EASTERN NILE TECHNICAL REGIONAL OFFICE (ENTRO)

Resettlement Action Plan Ethiopia

Final Report

October 2006

Ethiopia-Sudan Power System Interconnection ESIA

Grant No: PHRD TF051889
Project ID No: P074011

SMEC

In Association with ASSOCIATED CONSULTANTS & PARTNERS Ltd, Sudan

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ABBREVIATIONS

AAOV	Annual Average Output Value
ADB	Asian Development Bank
CBO	Community Based Organization
EEPCO	Ethiopian Electricity and Power Corporation
EMP	Environmental Management Plan
ENSAP	Eastern Nile Subsidiary Action Program
ENTRO	Eastern Nile Technical Regional Office
ESIA	Environmental and Social Impact Assessment
GRC	Grievance Redress Committee
IAPs	Interested and affected parties
IDEN	Integrated Development of the Eastern Nile
IMU	Internal Monitoring Organization
kV	kilo volt – 1,000 volts
KEBELE	Smallest Administrative Unit (Ethiopia)
NBI	Nile Basin Initiative
NEC	National Electricity Corporation (Sudan)
NGO	Non Governmental Organisation
PAPs	Project Affected People
OP	Operational Policy of the World Bank
RAP	Resettlement Action Plan
RFP	Request for Proposals (RFP No. ENTRO-IDF-003/04)
RP	Resettlement Programme
RoW	Right of Way
SAPS	Subsidiary Action Programmes
SVP	Shared Vision Programme
TOR	Terms of Reference
WB	World Bank
WOREDA	District Level Government Administrative Division (Ethiopia)

EXECUTIVE SUMMARY

This document is a Resettlement Action Plan (RAP) for the construction of a power transmission link between Ethiopia and Sudan. The RAP has been developed to meet the requirements set out by the Government of Ethiopia and the World Bank for the Project in relation to resettlement and compensation. Separate RAP reports have been prepared for each of the Project components in Ethiopia and Sudan as requested by the World Bank.

RAP is an information-gathering and analytical process that helps to design development that has least impact on affected communities. Its objectives are to evaluate all physical or economic impacts, displacement, or temporary or permanent loss of assets or facilities that may be experienced by Project-affected communities. It thus identifies people affected by the Project, the nature and degree of the impacts on them, measures taken to minimise the effects and compensation and other assistance to be delivered to affected people for unavoidable impacts.

The Ethiopia-Sudan Power System Interconnection Project

The Ethiopia-Sudan Power System Interconnection Project's long-term development objective is to promote regional power trade through coordinated planning and development of power generation and power interconnections of multi-purpose water resources development. The immediate objective is to facilitate cross-border trade between the two countries to optimize utilization of existing and planned generation capacity. The expected output is a high-voltage transmission line connecting the two countries. The Project is a part of the Strategic Action Program under the Nile Basin Initiative established to promote poverty alleviation, growth and improved environmental management.

The four main Project components have been identified:

- Construction of transmission interconnection between Ethiopia and Sudan: A 230 kV line, complete with terminal substations, a fibre optic telecommunications system and supervisory control and data acquisition (SCADA) – the subject of this RAP.
- An Environmental Management Plan: that will be designed in accordance with recommendations made by the ESIA.
- Institutional Strengthening and Capacity Building: The establishment of operating rules for the interconnected system and the training of personnel in power system and design, and interconnected system operation and regulation.
- Establishment of a Coordinated Unit for Power Trade: Transformation of the coordination unit established for the regional investment study into a regional power trade coordination unit.

The World Bank has classified the Project as a Category B project requiring a full Environmental and Social Impact Assessment (ESIA) and a Resettlement Action Plan (RAP) as a separate report.

Resettlement Action Plan

The Resettlement Action Plan is conducted to ensure that a systematic assessment of potential losses will be made and action taken to minimize damage or loss to affected people by the construction of the proposed transmission line. It considers loss of access to resources (dwellings, crops, woodlots, grazing lands, wells, businesses, cultural properties and social services) or temporary displacement due to construction (e.g. earth-moving, tower construction, the laying out of lines and other installation activities). Resettlement may occur where transmission lines run above domestic dwellings or social services.

