KABAMBA'S PALACE
20 FEB 2019
P.O. BOX 850013,
SERENJE-ZAMBIA

APPENDIX

7-11 MINUTES ROUND 7

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Project Overview and Resettlement Impacts	**DATE**: April 15, 2024	
VENUE:	Kasama District Commissioner Office	**TIME:** 10 am	

ATTENDEES	
Name	**Organization**
Ms Annie Paul	District Commissioner (DC)
	District Administrative Officer (DAO)
	WSP
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT • Discussed the purpose of the visit to the Region and the changes to project design. Gave an overview of the schedule to be followed by the team during the week. • Routing aspects were discussed, supported by a map. • New field studies are planned for the updated ESIA and RAP. These were discussed, and some indication of the timing was given. • DC welcomed the team. She said that she had received complaints about compensation that had not been paid. From ZESCO discussion it appears that this was a complaint from one of the 55 households in the area between the Kasama substation and where the wayleave will cross the Kasama Mpika Road. This is an ongoing issue where people have indicated that they changed their land use – with permission of Traditional Authority – from agriculture to resident and as such are due compensation for land. ZESCO have agreed and are busy with the compensation process. ZESCO indicated that some of this was potentially opportunistic but since the previous chief is deceased and the current chief is not fully up to speed with the decision his predecessor made this is not easy to prove. Further discussion with the DC resulted in her indicating it was only a single complaint. DC emphasised the need to keep communicating with the households as she was not happy with being confronted with complaints. • DC is new in the job and would not comment on the degree to which the integrity of the wayleave that was declared by ZESCO had held. • DC said that other than the single complaint no other households had been in contact with her asking for compensation related assistance. • DC said that the Integrated Development Plan (IDP) is current and prepared for period 2023 for 2028. DAO said he would supply a soft copy.	N/A DAO to provide IDP

ITEMS DISCUSSED	ACTION BY
• There are no major projects in the district at the moment. There are some World Bank funded road upgrade projects that are ongoing. There are some agricultural projects that are being developed but she seemed to have little insight into exactly what these would entail. • DC had an urgent additional meeting to attend so terminated the meeting.	

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Role of Department Agriculture Kasama in ZTIP	**DATE:**	April 15, 2024
VENUE:	Kasama Dept Agriculture Offices	**TIME:**	4 pm

ATTENDEES	
Name	**Organization**
Mr Francis Mutali	District Agricultural Officer
	WSP
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 • PRESENTATION OF PROJECT • Discussed the purpose of the visit to the Region and the changes to project design. Gave an overview of the schedule to be followed during the week. • Changes in the routing were discussed, supported by a map. • New field studies are planned for the updated ESIA and RAP • The Department had been involved in the valuation process for ZESCO. Their technical office has conducted valuation of economic trees- mostly fruit trees- on household land that would be required for the wayleave. A report was produced for ZESCO but the team present in the meeting were not very familiar with the contents of the report. • When pressed to give details on how the valuation was undertaken it appears as if a standard value per tree is used that is based on market research and this is multiplied by the remaining productive years of the tree to generate a value. The Department said that people were happy with the values that they had developed and there had been no complaints. • The department could not be drawn on exactly how the base that is applied as an annual input value was determined. • Most of the trees in the area are Mangoes followed by Oranges, Bananas and Guava. • They will share the details of their valuation method.	Dept. Agric Kasama to share details of valuation method

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Land Acquisition for ZTIP	**DATE:**	April 15, 2024
VENUE:	Lands Department Offices Kasama	**TIME:**	3 pm

ATTENDEES	
Name	**Organization**
	District Lands Officer
Greg Huggins	WSP
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
• Discussed the purpose of the visit to the Region and the changes to project design. Gave an overview of the schedule to be followed during the week. • Changes in the routing were discussed, supported by a map. • New field studies are planned for the updated ESIA and RAP. • Mr said that the Lands Department acted under the auspices of the Land Act. They are primarily involved in issues with Land under title or in conversion of land to title. • They have not – to date – interacted with any of the project affected parties for the proposed project as none of the land, as far as they are aware is under title. Land is predominantly under customary/traditional authority in the project area. • The issue of the wayleave and the easement was discussed and the way in which compensation for land in both titled and traditional areas was explained in some detail. The process is to pay only for land when it is under title or where the land has been converted from predominately agricultural use to residential use. The Lands Department was asked for its opinion regarding the compensation process being paid. The Lands Department concurred with the approach and remined ZESCO that in fact all land is held by the President and even land under title is leased. • The Lands Department indicated that ZESCO was not registering the land that they had compensated and that this was a risk. ZESCO agreed that land under wayleave should be demarcated and registered as a matter of urgency. All agreed that not doing so was likely to lead to encroachment that was difficult to control. ZESCO agreed that this had probably already happened. • The Lands Department thought that outright acquisition of land rather than easement might be a preferable option, but the ZESCO team said that this would preclude person from practising agriculture in the wayleave and this would be a hardship as well as expensive for ZESCO to acquire. The Lands Department was still of the opinion that as this was a State Project and land is under the auspices of the President then exploring this as an option should take place.	N/A

ITEMS DISCUSSED	ACTION BY
• The issue of acquisition of permanent land take for pylons was discussed. The Lands Department agreed that for titled land, compensation should be paid for land value. They did not have a fixed position on whether the pylon area should be compensated for in land held under customary tenure but conceded that this might be a better option than no compensation at all.	

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Role of Department Social Welfare Kasama	**DATE:**	April 15, 2024
VENUE:	Department Social Welfare Office Kasama	**TIME:**	1 pm

ATTENDEES	
Name	**Organization**
	Kasama Chief Social Welfare Officer
Greg Huggins	WSP
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 MINUTES • Discussed the purpose of the visit to the Region and the changes to project design. Gave an overview of the schedule to be followed during the week. • Changes in the routing were discussed, supported by a map. • New field studies are planned for the updated ESIA and RAP. • Social Welfare has been involved with the project. They have worked with the Project Affected person in counselling them regarding how to spend their compensation properly. • This counselling seems to have been restricted only to the Kasama District and potentially only to the 8km stretch running from the substation. The other Districts have not had the same instruction of providing counselling from the Social Welfare Department and as such the same level of effort has not been applied. • Social Welfare indicated that where they had been involved the counselling and financial management training was well received. • There have been no complaints to the Social Welfare staff regarding the amounts paid. • There have been no approaches from people that may be determined as vulnerable for additional assistance with the compensation process. • Mr. X indicated that he had an experience with some elderly people who had their cash appropriated by grandchildren. Elderly people do not always have the ability to control their cash as they are not as enumerate as their grandchildren and they are taken advantage of. Trying to rectify the situation is very challenging. • They do not do a follow up of the way in which cash is used, their mandate is only to do counselling and then some financial training.	N/A

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Project Overview and Resettlement Impacts	**DATE:**	April 16, 2024
VENUE:	Mungwi District Commissioner Office	**TIME:**	10 am

ATTENDEES	
Name	**Organization**
	District Commissioner (DC)
	District Administrative Officer (DAO)
	Dept Agriculture
	Town Council
	Lands Department
	Resettlement – Vice presidents Office
Greg Huggins	WSP
	ZESCO Head Office
	Social Welfare
	ZESCO Head Office
	Forestry Department
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 DISCUSSION • Discussed the purpose of the visit to the region and the changes to project design. Gave an overview of the schedule to be followed by the team during the week. • DC welcomed the team and indicated that they had hopes that the project would be completed soon as it is critical to secure energy supply in the area. DC indicated that he was new appointment so was not familiar with many details of the project. • Routing aspects were discussed in some detail, supported by a map. The fact that a wayleave had been declared and compensation for structures in the easement has been paid was emphasised. • New field studies are planned for the updated ESIA and RAP. These were discussed, and some indication of the timing was given. • The DC indicated that he had not received any complaints about compensation and as far as he was aware no one in his offices had been approached with complaints. • The Resettlement Offices asked about the security of the wayleave as the works in terms of compensation was done some time ago. He felt that some of the people would have moved back. It was agreed that this was likely. The DC said that the police should be involved in	N/A

