

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda

1. Location/Conditions

District: Mpigi



Conditions
 Permanent and seasonal wetlands with abundant fish were all highly modified mainly with agricultural activities (rice, maize, peas, and vegetables). Some of the wetlands had water systems.

Location	Field Point	Surrounding Area
MA1 (Position: No 27 25 1 037 29 20 2)	Seasonal wetland with water system	Maize cultivation
MA2 (Position: No 27 18 1 033 30 16 4)	Seasonal wetland with a fish culture	Paddy field
MA3 (Position: No 27 09 3 033 31 31 0)	Seasonal wetland with a fish culture	Cultivated land

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Location	Field Point	Surrounding Area
MA4 (Position: No 27 17 1 033 31 19 4)	Seasonal wetland with a fish culture	Cultivated land
MA5 (Position: No 27 17 3 033 31 03 0)	Seasonal wetland with a fish culture	Cultivated land
MA6 (Position: No 27 12 5 033 31 42 4)	Seasonal wetland with a fish culture	Sugarcane cultivation
MA7 (Position: No 27 27 0 033 31 34 1)	Seasonal wetland with a fish culture	Paddy field
MA8 (Position: No 27 51 9 033 32 42 5)	Permanent wetland with a fish pond 20 meters from the road	Paddy field

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Location	Field Point	Surrounding Area
MA9 (Position: No 28 11 5 033 31 07 0)	Permanent wetland with a water system	Paddy field
MA10 (Position: No 28 06 3 033 31 12 4)	Permanent wetland with a fish culture	Maize cultivation

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
Environmental and Social Issues - Seasonal and permanent wetlands observed in low levels were highly modified. - Water ponds at the low level were located at the lowest points of wetlands. - Degradation (mainly with Nigella, Mimosa, and other species, grasses, reeds, etc.)	- The poles will be installed at approximately 100m apart to avoid the fish farmers and migrants. - To ensure the poles will be installed in the wetlands, the poles' locations should be away from the fish culture net to obstruct the flow of water. - Clearance of the vegetation and excavation will be limited to the area where the electricity poles will be installed.

3. Attendants

Preparatory Survey Team (JICA)	District Officials
REA Expert REA Environmental Officer Chief Consultant Environmental Consultant Date: 21/10/2011	District Environment Officer District Natural Resources Officer Date: 21/10/2011

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda

1. Location/Conditions: Wetlands

District: Mpigi

Conditions
 Permanent and seasonal wetlands with abundant fish were all highly modified mainly with agricultural activities (rice, maize, peas, and vegetables). Some of the wetlands had water systems.

Location	Field Point	Surrounding Area
MA11 (Position: No 27 07 1 033 31 03 0)	Seasonal wetland with a fish culture	Paddy field
MA12 (Position: No 27 09 3 033 31 31 0)	Seasonal wetland with a fish culture	Cultivated land
MA13 (Position: No 27 09 3 033 31 31 0)	Seasonal wetland with a fish culture	Cultivated land

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Location	Focus Point	Surrounding Area
<p>U1-1 (Position: N 0 17 24.9 E 33 23 31.2)</p>  <p>U1-1 Focus: Area near the road where the power line is to be installed and the road side of the road.</p>	<p>U1-1 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 	<p>U1-1 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 
<p>U1-2 (Position: N 0 19 28.1 E 33 33 36.6)</p>  <p>U1-2 Focus: Area near the road where the power line is to be installed and the road side of the road.</p>	<p>U1-2 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 	<p>U1-2 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 
<p>U1-3 (Position: N 0 29 38.8 E 33 23 38.4)</p>  <p>U1-3 Focus: Area near the road where the power line is to be installed and the road side of the road.</p>	<p>U1-3 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 	<p>U1-3 Focus: Area near the road where the power line is to be installed and the road side of the road.</p> 

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
<p>Environmental and Social Issues:</p> <ul style="list-style-type: none"> Seasonal and permanent wetlands observed in lowlands were highly modified. Water ponds in the low columns were located at the lowest points of wetlands. Degradation (mostly of ridges, phragmites, straggly bushes, elephant grass, etc.) <p>Technical Issues:</p> <ul style="list-style-type: none"> Soft Ground 	<ul style="list-style-type: none"> The poles will be installed at approximately 100m apart to avoid the trees columns and ridges. To ease the poles will be installed in the wetlands the poles, treatment should be away from the low columns not to obstruct the flow of water. Cleaning of the vegetation and excavation will be limited to the area where the electricity poles will be installed.