The RAP Final Report builds upon the following sources:

- Broad consultation with project stakeholders
- Rapid surveys of all route Options

- 100% household census of Option C;
- Sample household and socio-economic surveys of Option B1 and B2;
- General socio-economic survey of Option A
- Previous Study: IVO International Ltd. (1995) "Ethiopia-Sudan Power Systems Interconnection Study Project. Phase 1. Feasibility Study Update. Socio-Economic and Environmental Study Report." Report to Ethiopian Electric Light and Power Authority and National Electricity Corporation, Sudan.
- Parallel Study: Fingrid Oyj, Hifaboy and Sogreah Consultants (2005) "Ethiopia-Sudan Power Systems Interconnection Project, Feasibility Study Update."
- Three-day Workshop on the Ethiopia-Sudan Power System Interconnection Project hosted by ENTRO and EEPCo, Addis Ababa, (November 23-25, 2005)

Socio-Economic Profile of Project Affected Areas

Within Ethiopia, the proposed transmission line routings run through the Amhara, Oromiya and Benishangul-Gumuz Regions.

The main ethnic group in the Amhara Region is Amhara, with minor representation of the Weto, Hemra and Agew. In the Oromiya Region, the major group is Oromo, with minor representation of Amhara, Gurage and other smaller groups. In the Benishangul-Gumuz Region, the Gumuz, Berta, Oromo and Amhara people can be found. The majority are Amharigna and Oromiffa speakers, although other languages are spoken too. The major religious affiliations are Orthodox Christianity and Islam.

The majority of people in the Project affected areas are dependent upon land as the basis of socio-economic subsistence. In the Amhara Region of Ethiopia, for instance, agriculture accounts for 63% of the regional GDP, and nearly 90% of the population derives its livelihoods from agriculture and allied activities (Bureau of Finance and Economic Development, 2004). Crop production in the form of cereals, pulses, oil seeds, fibres and root crops, and animal husbandry are the major agricultural activities in the region. Although the area is known for its various water resources and irrigable land potentials, the majority of farmers pursue rain-fed agriculture.

Cultivation practices have generally shaped Ethiopia's settlement profile. Small-scale subsistence farming is the predominant agricultural practice and farmers tend to reside on their properties which are scattered across the countryside. Where roadside villages occur, families tend to take advantage of commercial opportunities presented by through-traffic by constructing small kiosks, tea and coffee houses and other small businesses. Social services in the smaller villages may amount to no more than an Elementary school, and are therefore negligible. Most of the larger towns, on the other hand, will have some kind of health service facility (e.g. a clinic or dispensary) and other social services (e.g. a secondary school, a prison, veterinary services, etc.).

Smaller villages are provided with minimal health and educational services, while larger towns have a more developed services infrastructure. In general, however, the Project affected areas are exceptionally poorly serviced.

Scope of Land Acquisition and Resettlement on the Three Proposed Routes

The Resettlement Action Plan has focused on three potential routes that were identified for the Ethiopia-Sudan Power System Interconnection Project:

<u>Option C: Bahir Dar - Metema (then Metema to Gedaref in Sudan)</u>

Option C is situated in the south and north Gonder zones of the Amhara Region in Ethiopia and the Al Qadarif State in Sudan. It commences at the substation in Bahir Dar and loosely follows the all-weather road through the mountain town of Gonder (Azezo) and on to the substation at Shehedi. It continues into Sudan via the border towns of Metema and Gallabat, and terminates at the substation at Gedaref.

The total tie-line of Option C is 446 kms: 296 km in Ethiopia and 150 km in Sudan.

The topography between Bahir Dar to Gonder (Azezo) commences on the flood plains to the south and east of Lake Tana. Towards Gonder (Azezo), the area is dramatically transformed into precipitous mountains. From Gonder (Azezo) to Shehedi, the road descends into a landscape that is utilized largely for small-scale subsistence cultivation and communal grazing. Towards the border with Sudan, the terrain levels out into lowland savannah woodland and into an indigenous forest area managed by the Amhara Region as a 'greenbelt'.

Option C has been recommended in the 'Ethiopia-Sudan Power System Interconnection Project Feasibility Study Update' (2005) as the preferred route based on technical and financial considerations. A new single circuit transmission line running parallel to an existing single circuit line from the substation in Bahir Dar to Gonder (Azezo) is required. EEPCo is in the process of installing a single circuit line along the Gonder (Azezo)-Shehedi component of the route. Tower benchmark surveys were completed in late 2005 and construction is presently underway. The same towers on this portion of the alignment will be utilised by upgrading from a single-circuit to a double circuit (245 kV level) transmission line. A new double circuit line is required between Shehedi and Metema. This being the case, it is expected that the Project will exact minimal additional impact on affected communities beyond the construction phase for this section of OptionC route.