ITEMS DISCUSSED	ACTION BY
making sure that this did not happen. ZESCO said that the need to have the audit of the line and to see how much encroachment had taken place was planned. • The Resettlement Office summarised their role and indicated that they had not been involved in the project but were happy to assist as they had some (limited) experience in undertaking resettlement surveys of projects (work with ZESCO in 2017). They emphasised that most of their work was with voluntary resettlement projects where people looking for land were matched with tribal land that was available. This was done following a need and availability assessment and essentially tries to match up landless people with agricultural projects that can be established in customary land areas. They had limited experience with involuntary resettlement but were happy to assist if they were needed. They would need to be compensated for costs that they incurred and per diems. The Resettlement Officer also indicated that he had not received any complaints about compensation. • The Agricultural Officer said that they had not been involved to date. ZESCO said that they would be looking to the Agricultural Department to come up with assistance in valuing trees that have economic and agricultural value (mostly fruit trees) in the RoW. The Agricultural Officer indicated that they would use a market-based survey to come up with rates and had used this method in the past. The method is based on looking at the species and number of remaining productive years and then valuing the amount of produce that would be produced per year. Government rates were consulted but were usually adjusted to reflect market trends as these rates were usually out of date. • The Forestry Department indicated that they would also be available to assist in the valuation of timber trees and used a market-based approach based on value of timber. • The Social Welfare Department indicated that they had not been involved to date and had no feedback from project affected people who might be vulnerable or anyone who had complaints. They were happy to assist with counselling. ZESCO indicated that the Kasama Office as a regional office had been involved but had only worked in the Kasama district to date. • The DC said that their offices were prepared to help in sensitization meetings going forward and in particular in meetings with traditional authorities. The importance of having the Chiefs on board was emphasised. • DC said that no Integrated Development Plan (IDP) was in place but it is being drafted at the moment. • There are no major projects in the district now. There are some World Bank funded road upgrade projects for rural connectivity that are ongoing. There is also a rural development initiative for sustainability in the face of climate change. • There are no notable private sector projects in the district at the moment although some limited investment in agriculture is taking place. • ZESCO emphasised that there was a need to look at community forests and the project impact on these forests and as such to undertake a bio-mass assessment. It was agreed that this was likely to be an issue in the area. • The DC thanked all who attended and closed the meeting.	

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Protocol meeting to discuss ZTIP programme	**DATE:**	April 15, 2024
VENUE:	ZESCO Northern Region Office, Kasama	**TIME:**	9 am

ATTENDEES	
Name	**Organization**
	Senior Regional Manager - Northern Region, ZESCO
Greg Huggins	WSP
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 PRESENTATION OF PROJECT UPDATE • Project Protocol meeting – Discussed the purpose of the visit to the Region and the changes to project design. Gave an overview of the schedule to be followed during the week. Director welcomed the team and said he was pleased to see movement on the project as they had long been waiting for it to start up again. Question whether the issue of the project affected households on the 8km stretch from sub-station to Mpika Road have been resolved. Tito indicated it was still being sorted out.	N/A

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	ZESCO		
PROJECT:	Zambia Transmission Interconnection Project (ZTIP)	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Project Overview and Resettlement Impacts	**DATE:**	April 17, 2024
VENUE:	Nakonde District Commissioner Office	**TIME:**	10 am

ATTENDEES	
Name	**Organization**
	District Commissioner (DC)
	District Administrative Officer (DAO)
	Dept Agriculture
	Town Council
	Public Infrastructure and also representing Lands
Greg Huggins	WSP
	ZESCO Head Office
	Social Welfare
	ZESCO Head Office
	Forestry Department
	ZESCO Head Office
	ZESCO Head Office

ITEMS DISCUSSED	**ACTION BY**
1 DISCUSSION • Discussed the purpose of the visit to the region and the changes to project design. Gave an overview of the schedule to be followed by the team during the week. • DC welcomed the team and indicated that they had hopes that the project would be completed soon as it is critical to secure energy supply in the area. DC indicated that he was new appointment so was not familiar with many details of the project and sked for a full briefing on the route. • Routing aspects were discussed in some detail, supported by a map. The fact that a wayleave had been declared and compensation for structures in the easement has been paid was emphasised. • ZESCO also presented an overview of the compensation process followed for the route. • It was stated that new field studies are planned for the updated ESIA and RAP. These were discussed, and some indication of the timing was given. • The DC asked about the benefit to Zambia. The benefits of the line as an interconnector that could transmit energy from multiple sources and provide energy security was explained. • The DC said that he was new in the office and indicated that he had not received any complaints about compensation and as far as he was aware no one in his offices had been approached with complaints.	N/A

ITEMS DISCUSSED	ACTION BY
• The DC said that there are no major projects in the area that could form part of a strategic or cumulative impact assessment. The most notable projects are associated with trying to modernise and ease the chronic congestion at the border crossing and to fix the roads. Road projects include the Nakonde to Mpika road that was deteriorating as well as Nakonde to Mbala Road. He said that the Mbala road is only a few years old but was built by the Chinese and is already starting to break up. • There are no notable private sector projects in the district at the moment although some limited investment in some mining projects that are starting up in the eastern part of the district and are largely for precious stones. These are however fairly small scale in nature. • The Integrated Development Plan (IDP) is from 2023 and is available. DC said that the District Administration Officer would make a copy available to ZESCO. • The Agricultural Officer said that they had not been involved on the wayleave to date, but he had done some valuation works for the rural energy programme as well as road projects. Some of these were to World Bank standards. ZESCO said that they would be looking to the Agricultural Department to come up with assistance in valuing trees that have economic and agricultural value (mostly fruit trees) in the RoW. The Agricultural Officer indicated that they would use a market-based survey to come up with rates and had used this method in the past. The method is based on looking at the species and number of remaining productive years and then valuing the amount of produce that would be produced per year. Key species are Oranges and other citrus as well as Avocado and Mango. • The Social Welfare Department indicated that they had not been involved to date and had no feedback from project affected people who might be vulnerable or anyone who had complaints. They were happy to assist with counselling and currently had some expertise with counseling people on how to use cash that they had received for aspects such as compensation. They could also offer financial planning advise. • The Forestry Department indicated that they would also be available to assist in the valuation of timber trees and used a market-based approach based on value of timber. • The Public Infrastructure/ Lands Department said that they had not been directly involved in the project but had seen the ESIA and had been at public meetings when the project was discussed. • The Council member also indicated that he had been part of ESIA discussions, and they had commented to NEMC on the document but were not made aware of any of their comments being included in the final version. • The Public Infrastructure/ Lands Department said that they were aware of the wayleave but could not see where it had been demarcated. ZESCO indicated that it had not been demarcated and the meeting agreed that this was a risk as there was sure to have been encroachment. • The need for appropriate sensitization of the project was emphasised by the Social Welfare Department. The DC said that their offices were prepared to help in sensitization meetings going forward and in particular in meetings with traditional authorities. The importance of having the Chiefs on board was emphasised. • The DAO wanted to know what level of Corporate Social Investment could be expected form ZESCO for the project. ZESCO stated that there was usually some investment, but it was too early in the process to say what this would entail and how it would be spent. The DC asked whether the World Bank would be prepared to fund corporate social investment projects in the area. It was explained that this is not the role of the Bank and the role that the Bank is playing was discussed.	DAO to provide a copy of IDP.

ITEMS DISCUSSED	ACTION BY
• The Social Welfare department wanted to know if people who did not agree to being compensated would be evicted. ZESCO indicated that this was not their preferred way of dealing with these issues but ultimately as this was a state project the law did allow for eviction. This was however almost never used as a strategy. • Forestry and ZESCO discussed the need to do a bio-mass study and calculate loss in the wayleave. • The DC thanked all who attended and closed the meeting.	

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref:**	CA0027197.7329
SUBJECT:	Stakeholder Engagement Meeting with the Chitambo District Forestry Officer	**DATE:**	28.05.2024
VENUE:	Serenje District Forest Department Offices	**TIME:**	12:30hrs

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultant
	African Mining Consultant
	Chitambo Forestry Department

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to update the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental	

ITEMS DISCUSSED	ACTION BY
and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) Encroachments in forest reserves • The African Mining Consultant mentioned that the project corridor will encroach 30.71km of Kanona Forest Reserve in Serenje and Chitambo District, 0.32km of Amenshi Forest Reserve, 2.86km of Kasama Forest Reserve and 4.43km of Nkole Mfumu Forest Reserve in Kasama District, 3.23km of Chitimukulu Forest Reserve and 0.43km of Mungwi Forest Reserve in Mungwi District. The project has proposed to reforest a total of 80 hectares for the entire project to compensate for the trees which will be lost. Reforestation in each affected district will be conducted in collaboration with the local forest department and the local communities. The local forest departments will facilitate the growing and planting of tree seedlings preferably the same species which will be lost. The reforested areas will be maintained by the project for 5 years and will be monitored for the next 10 years to ensure that the trees get well established. • Chitambo Forestry Department asked if the project will also pay for the trees which will be lost in Kanona Forest Reserve. The African Mining Consultant asked Chitambo Forestry Department to guide and added that the project has proposed to reforest 80 hectares to be distributed among the affected districts in collaboration with the local forest departments and the local communities. Chitambo Forestry Department mentioned that the standard procedure is that after the biomass assessment is done, the department has to issue an invoice for the project developer to pay the determined stumpage value. • The African Mining Consultant asked the Chitambo Forestry Department if the department can grow the seedlings for the proposed reforestation activities. The Chitambo Forestry Department responded that currently the department has limited manpower but can make arrangements when the project starts. • The African Mining Consultant asked if people have encroached on Kanona Forest Reserve. the Chitambo Forestry Department responded that a lot of people have encroached Kanona Forest Reserve and some of them have lived there for several years. **Concerns, expectations, questions** • No other concerns or expectations were raised	

PHOTOS





SIGNATURES

See attached register of signatures.