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda

3. Attendants


Preparatory Survey Team (SCA)	District Officials
<p>BEA Engineer: <i>[Signature]</i> Philip Sanyal</p> <p>BEA Environmental Officer: <i>[Signature]</i> Philip Sanyal</p> <p>Chief Consultant: <i>[Signature]</i> Philip Sanyal</p> <p>Environmental Consultant: <i>[Signature]</i> Philip Sanyal</p>	<p>District Local Official: <i>[Signature]</i> Samwonge Abulul</p>

Date: 23 June, 2011

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda










4. Location/Conditions: Cultural Property

Location:



Conditions:

The area is a seasonal wetland. The vegetation was in its natural state but the wetlands were used for grazing and watering animals. Seasonal wetland and stream was observed passing both sections of Bukeme - Mwendu-Tyran and its fork - Munduli (See BS1-2 and BS1-3).

Location	Focus Point	Surrounding Area
<p>BS1-1 (Position: N 0 18 57.0 E 33 57 49.4)</p> 		
<p>BS1-2 (Position: N 0 24.7 E 33 57 20.0)</p> 		
<p>BS1-3 (Position: N 0 18 12.1 E 33 56 34.3)</p> 		

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
<p>Environmental and Social Issues:</p> <ul style="list-style-type: none"> The seasonal wetland was highly modified. <p>Technical Issues:</p> <ul style="list-style-type: none"> Soft Ground 	<ul style="list-style-type: none"> The poles will be installed at approximately 100m apart to avoid the trees columns and ridges. To ease the poles will be installed in the wetlands the poles, treatment should be away from the low columns not to obstruct the flow of water. Cleaning of the vegetation and excavation will be limited to the area where the electricity poles will be installed.

3. Attendants


Preparatory Survey Team (SCA)	District Officials
<p>BEA Engineer: <i>[Signature]</i> Philip Sanyal</p> <p>BEA Environmental Officer: <i>[Signature]</i> Philip Sanyal</p> <p>Chief Consultant: <i>[Signature]</i> Philip Sanyal</p> <p>Environmental Consultant: <i>[Signature]</i> Philip Sanyal</p>	<p>District Local Official: <i>[Signature]</i> Samwonge Abulul</p>

Date: 23 June, 2011

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda










Location/Conditions: Wetlands

Location:



Conditions:

The area has two seasonal wetlands Nafere seasonal wetland and Nafere with tributaries like-Horse. The vegetation was in its natural state but the wetlands were used for grazing and watering animals. Seasonal wetland and stream was observed passing both sections of Bukeme - Mwendu-Tyran and its fork - Munduli (See BS1-2 and BS1-3).

Location	Focus Point	Surrounding Area
<p>BS1-1 (Position: N 0 18 57.0 E 33 57 49.4)</p> 		
<p>BS1-2 (Position: N 0 24.7 E 33 57 20.0)</p> 		
<p>BS1-3 (Position: N 0 18 12.1 E 33 56 34.3)</p> 		

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
<p>Environmental and Social Issues:</p> <ul style="list-style-type: none"> The seasonal wetland was highly modified. <p>Technical Issues:</p> <ul style="list-style-type: none"> Soft Ground 	<ul style="list-style-type: none"> The poles will be installed at approximately 100m apart to avoid the trees columns and ridges. To ease the poles will be installed in the wetlands the poles, treatment should be away from the low columns not to obstruct the flow of water. Cleaning of the vegetation and excavation will be limited to the area where the electricity poles will be installed.

3. Attendants

Preparatory Survey Team (SCA)	District Officials
<p>BEA Engineer: <i>[Signature]</i> Philip Sanyal</p> <p>BEA Environmental Officer: <i>[Signature]</i> Philip Sanyal</p> <p>Chief Consultant: <i>[Signature]</i> Philip Sanyal</p> <p>Environmental Consultant: <i>[Signature]</i> Philip Sanyal</p>	<p>District Local Official: <i>[Signature]</i> Samwonge Abulul</p>

Date: 23 June, 2011

The Preparatory Survey on the Project for Rural Electrification Phase II in the Republic of Uganda

1. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
Environmental and Social Issues <ul style="list-style-type: none"> Seasonal wetlands were observed in low lands in the wetland forest vegetation. Water pools at the low elevations were located at the lower points of wetlands. Development (roads, bridges, animal, elephant pens, residential, others) facilities, etc.) 	<ul style="list-style-type: none"> The Project Road will be designed to avoid such points and will proceed. The poles will be installed at approximately 100m apart to avoid the low elevations and streams. In case the poles are installed in the wetlands, the poles' location will be away from the low elevations to avoid obstruction of the flow of water. Change of the vegetation and elevation will be limited in the area where the electricity poles will be installed.
Technical Issues <ul style="list-style-type: none"> Soft Ground 	

2. Attendants

Preparatory Survey Team (JICA)	District Officials
REA Engineer REA Environmental Officer Chief Consultant Environmental Consultant Date: 30/06/11	District Environment Officer District Environment Officer District Environment Officer

The Preparatory Survey on the Project for Rural Electrification Phase II in the Republic of Uganda

1. Location/Conditions: Wetlands

Location/Conditions: Wetlands	Conditions
District: Bugiri Sub-District: Ntungwe 	Permanent and seasonal wetlands were observed but some are highly modified mainly with agricultural activities (rice, maize, cassava and vegetables). One permanent wetland was observed at about 20 degree width with paddy field (See H01-4).

Location	Focal Point	Surrounding Area
H01-1 Position: N0 27 04 9 E03 28 37 S 	Mainly seasonal wetland with some culture 	Mainly agriculture
H01-2 Position: N0 27 34 9 E03 42 08 S 	Submerged seasonal wetland with rice culture 	Paddy field
H01-3 Position: N0 27 11 2 E03 44 18 S 	Seasonal wetland seasonal wetland with rice culture 	Paddy field

The Preparatory Survey on the Project for Rural Electrification Phase II in the Republic of Uganda

Location	Focal Point	Surrounding Area
H01-4 Position: N0 27 04 9 E03 28 37 S 	Mainly seasonal wetland with some culture 	Mainly agriculture
H01-5 Position: N0 27 34 9 E03 42 08 S 	Submerged seasonal wetland with rice culture 	Paddy field
H01-6 Position: N0 27 11 2 E03 44 18 S 	Seasonal wetland seasonal wetland with rice culture 	Paddy field
H01-7 Position: N0 27 04 9 E03 28 37 S 	Mainly seasonal wetland with some culture 	Mainly agriculture
H01-8 Position: N0 27 34 9 E03 42 08 S 	Submerged seasonal wetland with rice culture 	Paddy field
H01-9 Position: N0 27 11 2 E03 44 18 S 	Seasonal wetland seasonal wetland with rice culture 	Paddy field

The Preparatory Survey on the Project for Rural Electrification Phase II in the Republic of Uganda

Location	Focal Point	Surrounding Area
H01-4 Position: N0 27 04 9 E03 28 37 S 	Mainly seasonal wetland with some culture 	Mainly agriculture
H01-5 Position: N0 27 34 9 E03 42 08 S 	Submerged seasonal wetland with rice culture 	Paddy field

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
Environmental and Social Issues <ul style="list-style-type: none"> Seasonal and permanent wetlands observed in low lands were highly modified. Water pools at the low elevations were located at the lower points of wetlands. Development (roads, bridges, animal, elephant pens, residential, others) facilities, etc.) 	<ul style="list-style-type: none"> The Project Road will be designed to avoid such points and will proceed. The poles will be installed at approximately 100m apart to avoid the low elevations and streams. In case the poles are installed in the wetlands, the poles' location will be away from the low elevations to avoid obstruction of the flow of water. Change of the vegetation and elevation will be limited in the area where the electricity poles will be installed.
Technical Issues <ul style="list-style-type: none"> Soft Ground 	

3. Attendants

Preparatory Survey Team (JICA)	District Officials
REA Engineer REA Environmental Officer Chief Consultant Environmental Consultant Date: 27/06/11	District Environment Officer District Environment Officer District Environment Officer

1. Location/Conditions: Central Forest Reserve

District: Bugisu

Location: The Central Forest Reserve (CFR) is situated in the northern part of the project area, near the border with the Central Forest Reserve (CFR) subproject area. It is located in the northern part of the project area, near the border with the Central Forest Reserve (CFR) subproject area. It is located in the northern part of the project area, near the border with the Central Forest Reserve (CFR) subproject area.

Local Point: The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road.

Surrounding Area: The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest.