Option B1: Debre Markos-Injibara-Border-Roseires (448km) & Option B2: Bahir Dar-Injibara-Border-Roseires (425km)

In Ethiopia, Option B is divided into B1 (Debre Markos-Injibara-Border: 366km) and Option B2 (Bahir Dar-Injibara-Border: 343km). These are more circuitous routes than Option C. Both Option B1 and B2 pass through continuous, intensively cultivated areas in Ethiopia, and the Consultant estimates that substantial compensation will have to be paid for impact to farmlands, woodlots and Eucalyptus plantations. In addition, some 275 residential dwellings will be directly affected by the transmission line.

Option A: Gedo-Assosa-Kurmuk (Ethiopia)-Roseires (Sudan)

Based in the Oromiya and Benishangul-Gumuz Regions in Ethiopia, Option A is regarded by the 'Ethiopia-Sudan Power System Interconnection Project Feasibility Study Update' (2005) as the least viable of the three proposed routes based on technical and financial criteria. This Option connects the substation at Gedo with the towns of Nekemte, Ghimbi, Assosa and Kurmuk in Ethiopia (a distance of 474km) from where it proceeds to the Roseires substation in Sudan. The route has a total line length in Ethiopia and Sudan of 614 km. Option A is therefore the longest route option, much of which passes through mountainous and heavily forested terrain that lacks an all-weather road infrastructure.

Summary of the Main Scope of Resettlement/Relocation Impacts

Because of the linear nature of a transmission line development, it is estimated that the Ethiopian-Sudan Power System Interconnection Project will have minimal impact on communities or persons, and on private or common property assets. However, compensation will be due where towers or Project right-of-way (RoW) affects residential dwellings or social services (which will pose health and safety problems); will fragment cultivated fields and compromise productivity and income; will involve the removal of fruit-bearing trees and other economically valuable natural resources, or may partially or totally disturb cultural properties such as churches, mosques, or archaeological sites. Although the Project will have minimal impact upon PAPs, site-specific relocation may have to occur where access routes, line corridors or transmission towers are to be located.

Project impact is anticipated to occur predominantly during the construction phase with the importation of skilled workers into the area, and the construction of work camps and temporary access roads. While major attention will be focused on loss of income due to temporary disturbance to crops or grazing areas, and on health conditions related to the influx of workers from outside the region (HIV/AIDS being the major concern), positive opportunities to PAPs may be presented in

the form of temporary employment, as well as through income generated by the sale of food to immigrant workers. For the most part, however, compensation is expected to be characterized by a large number of small payments for the temporary loss of assets.

Recommendations

It is the opinion of the Consultant that Option C is the preferable route for the following reasons:

- Option C will be the most cost effective of the three route options;
- The line is located in regions where there is scattered inhabitation and where there will be minimal impact to PAPs;
- The line is directly linked with an all-weather road system from Bahir Dar to Metema. This will add significant value to both the construction and the maintance of the line, and reduce impact to farmlands and residences through the construction of additional access routes;
- In Ethiopia, the transmission line will be linked to local electricity infrastructure that will provide separate, but complementary tangible Project benefits to PAPS. This is an important component of the Project, linking it to the broader rural development and poverty alleviation programme in the country;
- The transmission line will build upon a comparable roads and local electricity infrastructure, thus supporting the notion of an inclusive Project profile, built upon transboundary partnerships and exchange.

Poverty Alleviation

Ethiopia has amongst the lowest level of electricity generation per capita in the world. For example, only 13% of the population has access to electricity (Ethiopia: Sustainable Development and Poverty Reduction Program, 2002).

Electricity is essential to the development of agro-processing industries, commercial enterprises and irrigation facilities in the rural areas. The Consultant believes that by providing local electricity to PAPs - either directly through the financing of local distribution lines, or indirectly, by reinvesting a proportion of the economic benefits of the Project into rural electrification - the Project will be enhancing overall poverty reduction and rural development efforts in the two affected countries.

Electricity supplied to rural towns would replace/reduce the consumption of woody biomass and petroleum products used for cooking, lighting, and motive power. It would support development in the agricultural sector (irrigation pumps, poultry, animal husbandry, preservation of products); in the commercial sector (shops, bars, and restaurants); to small and medium industries (flour mills, rural water supply installations, tanneries, and coffee processing plants), to the residential sector (lighting, heating, and cooking), to education (kindergarten, elementary schools, junior secondary schools, secondary schools and technical colleges), and to the health sector (pharmacies, clinics, health centers and hospitals). In brief, the Project would assist in the facilitation of economic growth in Project affected areas and create long-term employment opportunities for the poor, including women, thereby increasing income levels and reducing poverty.

Summary of Impacts

The following tables summarise permanent and temporary Project impacts and compensation cost estimtes for route Option C.