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder Engagement	**DATE:**	25.05.2024
VENUE:	Kanchibiya Town Council	**TIME:**	11:30hRS

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultants
	African Mining Consultants
	Kanchibiya Town Council
	Kanchibiya Town Council
	Kanchibuya Town Council

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. the African Mining Consultant emphasised that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for	

ITEMS DISCUSSED	ACTION BY
approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. the African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Kanchibiya Town Council asked about employment opportunities. the African Mining Consultant responded that unskilled and skilled job opportunities will exist during the construction phase of the project. • Kanchibuya Town Council asked about the duration of the project. ZESCO responded that the project is going to take 3 to 4 years. • Morgan Nvoni wanted to know how the district would benefit from the power line. Choolwe Chanda responded the project will improve the power capacity for Zambia and Kanchibiya since the project will facilitate power sharing among countries within the Southern African Power Pool and the Eastern African Power Pool. • The Kanchibiya Town Council asked if a substation will be constructed in Kanchibya. ZESCO responded that no new substation will be constructed in Kanchibiya. • The Kanchibiya Town Council commented that Kanchibiya District needs an enhanced power supply and requested ZESCO to boost the power supply to the district. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage.**	

ITEMS DISCUSSED	ACTION BY
• The African Mining Consultant asked if Kanchibiya District has a waste disposal facility and what type of waste is managed at the facility. the Kanchibuya Town Council responded that the district uses an existing borrow pit for the disposal of municipal solid waste. • The African Mining Consultant asked about existing sensitive landscapes and cultural heritage sites in the district. The Kanchibuya Town Council responded that the only sensitive sites in the district are graveyards. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location** (with GPS data if possible) • The African Mining Consultant requested information about existing and upcoming projects which may have cumulative impacts on the project. • The Kanchibiya Town Council responded that there are plans to construct a filling station and to create plots by the junction between the Mpika Road and the road going to Kanchibiya Central Business District. **Concerns, expectations, questions** • No other concerns, expectations or questions were raised	

PHOTOS

SIGNATURES
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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement meeting with the Provincial Forest Officer	**DATE:**	22.05.2024
VENUE:	Kasama Forestry Department	**TIME:**	14:30hRS

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultants
	African Mining Consultants
	Forestry Department

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited The African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct	

ITEMS DISCUSSED	ACTION BY
socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) Encroachments in forest reserves • The African Mining Consultant mentioned that the project corridor will encroach 30.71km of Kanona Forest Reserve in Serenje and Chitambo District, 0.32km of Amenshi Forest Reserve, 2.86km of Kasama Forest Reserve and 4.43km of Nkole Mfumu Forest Reserve in Kasama District, 3.23km of Chitimukulu Forest Reserve and 0.43km of Mungwi Forest Reserve in Mungwi District. The project has proposed to reforest a total of 80hectares for the entire project to compensate for the trees which will be lost. Reforestation in each affected district will be conducted in collaboration with the local forest department and the local communities. The local forest departments will facilitate growing and planting of tree seedlings preferably the same species which will be lost. The reforested areas will be maintained by the project for a period of 5 years and will be monitored for the next 10 years to ensure that the trees get well established. • The Forestry Department mentioned that the department has the capacity to grow tree seedlings and plat them. However, she will need to visit the affected areas to ascertain the tree species that will be affected and if they can be grown in their nursery. The African Mining Consultant noted the comment and added that vegetation studies were done as part of the ESIA and tree species in the project corridor were identified but there is no harm for the Forest Department to visit the affected forest reserves and confirm.	

ITEMS DISCUSSED	ACTION BY
• The Forestry Department requested for a copy of the approved ESIA. The African Mining Consultant responded that the approved ESIA can be downloaded on ZEMA website. • The Department mentioned the that the department participated in planting 3,000 trees in Chishimba area in Kasama District. The lessons learnt from the activity is that periodic maintenance and monitoring of the reforested areas is critical for the success of reforestation activities. • The African Mining Consultant asked about the lead time needed for the Forest Department to grow the seedlings and make them ready for panting. The Forestry Department responded that a 1-year lead time is needed. • The ZESCO requested Forestry Department to confirm the location of Amenshi Forest Reserve. Forestry Department confirmed using the map that the Amenshi Forest Reserve will be encroached. • The African Mining Consultant requested Forestry Department to comment on the appropriateness of the proposed mitigation measures for trees that will be lost from the forest reserves. Forestry Department responded that the measures are adequate especially that maintenance and monitoring of the reforested areas have been provided for. • The African Mining Consultant asked about the availability of the Forest Department to participate in the proposed reforestation activities. Forestry Department responded that the department is available. **Concerns, expectations, questions** No other concerns, expectations or questions were raised.	

PHOTOS



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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement	**DATE:**	22.05.2024
VENUE:	Kasama Municipal Council	**TIME:**	10:30HRS

ATTENDEES	
Name	**Organization**
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
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	Kasama Municipal Council
	Kasama Municipal Council
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	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	Kasama Municipal Council
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultant
	African Mining Consultant

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited Aldrin Sinkala to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the	

ITEMS DISCUSSED	ACTION BY
environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Kasama Municipal Council asked about the duration of the project. ZESCO responded that the project will be completed within 3 to 4 years from the project commencement date. • The Kasama Municipal Council asked about the mitigation measures for the trees which will be lost. The African Mining Consultant responded that the project has a component to plant new trees to compensate for the trees which will be lost. • The Kasama Municipal Council raised a concern that projects do not often implement the mitigation measures promised during engagements. The African Mining Consultant responded that the mitigation measures for the identified impacts will be implemented since they are commitments on which ZEMA based their decisions and are critical for the good environmental and social performance of the project.	

ITEMS DISCUSSED	ACTION BY
• The Kasama Municipal Council observed that the project will contribute to damaging local roads. The African Mining Consultant acknowledged the comment and stated that mitigation measures such as avoiding overloading project vehicles will be implemented and the project will be paying all applicable fees such as toll fees for using public roads. • The Kasama Municipal Council wanted assurance that the power supply will become more reliable when the project is implemented. The Kasama Municipal Council responded that the proposed project has the potential to increase energy capacity since it will facilitate ZESCO buying power from countries which are part of the Southern African Power Pool and the Eastern African Power Pool. • The Kasama Municipal Council asked for clarity regarding where the power line will pass. ZESCO described the proposed powerline corridor in Kasama District using a map. • The Kasama Municipal Council asked if the proposed project will affect any people along the proposed power corridor. ZESCO responded that some people will be affected and that all the affected people will be compensated. • The Kasama Municipal Council asked about the proposed mitigation measures for HIV and AIDS during project implementation. ZESCO responded that members of the community will be sensitized about HIV and that workers will be equally sensitized and provided with free access to condoms. The African Mining Consultant added that employing more local people will reduce the number of migrant labour and thus help reduce risk of new HIV infections. • The Kasama Municipal Council commented that the identified potential positive impacts will benefit the local people.	

ITEMS DISCUSSED	ACTION BY
Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage. • The African Mining Consultant asked if Kasama District has an existing dump site and what waste is managed there. The Kasama Municipal Council responded that the district uses an existing borrow pit for the disposal of municipal waste. The district does not have a hazardous waste management facility. • Aldrin Sinkala asked the Kasama Town Council Team to mention any sensitive receptors including cultural heritage sites which may be along the proposed power corridor or anywhere within the district which should be noted. Catherine N. Kavunga responded that the only sensitive areas in the district are graveyards. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location (with GPS data if possible.** • The African Mining Consultant requested a copy of the Integrated District Development Plan for Kasama District. The Kasama Municipal Council promised to share it later in the day. • The African Mining Consultant the Kasama Municipal Council team to mention major infrastructure developments planned for the district which could have cumulative impacts on the proposed powerline project. Pretter Mumba responded that the council plans to develop a dumpsite along Luwingu Road. The Kasama Municipal Council mentioned that Kasama District has planned to implement several projects as part of the program to promote the Northern Tourism Circuit. • The African Mining Consultant requested for spatial data concerning all the major planned developments so that the data can be super-imposed on the existing project map to ascertain how they relate to the proposed project. The Kasama Municipal Council promised to share the spatial data by next week. • ZESCO promised to share the KML file showing the proposed power corridor with The Kasama Municipal Council to help him identify	

ITEMS DISCUSSED	ACTION BY
projects which may have been planned along the proposed powerline corridor. **Concerns, expectations, questions**. No other concerns or expectations were raised.	