Issues	Mitigation Measures
<p>Environmental and Social Issues:</p> <ul style="list-style-type: none"> The road that the Project Route is proposed along passes through CFR at about 4 km. Some trees on the 33kV distribution lines may be affected on the north side. <p>Technical Issues:</p> <ul style="list-style-type: none"> None 	<p>The Project Route will be designed to pass the north side of the road to avoid a plantation. The Project Route will be shifted to the south in some sections.</p> <ul style="list-style-type: none"> The poles will be installed at approximately 100m apart to minimize the number of poles in the area. It will be recommended that the poles be installed in the north side and encourage replanting of other trees.

Preparatory Survey Team (JICA)	District Officials
<p>REA Engineer: <i>[Signature]</i></p> <p>REA Environmental Officer: <i>[Signature]</i></p> <p>Chief Consultant: <i>[Signature]</i></p> <p>Environmental Consultant: <i>[Signature]</i></p>	<p>District Environment Officer: <i>[Signature]</i></p>

Date: 27/06/11

1. Location/Conditions: Cultural Property

District: Bugisu

Location: The cultural site (Kakuba) is located on the northern side of the road in the CFR. The site is surrounded by tall trees.

Local Point: The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road.

Surrounding Area: The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest.

Issues	Mitigation Measures
<p>Environmental and Social Issues:</p> <ul style="list-style-type: none"> The cultural site (Kakuba) is located on the road in the Project Route is designed. <p>Technical Issues:</p> <ul style="list-style-type: none"> None 	<p>The cultural site will not be impacted by the Project Route as it will be designed along the opposite side of the road (the southern side).</p>

Preparatory Survey Team (JICA)	District Officials
<p>REA Engineer: <i>[Signature]</i></p> <p>REA Environmental Officer: <i>[Signature]</i></p> <p>Chief Consultant: <i>[Signature]</i></p> <p>Environmental Consultant: <i>[Signature]</i></p>	<p>District Environment Officer: <i>[Signature]</i></p>

Date: 27/06/11

1. Location/Conditions: Wetlands

District: Nwoya District, District Environment Officer

Location: The wetlands are located in the northern part of the project area, near the border with the Central Forest Reserve (CFR) subproject area. It is located in the northern part of the project area, near the border with the Central Forest Reserve (CFR) subproject area.

Local Point: The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road. The local point is located near the road to the north side of the road.

Surrounding Area: The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest. The surrounding area is a mix of agricultural land and forest.

Location	Local Point	Surrounding Area
BC-1 Position: 02 44 0 833 0 35.7	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-2 Position: 06 11 31.2 833 04 36.2	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-3 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)

Location	Local Point	Surrounding Area
BC-4 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-5 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-6 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-7 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-8 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-9 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-10 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-11 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-12 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-13 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-14 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-15 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-16 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-17 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-18 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-19 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)
BC-20 Position: 06 18 27.4 833 05 25.6	Wetlands (shrubland) situated near the road.	Field (33kV) cables and poles (vegetation cleared)

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda

Location	Project Name	Administrative Area
Busoga Division, District of Iganga	Busoga Division, District of Iganga	Busoga Division, District of Iganga

2. Specific Issues and Mitigation Measures

Issues	Mitigation Measures
Environmental and Social Issues <ul style="list-style-type: none"> Residential buildings are established close to the substation site. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. 	<ul style="list-style-type: none"> The Project Route will be designed to pass behind the buildings. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land.
Technical Issues <ul style="list-style-type: none"> The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. 	<ul style="list-style-type: none"> The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land. The site will be avoided in agricultural land.

3. Attendants

Preparatory Survey Team (JICA)	District Officials
JICA Engineer: [Signature] JICA Environmental Officer: [Signature] Chief Consultant: [Signature]	District Livelihoods Officer: [Signature] Date: 6/27/2011

Drawings

The Preparatory Survey on the Project for Rural Electrification Phase III in the Republic of Uganda

1. Location/Conditions: Settlement

Location: Nansinyiro (Lat/Long: 0°30' N/33°00' E) District: Iganga
 Environmental Officer: [Signature]

2. Specific Issues and Mitigation Measures

Location	Focal Point	Surrounding Area
NGS Position: N175 194 E11 92 30A 	Residential houses are built close to the substation.	Building former estate.

Issues	Mitigation Measures
Environmental and Social Issues <ul style="list-style-type: none"> The Project Route will affect the residential buildings along the road at about 400 meters. 	<ul style="list-style-type: none"> The Project Route will be designed to pass behind the buildings. It will consequently connect to the Nansinyiro-Lugala Prisons Road.
Technical Issues <ul style="list-style-type: none"> The site is too narrow to pass the Project Route along the road at about 400 meters. 	