PHOTOS





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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder Engagement with Lavushimanda Town Council	**DATE:**	27.05.2024.
VENUE:	Lavushimanda Town Council	**TIME:**	10:30hRS

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultancy
	African Mining Consultancy
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council
	Lavushimanda Town Council

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies • After introductions, ZESCO gave a brief background about the project and invited Aldrin Sinkala to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for	

ITEMS DISCUSSED	ACTION BY
the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to update the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Lavushimanda Town Council requested for a copy of the approved ESIA and EMP documents. ZESCO responded that the documents for both the Pensulo to Kasama stretch and Kasama to Nakonde are available for download on ZEMA website. • The Lavushimanda Town Council asked when the project will be implemented. ZESCO responded that the project will commence after completing updating the ESIA and RCAP and securing funding from the World Bank. • The Lavushimanda Town Council asked about what benefits will accrue to the Lavushimanda Town Council. The African Mining Consultant responded that the local job opportunities will improve circulation of income in the local economy and thus increase the revenue for the council. Also, increased power capacity which will be enabled by the project will benefit Lavushimanda Town Council.	

ITEMS DISCUSSED	ACTION BY
• The Lavushimanda Town Council requested that any planned construction camps in Lavushimanda should be built within the Lavushimanda Council area so that the council can use those facilities after the project. The African Mining Consultant responded that the request will be reflected in the minutes so that the decision-makers for the project can consider it. • The Lavushimanda Town Council raised a concern that ZESCO has not been sharing information on the number of poles in the district for Lavushimanda Town Council to invoice ZESCO for pole levy. ZESCO advised that Lavushimanda Town Council should engage the distribution directorate as they are the ones who deal with poles and distribution lines. • The Lavushimanda Town Council asked if the reforestation sites have already been identified. ZESCO responded that the sites have not been identified yet. They will be identified in collaboration with the local forest departments and local councils in each affected district later. • The Lavushimanda Town Council requested the project team to work closely with Council officials and involve them during sensitizations. The African Mining Consultant noted the request and added that relevant council officials will be involved whenever necessary. The council will be kept informed of the progress and any issues which may be encountered on the ground which may need the intervention of the council. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage** • The African Mining Consultant if Luvushimanda Town Council has an approved waste disposal site. The Lavushimanda Town Council responded that the council has a dump site in Kalonje Village. • The Lavushimanda Town Council pointed out that the charges waste disposal fees for disposing waste at their dumpsite. • The Lavushimanda Town Council asked about who will be monitoring the potential contamination of streams. The African Mining Consultant responded that monitoring will be done internally and externally. The project implementation team will be monitoring activities to ensure that proposed mitigation measures are	

ITEMS DISCUSSED	ACTION BY
working and will be submitting environmental performance reports to ZEMA biannually. External monitoring will be done by ZEMA, and other collaborating partners such as the World Bank to ensure that the proposed impact mitigation measures are implemented effectively. Luvushimanda Town Council is free to monitor the environmental and social performance of the project and engage ZESCO for any issues that the council may need to attend to. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location** (with GPS data if possible) • The African Mining Consultant asked about the existing and upcoming projects in Lavushimanda District which may have cumulative impacts on the proposed project. The Lavushimanda Town Council responded that there are no planned major infrastructure projects in the district and no projects have been planned near the proposed power corridor. • The African Mining requested for the Integrated District Development Plan for Lavushimanda District. The Lavushimanda Town Council promised to share the Integrated District Development Plan later. **Concerns, expectations, questions** • No further concerns, expectation and questions were raised	

PHOTOS



SIGNATURES

See attached register of signatures.

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref:**	CA0027197.7329
SUBJECT:	Stakeholder Engagement	**DATE:**	24.05.2024
VENUE:	Mpika Town Council	**TIME:**	15:00hRS

ATTENDEES	
Name	**Organization**
	Zesco
	Zesco
	Zesco
	Zesco
	African Mining Consultancy
	African Mining Consultancy
	Mpika Town Council
	Mpika Town Council
	Mpika Town Council
	Mpika Town Council
	Mpika Town Council
	Mpika Town Council

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the	

ITEMS DISCUSSED	ACTION BY
World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Mpika Town Council asked about where the proposed power corridor will pass in the district. ZESCO described the power corridor using a map. • The Mpika Town Council asked about the size of the proposed way leave. ZESCO responded that the proposed power line in Mpika will run parallel to the already existing line. The current way leave is 50m and an additional 35m way leave will be acquired for the new line. • The Mpika Town Council expressed concern over the loss of vegetation along the way leave and asked about the plan to mitigate this. The African Mining Consultant responded that a total of 80 hectares of land has been proposed to be revegetated. The local forest departments in affected districts will be engaged to help grow seedlings preferably of the indigenous species which will be lost and help plant the same on land which will be identified and acquired for the same purpose. • The Mpika Town Council commented that indigenous trees are not so easy to grow. The council has an ongoing experiment to grow seedlings for some selected indigenous tree species. The African Mining Consultant responded that so	

ITEMS DISCUSSED	ACTION BY
far, the Forestry departments in Kasama and Mungwi District have indicated that they have the capacity to grow some tree species. The forest department in each district will advise as to which species can be planted to replace the species of trees which will be lost. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage** • The African Mining Consultant asked if the Mpika District have a waste disposal site and which type of waste is managed at the site. The Mpika Town Council responded that the district use a borrow pit in Chisenga area along TAZARA Road. • The African Mining Consultant asked if Mpika Town Council has plans to develop a new waste disposal site. Mpika Town Council responded that the council has plans but land has not been identified yet. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location** (with GPS data if possible) • The African Mining Consultant requested for information about existing and planned infrasructure projects that can have cummulative impacts on the proposed power line project. Mpika Town Council mentioned that 90 plots have been created in the new area and the proposed corridor has been encroached. ZESCO mentioned that the way leave for the proposed project was surveyed and acquired in 2012 and plots were created after 2012. Mpika Town Council has been written to by ZESCO concerning the plots encroaching the planned way leave but Mpika Town Council has not responded. he African Mining Consultant noted the issue and advised that ZESCO should engage the council again and resolve the matter. • The Mpika Town Council mentioned that another layout plan for plots has been created in Malambwa area and there is a possibility that some structures which have already been built may be affected. • The Mpika Town Council further mentioned that a company called EHAD has plans to establish a solar farm over a 100 hectares piece of land within Manyowe Farm. • The African Mining Consultant requested the Mpika Town Council to share the District Integrated Development Plan and spatial information for the location of the new plot layout plan, and the proposed housing project by National Pensions Scheme Authority.	

ITEMS DISCUSSED	ACTION BY
• ZESCO emphasized the need to share shape files for the planned projects and the existing district plan. He also appealed to the Mpika Town Council team to avoid planning any projects within the wayleave for the proposed power line project. **Concerns, expectations, questions** • There were no further concerns or questions	

PHOTOS



SIGNATURES

See attached register of signatures.

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement meeting with the District Forest Officer in Mungwi District	**DATE:**	23.05.2024
VENUE:	Mungwi Forestry Department	**TIME:**	11:30hRS

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultants
	African Mining Consultants
	Mungwi Forest Department
	Mungwi Forest Department
	Mungwi Forest Department
	Mungwi Forest Department

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. Aldrin Sinkala emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for	

ITEMS DISCUSSED	ACTION BY
approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) Encroachments in forest reserves • The African Mining Consultant mentioned that the project corridor will encroach 30.71km of Kanona Forest Reserve in Serenje and Chitambo District, 0.32km of Amenshi Forest Reserve, 2.86km of Kasama Forest Reserve and 4.43km of Nkole Mfumu Forest Reserve in Kasama District, 3.23km of Chitimukulu Forest Reserve and 0.43km of Mungwi Forest Reserve in Mungwi District. The project has proposed to reforest a total of 80hectares for the entire project to compensate for the trees which will be lost. Reforestation in each affected district will be conducted in collaboration with the local forest department and the local communities. The local forest departments will facilitate growing and planting of tree seedlings preferably the same species which will be lost. The reforested areas will be maintained by the project for a period of 5 years and will be monitored for the next 10 years to ensure that the trees get well established. • The Mungwi Forest Department requested for financial support to seedings. he African Mining Consultant responded that the reforestation program will be supported by the project. • X mentioned that the district has the capacity to grow the tree seedlings and then engage the members of the community around the reforestation site to participate in planting and managing the plantation.	

ITEMS DISCUSSED	ACTION BY
• The Mungwi Forest Department raised a concern that the district forest office does not have adequate space to grow large quantities of seedlings and the office space is rented. He therefore requested the project to support the construction of the district forest offices. ZESCO noted the request and mentioned that the team does not have the mandate to commit to the request but will bring it to the attention of decision makers. • ZESCO asked The Mungwi Forest Department if they can still utilise the available space and probably rent out some land elsewhere to grow the tree nurseries. Mungwi Forest Department responded that they will try to use the available space at the office. Renting land from elsewhere will be challenging to effectively manage the tree nurseries. • The Mungwi Forest Department mentioned that the forest department will have to do the biomass assessments and ascertain the stumpage value which ZESCO will need to pay for the trees which will be lost. The African Mining Consultant commented that the project has proposed to reforest approximately 80 hectares of land as for compensation for trees which will be lost. He then asked X if paying for stumpage will not be double compensation. X responded that since trees will be planted to compensate for the trees which will be lost, there will be no need to pay the forest department for the trees which will be lost. • The Mungwi Forest Department requested for financial support to do biomass assessment for the entire forest reserve to ascertain its condition and plan for appropriate interventions. ZESCO noted the request and said that it will be forwarded to decision-makers through the minutes of the meeting. **Concerns, expectations, questions** No other concerns, expectations or questions were raised.	

PHOTOS



SIGNATURES

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement	**DATE:**	23.05.2024
VENUE:	Mungwi Council	**TIME:**	12:00hRS

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultants
	African Mining Consultants
	Mungwi Town Council
	Mungwi Town Council
	Mungwi Town Council
	Mungwi Town Council
	Mungwi Town Council
	Mungwi Town Council

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018.	

ITEMS DISCUSSED	ACTION BY
The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Mungwi Town Council requested assurance that mitigation measures for HIV will be implemented and asked about what can done if the proposed mitigation measures are not implemented. The African Mining Consultant responded that the ESIA is being implemented to ensure that appropriate actions are identified to improve the project's environmental and social performance hence the project team is committed to ensuring that sound mitigation measures are implemented. ZESCO mentioned that the grievance redress mechanism has been put in place hence members of the public are free to raise any grievances and the project team will ensure that grievances are resolved. • The Mungwi Town Council asked about what will be done to the people who will be resettled. The African Mining Consultant responded that the project-affected people will be compensated. • The Mungwi Town Council requested that activities for mitigating HIV and AIDS should be included in the project budget and that the District Aids Task Force (DATF) should be involved in implementing HIV mitigation programs. • The Mungwi Town Council asked about the measures which the project will put in place to reduce the project impacts on the forest reserves where the line will pass. he African Mining Consultant responded that approximately 80 hectares piece	

ITEMS DISCUSSED	ACTION BY
of land will be reforested to compensate for the trees that will be lost. The reafforestation program will be implemented in collaboration with the local forest departments in affected districts. The proposal is to plant indigenous trees which can be raised by the local forest departments and have the highest survival rate. • The Mungwi Town Council asked if the project has a component to rehabilitate the roads and crossing points project vehicles and equipment will be using. The African Mining Consultant responded that the project will pay all applicable road user fees and will ensure that the project vehicles are not overloaded to mitigate the risk of damaging road infrastructure. Where damage to a road section or crossing point is directly attributable to the project, Mungwi Town Council can engage the project management team and agree on the remedial measures. • The Mungwi Town Council wondered why ZESCO is proposing a new power line project instead of working on projects locally to improve power generation capacity. The African Mining Consultant responded that the objective of the proposed project is to improve energy capacity by facilitating the purchase of electricity from other countries which may have some surplus. ZESCO has planned for other projects whose objective is to improve local power generation capacity. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage** • The African Mining Consultant asked if Mungwi District has a dump site and what waste is managed there. The Mungwi Town Council responded that they have a temporal Borrow along Kasama Isoka road which they use for disposal of municipal waste. The Council has plans develop a waste disposal site if land becomes available.	

ITEMS DISCUSSED	ACTION BY
Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location (with GPS data if possible) • The Mungwi Town Council the District Integrated Development Plan for Mungwi District asked the Mungwi Town Council team to mention the infrastructure which the district has planned to implement and may have cumulative impacts on the proposed power line project. • The Mungwi Town responded that Integrated Development Plan will be finalised by September 2024 after which it will be shared. No major infrastructure development has been planned for the district. • ZESCO promised to share KML file showing the corridor for the proposed power line for the Chupa Chitala to check and see if there are any developments planned near or within the power corridor. He then requested the Mungwi Town to share spatial data for all the major infrastructure development which has been planned to be implemented in the district. **Concerns, expectations, questions** • No other concerns were raised	

PHOTOS





SIGNATURES

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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Meeting with Nakonde Town Council	**DATE:**	20.05.2024.
VENUE:	Nakonde City Council	**TIME:**	09:30hRS

ATTENDEES	
Name	**Organization**
	Zambia Electricity Supply Corporation
	Zambia Electricity Supply Corporation
	Zambia Electricity Supply Corporation
	Zambia Electricity Supply Corporation
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Nakonde Council
	Department Of Heritage Services
	African Mining Consultants
	African Mining Consultants

ITEMS DISCUSSED	ACTION BY
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde.The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Nakonde Council asked if people who will be displaced in Kasama will be compensated. ZESCO responded that the project-affected people will be compensated. • The Nakonde Council asked about the mitigation measures for HIV and AIDS during project implementation. ZESCO responded that members of	

ITEMS DISCUSSED	ACTION BY
the community will be sensitized about HIV/AIDS and the workers will equally be sensitized and provided free access to condoms. • The Nakonde Council mentioned that he was happy with what the project will accomplish when implemented. He emphasized that the project team should ensure that the project benefits accrue to Nakonde District. • The Nakonde Council asked for clarity regarding where the power line will pass. ZESCO described the proposed powerline corridor in Nakonde district using the map. • The Nakonde Council asked about the duration of the project. ZESCO responded that the project will be completed within 3 to 4 years from the commencement date. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage** • The African Mining Consultant asked if Nakonde District has an existing Dump site and what waste is managed there. The Nakonde Council responded they have a dump site along Mbala Road opposite the ZAFFICO plantation. • The African Mining Consultant asked what kind of waste is dumped on the dumping site. The Nakonde Council responded that the dumpsite is for municipal waste. • The African Mining Consultant asked the Nakonde Council Team to mention any sensitive receptors including cultural heritage sites which may be along the proposed power corridor or anywhere within the district which should be noted. Nakonde Council - the Zwangendaba burial sites and the graveyards which are in different locations but outside the proposed project corridor. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location (with GPS data if possible)** • The African Mining Consultant requested the Nakonde Town Council team to mention major infrastructure developments planned for the district which could have cumulative impacts on the proposed power line project. The Nakonde Council	

ITEMS DISCUSSED	ACTION BY
responded that the district has planned for an airship in Musanza village. The Nakonde Council mentioned a rice processing plant has been proposed in Chiwanza ward and the skills training centre has been proposed along Mbala Road. • The African Mining Consultant requested the Nakonde District Integrated Development Plan (IDP) and spatial data for the planned infrastructure development projects. The Nakonde Council promised to share the IDP and spatial data later on. **Concerns, expectations, questions** • There were no other concerns or expectations.	

PHOTOS



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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement meeting with Senga Hill Town Council	**DATE:**	21.05.2024.
VENUE:	Senga Hill City Council	**Time:**	11:00hrs

ATTENDEES	
Name	**Organization**
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	Senga Hill Town Council
	African Mining Consultants
	African Mining Consultants

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies. • After introductions, ZESCO gave a brief background about the project and invited The African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA	

ITEMS DISCUSSED	ACTION BY
activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to prepare the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) • The Senga Hill Town Council wondered if the proposed project will reduce the loading shedding problem. The African Mining Consultant responded that the project will in the long-term help reduce load shedding because of the power trading that it will facilitate. • The Senga Hill Town Council enquired whether the environmental and social impact assessment for the project has already been done. it has already been done. The African Mining Consultant responded that the environmental and social impact assessment for the project has been conducted and that the Environmental and Social Ipact Statement has been approved by ZEMA. The current work is for updating the documents to meet the Environmental and Social Framework for the World Bank which were revised in 2018. • The Senga Hill Town Council asked about the proposed mitigation measures for potential water contamination. The African Mining Consultant responded that among the proposed mitigation measures include ensuring that all the generated waste is collected and disposed of at approved waste disposal facilities. • The Senga Hill Town Council observed that a lot of vegetation will be lost and asked how the project will mitigate the loss of vegetation. The African Mining Consultant	

ITEMS DISCUSSED	ACTION BY
responded that the project has planned to reforest approximately 80 hectares of land to compensate for the vegetation which will be lost. , wanted to know how they're going to handle the vegetation part. What are the mitigation measures for the trees which will be lost? The African Mining Consultant answered that the project has a component to plant new trees for the trees which will be lost. • Senga Hill Town Council asked if the displaced people will be provided with water. The African Mining Consultant responded that all affected people will be compensated and those who will need to be relocated by the project will be provided with water points within the relocation site. • Senga Hill Town Council asked if it is possible for Senga Hill to be provided with power from the power lines which pass in the district. The African Mining Consultant responded that the power lines are high voltage lines hence power cannot be tapped directly from them. However, ZESCO has incorporated a component at the end of the project where power will be connected to some areas within the affected district to ensure that the affected districts benefit. • The Senga Hill Town Council complained about electricity problems in the district. The African Mining Consultant noted the complaint and added that the power shortage has been exacerbated by the erratic rain fall the country has experienced in recent years. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage.** • The African Mining Consultant asked if Senga Hill District has an existing Dump site and what waste is managed there. The Senga Hill Town Council responded that the district has three illegal dump sites in Chozi area along Sumbi Road, between Senga and Nondo along Shikulu Musonda Road and Senga dumpsite near Musombizi. The district has plans to develop a new dumpsite, but the location has not yet been identified.	