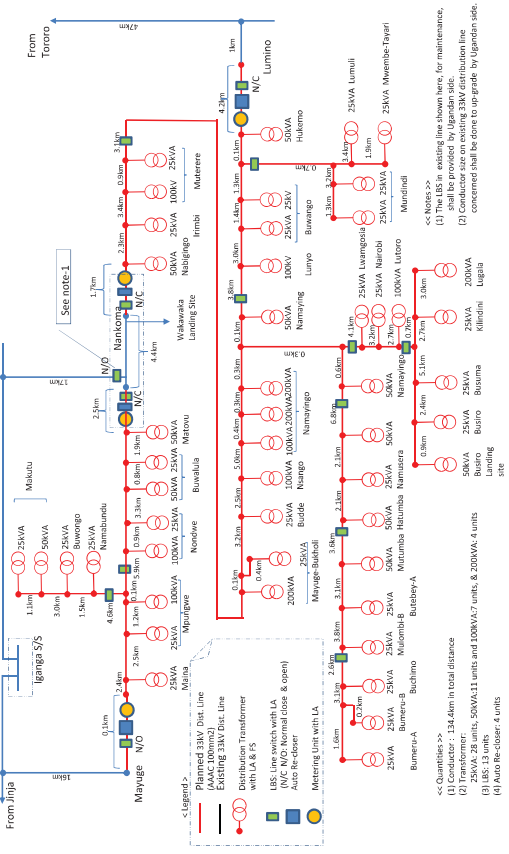
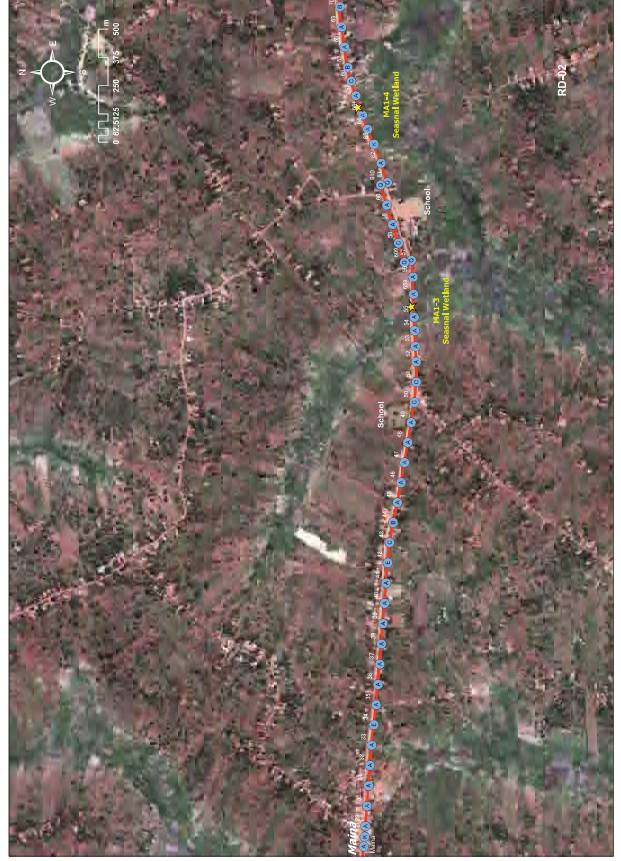
3. Attendants

Preparatory Survey Team (JICA)	District Officials
JICA Engineer: [Signature] JICA Environmental Officer: [Signature] Chief Consultant: [Signature]	District Livelihoods Officer: [Signature] Date: 6/27/2011

Contents of Drawings

- 1. Single Line Diagram of the Project**
 DWG No. UD3-E1: 33kV Distribution Network Diagram on the Project (Mayuge - Lunino)
- 2. Route Map of the Project**
 DWG No. R-01: Route Map of the Project
 DWG No. RD-01-RD-35: Detail Route Map of the Project
- 3. Pole Assembly Drawings for Distribution Lines**