ITEMS DISCUSSED	ACTION BY
• The African Mining Consultant asked the Senga Hill Council Team to mention any sensitive receptors including cultural heritage sites which may be along the proposed power corridor or anywhere within the district which should be noted. The Senga Hill Town Council responded that the district only has community graveyards but they are not close to the power corridor. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location** (with GPS data if possible) • The African Mining Consultant requested the Senga Hill Council team to mention major infrastructure developments planned for the district which could have cumulative impacts on the proposed power line project. • The Senga Hill Town Council responded that the district has identified Senga, Mpande, Sokolo, Kavumbo and Chimila as growth areas and has commenced the process of developing local area plans for these growth areas. • The Senga Hill Town Council mentioned that the district has plans to connect a rail line from Kayambi to Mpulungu and to establish a Beans processing facility in Kavumbo and a rice processing facility in Chozi area. • The African Mining Consultant requested the district-integrated development plan for Senga Hill and the spatial data for the planned developments. The Senga Hill Town Council responded that the District Integrated Development Plan has not yet been finalized but promised to share it once finalized. He also promised to provide the spatial data for the planned developments later on. **Concerns, expectations, questions** No other concerns or expectations were raised.	

PHOTOS



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MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Stakeholder engagement with Serenje Town Council and the Serenje District Forestry Department	**DATE:**	28.05.2024
VENUE:	SERENJE town COUNCIL	**TIME:**	10:45hRS

ATTENDEES	
	Organization
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	ZESCO
	African Mining Consultants
	African Mining Consultants
	Serenje Council
	Serenje Council
	Serenje Council
	Serenje Council
	Serenje Council
	Serenje Council

ITEMS DISCUSSED	**ACTION BY**
Update on the project and environmental and social studies • After introductions, ZESCO gave a brief background about the project and invited the African Mining Consultant to present. • The African Mining Consultant informed stakeholders about the proposed power line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. The African Mining Consultant emphasized that the environmental and Social Impact Statement and the Environmental and Social Management Plan for the project entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the	

ITEMS DISCUSSED	ACTION BY
World Bank's Environmental and Social Framework, revised in 2018. The revised documents will, however, not be submitted to ZEMA for approval. WSP in collaboration with AMC will also conduct socioeconomic studies for the stretch between Pensulo and Kasama to update the RCAP for that section. The team will also audit the implementation of the RCAP for the stretch between Kasama and Nakonde. The African Mining Consultant further mentioned the potential environmental and social impacts of the project and emphasized that the ESIA studies have proposed appropriate mitigation measures for negative impacts and enhancement measures for positive impacts (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) Encroachments in forest reserves • The African Mining Consultant mentioned that the project corridor will encroach 30.71km of Kanona Forest Reserve in Serenje and Chitambo District, 0.32km of Amenshi Forest Reserve, 2.86km of Kasama Forest Reserve and 4.43km of Nkole Mfumu Forest Reserve in Kasama District, 3.23km of Chitimukulu Forest Reserve and 0.43km of Mungwi Forest Reserve in Mungwi District. The project has proposed to reforest a total of 80hectares for the entire project to compensate for the trees which will be lost. Reforestation in each affected district will be conducted in collaboration with the local forest department and the local communities. The local forest departments will facilitate growing and planting of tree seedlings preferably the same species which will be lost. The reforested areas will be maintained by the project for a period of 5 years and will be monitored for the next 10 years to ensure that the trees get well established. • The Serenje Council asked about how much forest cover will be lost and what actions the project will take to mitigate the loss. The African Mining Consultant responded that 30.71km of Kanona Forest Reserve will be encroached by the project. The project has proposed to reforest a total of 80 hectares of land to compensate for trees which will be lost. • The Serenje Council asked about the project implementation timeframe and observed that the more the project delays, the more additional people may encroach the project corridor. ZESCO responded that the start date of the project depends on when the project construction phase will be funded. ZESCO mentioned that the project implantation team has recommended beaconing the project corridor in	

ITEMS DISCUSSED	ACTION BY
the hope that the action will deter people who may want to encroach on the proposed power corridor. • The Serenje Council mentioned that the forest department will need to conduct the biomass assessment and issue an invoice to ZESCO to pay for the trees which will be lost in the forest reserve. • The Serenje Council asked if Serenje Town Council will be involved in the upcoming socioeconomic assessments and whether Serenje Town Council is a member of the project grievance management committee. The African Mining Consultant responded that a team to do the socioeconomic assessment has already been identified. The team will seek guidance from relevant officers of Serenje Town Council on any issues which may require the input of Serenje Town Council. ZESCO confirmed that Serenje Town Council is among the members of the Grievance Management Committee for Serenje District. • The Serenje Council asked if there are any other infrastructure to be constructed in Serenje District as part of the proposed project. ZESCO responded that only the power transmission line will be constructed. The African Mining Consultant added that the project will also involve upgrading the Pensulo Substation in Serenje District, Kasama Substation in Kasama, Mpika Substation in Mpika and constructing a new substation in Nakonde. • The Serenje Council mentioned that people who have encroached the Kanona Forest should not be compensated since they are there illegally. • The Serenje Council asked about the project implementation timeframe. The African Mining Consultant responded that the project will commence as soon as it is financed. The project duration is estimated to be 3 to 4 years from the commencement date. • ZESCO requested the Serenje Forest Department to conduct a biomass assessment for the project corridor in Kanona Forest but the Forest Department has not responded yet. The Serenje Council responded that he was not aware of that request. • The Serenje Council asked if local chiefs have been engaged. The Serenje Council responded that affected chiefs were engaged during the preparation of the ESIA, ESMP and RCAP for the project. **Environmental and social issues to consider (management of hazardous waste, sensitive receptors, including cultural heritage**	

ITEMS DISCUSSED	ACTION BY
• The African Mining Consultant asked if the Serenje Town Council has an approved waste disposal site. The Serenje Council responded that the council has a dumpsite in Mbaswa Ward and that it has plans to construct an improved dumpsite on a 100 hectare piece of land in Mbaswa Ward. **Existing/upcoming projects that may lead to cumulative impacts (infrastructure projects, waste management, airports/landing areas, etc.), including location** (with GPS data if possible) • The African Mining Consultant asked about the existing and planned projects in Serenje District which may have cumulative impacts on the proposed project. The Serenje Council responded that no major projects have been planned except for the construction of some schools and health posts funded under the constituency development fund. • The African Mining Consultant requested shape files for the district plan and the Integrated District Development Plan for Serenje District. The Serenje Council promised to share the documents later. **Concerns, expectations, questions** • No other concerns or expectations were raised	

PHOTOS



PHOTOS



SIGNATURES

See attached register of signatures.

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

MEETING NOTES

CLIENT:	CIGZambia and Cowater		
PROJECT:	Zambia-Tanzania Interconnector Project	**WSP Ref.:**	CA0027197.7329
SUBJECT:	Meeting with the Department of National Park and Wildlife	**DATE:**	2024 June 6
VENUE:	On-line	**TIME:**	2 :30 pm UTC+2

ATTENDEES	
Name	**Organization**
	ZESCO
	ZESCO
Hélène Chouinard	WSP
Maya Brennan Jacot	WSP
Chloé Gagnon-Champigny	WSP
	Department of National Park and Wildlife
	Department of National Park and Wildlife
	Department of National Park and Wildlife
	Department of National Park and Wildlife
	Department of National Park and Wildlife
	Department of National Park and Wildlife

ITEMS DISCUSSED	**ACTION BY**
1. **Update on the project and environmental and social studies** After introductions, ZESCO informed DNPW about the proposed ZTIP transmission line, its capacity, and corridor and that the power line is critical in enabling power sharing among members of the Southern African Power Pool and the Eastern Africa Power Pool. ZESCO emphasized there is no national park crossed by the TL but there are still biodiversity issues that need to be discussed today. ZESCO said that the Environmental and Social Impact Statement and the Environmental and Social Management Plan for the entire project has been approved and that the Resettlement and Compensation Action Plan (RCAP) for the Kasama Nakonde stretch have already been approved by the Zambia Environmental Management Agency (ZEMA). The current ESIA activities are for updating the already approved documents to satisfy the World Bank's Environmental and Social Framework, revised in 2018. The Project is expected to be implemented in Q1 of 2025. (*Details of the presentation are shown in the attached project information document which was shared with the stakeholders*) 2. **Biodiversity issues associated with the ZTIP** WSP exposed that the ESIA and ESMP update are completed in compliance with national requirements but also with WB ESS, including ESS6 on	

ITEMS DISCUSSED	ACTION BY
Biodiversity. Even if the ZTIP are not directly impacting national parks, it is included in a mosaic of protected areas and forest reserves. Some forest reserves are crossed by the ZTIP. WSP presented in details the proximity of protected areas and the biological extended study area. The biological baseline and associated impacts will include a Critical Habitat Assessment. This assessment covers an area broader than the project footprint and it includes the surrounding protected areas, notably Lavushi Manda NP and Luwingu GMA.	
3. Species of special status (endangered and endemic species) The ZTIP is anticipated to have impact on habitats within the project footprint potentially hosting endangered species. A preliminary list of endangered and critically endangered species (IUCN red list) present or potentially present within the project area was shared with the DNPW prior to the meeting. They include the Endangered elephant, as well as many Endangered and Critically Endangered vultures and Eagles. Other species of interest are Vulnerable Hippos, lions and leopards. DNPW said vultures could be everywhere and the list of birds and game species present within the NP are identified in their management plans. The Mutinondo Wilderness area is a privately managed area. There is wildlife in the site. Pangolins are present within the Mungwi area. These are captured for trade.	
4. Migration corridors and routes Elephants are migrating from Kasanka NP passing through Kanona and in Bumba proposed wildness area. There was originally a wildlife corridor from the valley (South Luangwa National Park) to the Lavushi Manda NP. Now elephants are not moving in between valley to the Lavushi Manda NP. Bat migration, October to November from Kasanka to Chitambo. There may be some collisions of the bats with the powerline.	DNPW will share Knowledge and description of migration routes possibly used by wildlife. DNPW will share Elephant occurrences of in the Kanona Forest Reserve
5. Management plans and conservation actions DNPW has management plans in different forms and could share these plans with various biological data included in them. Long raging species are moving a lot and their movements should be considered as they could be impacted by any projects implemented in the area. Railways, powerlines are cleaning habitats. The ZTIP should leave sufficient space in between the park and the line to protect the LMNP. WSP said that it is also important to know about the conservation actions implemented or planned for the endangered species. Usually, the management	DNPW will share management plans for the national parks

ITEMS DISCUSSED	ACTION BY
plans are a general document, they do not specify the actions on species. The conservation actions are in the species conservation action plans. LMNP will be restocked with different species next year, notably buffalos. DNPW will share the list of species which will be restocked. Newly developed Lavushi Manda Development plan at district level is a very important document that should be consulted as it integrates proposed conservation actions at the district territory level. Lavushi Manda NP management plan is currently under revision and is not finalized yet. It was however agreed that DNPW could share part of the information if WSP identifies clearly the required information. **6. Environmental and social issues to consider and key associated actions** Clearing of bushes and woodlands has negative impacts on wildlife. DNPW would like to review and comment mitigation measures and plan proposed to protect wildlife during project implementation. Team and offices on the ground need to have an appreciation of where the line will be passing. If the line is passing in the GMA in the nature preservation zone, DNPW expects to keep the same conservation actions. If the line passes within the development zone, the project needs to protect people livelihood, and there is a need to engage with traditional leaders to ensure that the livelihood of those people are protected. ZESCO said the current ESIA is only an update and DNPW has been engaged at each steps of the previous detailed studies development. It is however expected that DNPW would be informed on new measures and plans to be implemented.	and game management areas in proximity to the project DNPW will share conservation actions plans for specific species List of species to be restocked in the Lavushi Manda National Park

INFORMATION THAT DPNW CAN SHARE FOR THE PROJECT
Management plans for the national parks and game management areas in proximity to the project (LMNP, Kasanka National Park, Luwingu GMA, etc.)
Conservation actions plans for specific species (elephants, lions, hippos, vultures and eagles, etc.)
Knowledge and description of migration routes possibly used by wildlife.
Elephant occurrences of in the Kanona Forest Reserve
List of species to be restocked in the Lavushi Manda National Park

These minutes are considered to be an accurate recording of all items discussed. We request that written notices of discrepancies, errors or omissions be given within seven (7) days, otherwise the minutes will be accepted as written.

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: KASAMA COUNCIL **Date:** 22/05/2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	KASAMA		ZESCO	WAYLEAVE OFFICER		
02	KASAMA		KMC	APRM		
03	KITWE		AMC	ASSISTANT Grace holders engagement.		
04	KASAMA		AMC	Assistant		
05	KASAMA		ZESCO LTD	SNR. SHEQ OFFICER		
06	KASAMA		KMC	TOWN CLERK		
07	KASAMA		KMC	DIRECTOR PLANNING		

wsp

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	KASAMA		ZESCO LTD	SNR. ENV. SCIENTIST		

wsp

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location:

Date: 23 - 05 - 2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
1	KASAMA		KASAMA DISTRICT ADMINISTRATION	DISTRICT ADMINISTRATIVE	gmail.co	

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: NAKONDE CITY COUNCIL | **Date:** 20/05/2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone ~~Number/E-mail~~	Signature
1	NAKONDE		ZESCO LTD	SNR. ENV. SCIENTIST		
2	NAKONDE		ZESCO LTD	WAYLEAVE OFFICER		
3	NAKONDE		NAKONDE COUNCIL	CHIEF HRO		
4	NAKONDE		NTC	DIRECTOR FINANCE		
5	NAKONDE		N.T.C	ASS PROCUREMENT OFFICER		
6	NAKONDE		N.T.C	AJS. DIRECTOR ENGINEERING		
7	NAKONDE		NTC	CS		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
8	NAKONDE		NAKONDE COUNCIL	DP		
9	NAKONDE		NAKONDE COUNCIL	ADPHS		
10	VICTOR		NAKONDE T COUNCIL	L.O		
11	NAKONDE		NAKONDE T. COUNCIL	INTERNAL AUDITOR		
12	NAKONDE		NAKONDE COUNCIL	DPMC		
13	Nakonde		Nakonde Council	PRO		
14	NAKONDE		DEPARTMENT OF HEALTH SERVICES	DMO		
15	NAKONDE		NAKONDE TOWN COUNCIL	SEP		
16	NAKONDE		NAKONDE TOWN COUNCIL	VALUATION OFFICER.		
17	NAKONDE		NAKONDE COUNCIL	SBI		
18	NAKONDE		NAKONDE COUNCIL	EP		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
19	Makonde		AMC	Stakeholder engagement SP		
20.	NAKONDE		ZESCO	SHEQ OFFICER HRS-ZTK		
21	Lusaka		ZESCO	Principal Social Officer - ZTP		
22	Nakonde		N.T.C	Assistant legal Officer		
23.	~~NAKONDE~~		~~NAKONDE TOWN COUNCIL~~	~~VALUATION OFFICER~~		
24	NAKONDE		N.T.C	SENIOR HEALTH INSPECTOR		
25	KITWE		AMC	Assistant Stakeholder engagement		

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: KASAMA COUNCIL **Date:** 23.05.2024.

Object : Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	KASAMA		KMC	TC		
02	11		KMC	DP		
03	11		KMC	APRM		
04	11		KMC	CCDO		
05	11		KMC	CBI		
06	11		K.M.C	E.E		
07	11		KMC	CAO		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	KASAMA		KMC	SEP		
09	Kasama		KMC	DACA		
10	KASAMA		KMC	CSO		
11	KASAMA		KMC	DHRA		
12.	KASAMA		KMC	CHO		
13	KASAMA		KMC	SNR HEALTH INSPECTOR		
14	Kasama		KMC	DHSS		
15	Kasama		KMC	Director of Public Health		
16	Kasama		KMC	Civil Engineer		
17	KASAMA		KMC	DIRECTOR LEGAL SERVICES		
18	KASAMA		ZRBC	WAYLEAVE OFFICER		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	KASAMA		ZESCO	SNR. ENV. SCIENTIST		
09	KASAMA		ZESCO	PRINCIPAL SOCIAL OFFICER		
10	KASAMA		4 AMC	STAKEHOLDER ENGAGEMENT		
11	KASAMA		ZESCO LTD	SNR. SHEQ OFFICER		
12	KASAMA		AMC	ASSISTANT STAKEHOLDER ENGAGEMENT		

wsp

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: MUNGWI COUNCIL **Date:** 23.05.2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	MUNGWI		MUNGWI COUNCIL	CHIEF ADMINISTRATOR		
02	MUNGWI		MUNGWI COUNCIL	PUBLIC RELATIONS OFFICER		
03	MUNGWI		MUNGWI COUNCIL	SOCIO ECONOMIC PLANNER		
04	MUNGWI		MUNGWI COUNCIL	HRMO		
05	MUNGWI		ARC	Stakeholder engt specialist		
06	MUNGWI		ZESCO LTD	SSO-ZIK		
07	MUNGWI		MUNGWI TOWN COUNCIL	Director Engineering Services (Mungwi Town Council)		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
	Mungwi		Mungwi Council	Chief comm and admin		
	Mungwi		AMC	Assistant Stakeholders Engagement		