DWG No. T-01	Pole Type A	Intermediate Pole (Line Angle: 0 - 5 degree)
DWG No. T-02	Pole Type B	Light Angle Pole (Line Angle: 5 - 20 degree)
DWG No. T-03	Pole Type C	Heavy Angle Pole (Line Angle: 30 - 50 degree)
DWG No. T-04	Pole Type D	Heavy Angle Pole (Line Angle: 50 - 90 degree)
DWG No. T-05	Pole Type E	Section Pole (Horizontal Arrangement)
DWG No. T-07	Pole Type G	Terminal Pole
DWG No. T-08	Pole Type H	Load Break Switch (LBS) Pole
DWG No. T-09	Pole Type J	T-off Pole (Branch)
DWG No. T-10	Pole Type I	Transformer Pole (Line end)
DWG No. T-11	Pole Type K	Transformer Pole (on Line)
DWG No. T-12	Pole Type M	Bulk Metering Unit Pole
DWG No. T-13	Pole Type N	Connection Plan to the existing line (extension type)
DWG No. T-14	Pole Type Q	Sharp Angle Pole (Line Angle: 90 - 90 degree) (Horizontal)
DWG No. T-15	Pole Type R	Auto Re-closer Pole
DWG No. T-16	Pole Type W	Intermediate Pole (area to be flooded)



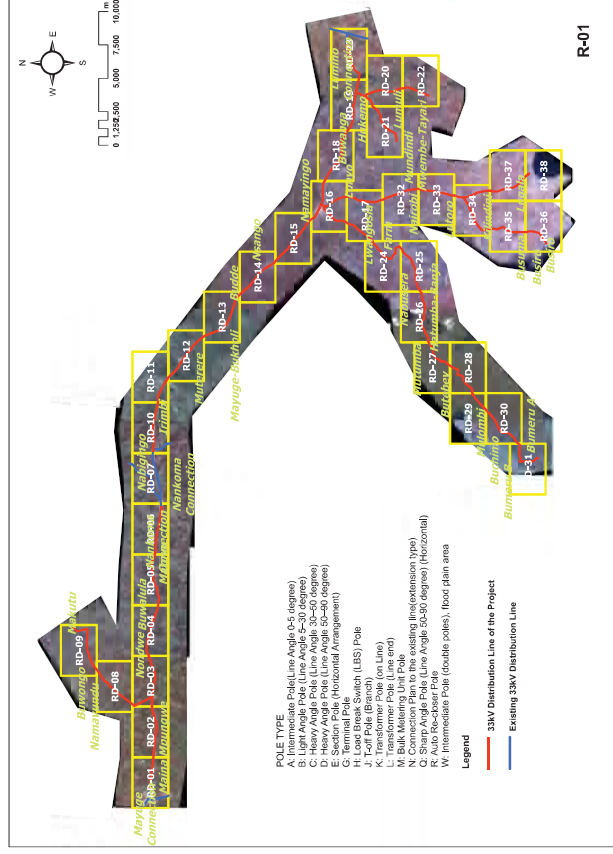
UGS-E-1 33kV Distribution Network Diagram on the Project (Mayuge-Lumino)

Legend:

- Proposed 33kV Dist. Line
- Existing 33kV Dist. Line
- (AAC 100mm²)
- Distribution Transformer with LA & FS
- LBS-Line switch with LA (N/C N/O: Normal close & open)
- Auto Recloser
- Metering Unit with LA

Notes:

- (1) Conductor: 134.4km in total distance
- (2) Transformer: 250kVA:11 units and 100kVA:7 units, & 200kVA: 4 units
- (3) Pole: 25kVA: 28 units, 50kVA:11 units and 100kVA: 4 units
- (4) Auto Rec: 4 units



Legend

- 33kV Distribution Line of the Project
- Existing 33kV Distribution Line

POLE TYPE

- A. Intermediate Pole (Line Angle $\le 45^{\circ}$ degree)
- B. Terminal Pole (Line Angle $\le 45^{\circ}$ degree)
- C. Heavy Angle Pole (Line Angle 30°-60° degree)
- D. Light Angle Pole (Line Angle 50°-90° degree)
- E. Terminal Pole (Horizontal Arrangement)
- F. Terminal Pole (Vertical Arrangement)
- G. Terminal Pole (Vertical Arrangement)
- H. Lead Break Switch (LBS) Pole
- I. Transformer Pole (on Line)
- J. Transformer Pole (on Line end)
- K. Transformer Pole (on Line end)
- L. Transformer Pole (on Line end)
- M. Transformer Pole (on Line end)
- N. Cross Arm Pole (on Line end)
- O. Sharp Angle Pole (Line Angle 50°-90° degree) (Horizontal)
- P. Auto Recloser Pole
- Q. Intermediate Pole (rodable poles), floor 4th m area