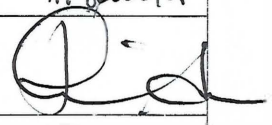
ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: FORESTRY DEPARTMENT MUNGWI | **Date:** 23/05-2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	Mungwi		Dist Admin	DHO		
02	Mungwi		FORESTRY	TECHNOLOGIST		
03	MUNGWI		FORESTRY	F.R.O		
04	MUNGWI		FORESTRY	TECHNICIAN		
05	Mungwi		ZTIP-ZESCO	Principal Social officer		
06	MUNGWI		ZTIP - ZESCO	ZTIP-PIU ZESCO		
07	MUNGWI		ZTIP - ZESCO	SHED OFFICER - ZTK		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	Munguni		KESCO	WAYLEAVE OFFICER		
	Mungai		AMC	Stakeholder engagement Specia		
	Mungai		F.D	DFO		
	Mungai		AMC	Assistant Stakeholder engagement		

wsp

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: SERENJE TOWN COUNCIL | **Date:** 28. 05. 2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	SERENJE		SERENJE TOWN COUNCIL	ENVIRONMENTAL PLANNER		
02	SERENJE		SERENJE TOWN COUNCIL	COMMUNITY DEVELOPMENT OFFICER		
03	SERENJE		ZESCO LTD	ZTIP-PIU		
04	SERENJE		SERENJE TOWN COUNCIL	DIRECTOR ENGINEERING		
05	SERENJE		SERENJE TOWN COUNCIL	COUNCIL SECRETARY		
06	SERENJE		ZESCO LTD	PRINCIPAL SOCIAL OFFICER ZTIP - PIU		
07	SERENJE		FORESTRY	DISTRICT FORESTRY OFFICER		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	SERENJE		ZESCO	WAYLEAVE OFFICER		
09	SERENJE		ZESCO LTD	SSO-ZTIP		
10	Serenje		~~ZESCO~~ AMC	Stakeholder engagement Specialist		
11.	Serenje.		ZESCO	AREA MANAGER		
12	Serenje		AMC	ASSISTANT STAKEHOLDER ENGAGEMENT		

wsp

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: CHITAMBO DISTRICT **Date:** 27.05.2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01			CTC	CHIEF ADMIN		
02			CTC	ADE		
03			CTC	CHRO 0977741430		
04			CTC	TP		
05	CHITAMBO		ZESCO LTD	SSO-ZUP-PIU		
06	"		CTC	CA		
07	"		CTC	SC		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	CHITAMBO		ZESCO	WAYLEAVE OFFICER		
09	CHITAMBO		ZESCO	SUPERINTENDENT		
10	CHITAMBO		AMC	Assistant Stakeholder Engagement		
11	11		ZESCO	PRINCIPAL SOCIAL OFFICER		
	11		AMC	STAKEHOLDER ENGAGEMENT SPECIALIST		

wsp

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: FORESTRY DEPARTMENT CHITAMBO SERENJE **Date:** 28.05.2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	CHITAMBO		FORESTRY	SENIOR FORESTRY TECHNICIAN (D.F.O)		
02	CHITAMBO		AMC	STAKEHOLDER ENGAGEMENT SPE		
03	"		ZESCO-LTD	PRINCIPAL SOCIAL OFFICER ZTIP		
04	CHITAMBO		ZESCO LTD	SSO - ZTIP		
05	"		ZESCO	WO - ZTIP		
06	"		ZESCO	ZESCO-ZTIP PIC		
07	"		AMC	ASSISTANT STAKEHOLDER ENGAGEMENT		

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ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: MPIKA **Date:** 25/05/2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	MPIKA		ZESCO LTD	SSO - ZTK		
02	MPIKA		ZESCO LTD	AREA MANAGER		
03	MPIKA		ZESCO LTD	ZTIP - PIU		
04	MPIKA		ZESCO LTD	ZTIP - PIU		
05	MPIKA		AMC	STAKEHOLDERS ENGAGEMENT SPECIALIST		
06	MPIKA		COUNCIL	EHS		
07	MPIKA		ZESCO	WAYLEAVE OFFICER		

wsp

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
08	MPIKA		MPIKA TOWN COUNCIL	Director of Engineering Services		
09	MPIKA		MPIKA TOWN COUNCIL	Chief Human Resource officer		
10	MPIKA		MPIKA TOWN COUNCIL	S. BUILDINGS INSPECTOR		
11	MPIKA		MPIKA TOWN COUNCIL	LANDS SURVEYOR		
12	MPIKA		MPIKA TOWN COUNCIL	ASSISTANT DIRECTOR OF ENGINEERING SERVICES		
13	MPIKA		MPIKA TOWN COUNCIL	ENVIRONMENTAL PLANNER		
14	MPIKA		AMC	ASSISTANT STAKEHOLDER ENGAGEMENTS		

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update
STAKEHOLDER ENGAGEMENT

Location: KANCHIBIYA **Date:** 2.-05-2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
1	KANCHIBIYA		ZESCO LTD	ZTIP - PIU		
2			ZESCO LTD	ZTIP - PIU		
3			ZESCO ANC	Stakeholders engagement spec		
3	KANCHIBIYA		ZESCO LTD	ZTIP -		
4	KANCHIBIYA		KANCHIBIYA TOWN COUNCIL	ASSISTANT DIRECTOR ENGINEER		
5	KANCHIBIYA		KANCHIBIYA COUNCIL	ASSISTANT CIVIL ENGINEER		
	KANCHIBIYA		KANCHIBIYA TOWN COUNCIL	SOCIAL ECONOMIC PLANNER		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
	07		KANCHIBIYA TOWN COUNCIL	DIRECTOR FINANCE		
	08		ANC	STAKEHOLDER ENGAGEMENT SPE		.com
	09		ANC	STAKEHOLDER ENGAGEMENT ASSISTANT		

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: FORESTRY DEPARTMENT KASAMA **Date:** 22.05.2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	KASAMA		ZESCO	NATIONAL OFFICER		
02	KASAMA		ZESCO LTD	SHED OFFICER ZTK		
03	KASAMA		ZESCO LTD	ZTK ZESCO PLC SNR ENV. SCIENTIST		
04	KASAMA		ZESCO LTD	PRINCIPAL SOCIAL OFFICER		
05	Kasama		Forestry	Principal Forestry Officer		
06	~~Aldrin~~ Kasama		AMEC	Stakeholder engagement Specialist	.com	

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
	KASAMA		AMC	ASSISTANT CIVIL TECHNOLOGY ENGINEER		

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: SENGA HILL COUNCIL **Date:** 21/05/2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
01	senga hill		SENGA HILL TOWN COUNCIL	councilchairperson		
02	SENGA HILL		SENGA HILL TOWN COUNCIL	INTERNAL AUDITOR		
03	SENGA HILL		SHTC	DACA		
04	SENGA HILL		SHTC	SEP		
05	SENGA HILL		SHTC	ACC		
06	SENGA HILL		SHTC.	Director Finance		
07	Senga Hill		SHTC	Health Inspector		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
8	SENGA HILL		SHTC	WIS		
9	SENGA HILL		SHTC	WATSAN - ENGINEER		
10.	[illegible]		U	DHRA		
11	SENGA HILL		SHTC	DES		
12	SENGA HILL			PSA		
13	Senga Hill		SHTC	Director Planning		
14	SENGA HILL		AMC	SE A/ Stake holders engage ment		
15	SENGA HILL		AMC	Stakeholder engagement specialist		
16	SENGA HILL					

ZAMBIA-TANZANIA INTERCONNECTOR PROJECT
Environmental and Social Impact Assessment (ESIA) Update

STAKEHOLDER ENGAGEMENT

Location: LAVUSHIMANDA TOWN COUNCIL **Date:** 27.05.2024

Object: Register of signatures

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
1	LAVUSHI MANDA		LAVUSHI Manda	COUNCIL Chairperson		
2	LAVUSHI-MANDA		LAVUSHI-MANDA TOWN COUNCIL	COUNCIL SECRETARY		
3	"		"	ASSISTANT DIRECTOR OF ENGINEERING		
4	"		"	SOCIAL ECONOMIC PLANNER		
5	"		"	TOWN PLANNER		
6	"		"	DACA		
7	"		"	LAND SURVEYOR		

#	City	NAME, Surname	Organization	Position/Designation	Contact: Phone Number/E-mail	Signature
8	〃		〃	S.I.A		
09	〃		LAVUSHIMANDA TOWN COUNCIL	I A		
10	〃		LTC	P.O. LTC		
11	LAVUSHI MANDA		ZESCO LTD	SSO - ZTK		
12	〃		ZESCO LTD	PSO - ZTIP		
13	〃		ZESCO Ltd	ZTIP - PIA ZESCO		
14			ZESCO	ZTP - PIN		
15	〃		Lavushimanda TOWN COUNCIL	CAO		
	〃		LAVUSHIMANDA TOWN COUNCIL	D.E		
	LAVUSHI MANDA		AMC	Stakeholder engagement specialist		
	LAVUSHI MANDA		AMC	ASSISTANT STAKEHOLDER ENGAGEMENT		