MATRIX OF PROJECT IMPACTS: OPTION C

Route Option	Line Length (km)	No. of Towers	No. of Permanently Affected Hectares (tower bases)	No of Temporarily Affected Hectares (RoW)	No. of Buildings within Residential Households to be Permanently Relocated	Main area of impact
C	**296**	**603**	**2.95**	**532.0**	**283**	**Farmlands Houses Eucalytpus trees**

Route Section	Total No. of PAPS Surveyed	Total No. of PAPs to be Relocated	No. PAPS to Lose Land Temporarily	No. PAPS to Lose Land Permanently	Temporary Loss of Land Along RoW (ha)	Permanent Loss of Land due to Towers
Bahir Dar-Gonder (Azezo) **137.5 km**	1877	221	1296	360	318	274 towers 1.34 ha
Gonder (Azezo)-Shehedi **122 km**	1005	46	793	256	184	256 towers 1.25 ha
Shehedi-Metema **36.5 km**	325	16	245	64	30	73 towers 0.36 ha
Total 296 km	**3207**	**283**	**2334**	**680**	**532**	**603 towers** **2.95 ha**

TOTAL COMPENSATION COSTS FOR OPTION C

Route Option	Route Section	Total (USD)
Option C	1. Bahir Dar-Gonder (Azezo)	1,033,774
	2. Gonder (Azezo) –Shehedi	68,183*
	3. Shehedi-Metema	18,469
Total		**1,120,426**

* Compensation estimate for adding a second circuit to the Gonder-Shehedi section single circuit line currently under construction by EEPCO.

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መድእ መልሶ ሰፈራው በሚመለከታቸው ማህበረሰቦች ላይ የሚደረሰው ተፅዕኖ በተቻለ መጠን የሚሆን አድርጎ የልማት ዕቅድ ለመንደፍ እንዲቻል እገዛ የሚያበረክት መረጃን የመሰብሰብና የመተንተን ሂደት ነው። አለማዎቹም በፕሮጀክት ጉዳት የሚደረስባቸው ማህበረሰቦች ላይ የሚከሰተውን ሁሉንም ሬዚካላዊ ወይም አካላዊ ወይም ኢኮኖሚያዊ ተፅእኖ መፈናቀል ወይም ጊዚያዊ ወይም ቋሚ የንብረትና የህብት ውድመት መገምገም ናቸው። ስለዚህ በፕሮጀክቱ የሚጎዱ ሰዎችን፣ የሚደርስባቸው ተፅእኖ ተፈጥሮና መጠን ጉዳቶችን ለመቀነስ መውሰድ ያለበትን እርምጃና ካሳ እንዲሁም ሊወገዱ በማይችሉ ተፅዕኖዎች የተነሳ ጉዳት ለደረሰባቸው ሰዎች ሊሰጡ የሚገባቸውን ሊሉች እርዳታዎች ለይቶ ያስቀምጣል።

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አራቱ የፕሮጀክት ዋነኛ ክፍሎች ተለይተው ተቀምጠዋል።

- በኢትዮጵያና በሱዳን መካከል የኢሊክትሪክ ሀይል ማስተላለፊያ መስመር ማንባታ። የ230 ኪቮ መስመር፣ በተርሚናል ንዑስ ጣቢያዎች የተሟላ የፋይበር ኦፕቲክስ የቴሌኮሙኒኬሽን መስመርና በበላይ ተቆጣጣሪነት የሚከናወን ቁጥጥርና መረጃ የማጠናቀር ሥራ (በቁመማ) የዚህ ፕሮጀክት (መድእ) ጉዳዮች ናቸው።

- የአካባቢያዊ ስራ አመራር እቅድ አማጪማ በሚሰጠው አስተያየት ወይም ምክር መሰረት ዲዛይኑ ይዘጋጃል።

- ተቋማዊ ጥንካሬና አቅም ማንባታ። ለተገናኘው ስርዓት የሚሆኑ የስራና የተማባር መመሪያዎች እንዲኖሩ ማድረማ፣ በሃይል ስርዓቱ ውስጥ የሚሠሩ ሠራተኞችን ማሰልጠን እንዲሁም የተገኛኘው ስርዓት አፐሬሽንን መቅረፅና ደንቦችን ማውጣት።
- ለኃይል ንማድ የሚውል የማስተባበሪያ ክፍልን ማዋቀር። ለክልላዊ የኢንቨስትመንት ጥናት የተመሰረተውን የማስተባበሪያ ክፍል ወደ ክልላዊ የኢሊክትሪክ ሀይል ንማድ ማስተባበሪያ ክፍልነት ማሸጋገር፣

የአለም ባንክ ፕሮጀክቱን የተሟላ የአካባቢያዊያዊና ማህበራዊ ጫና (አማጫ) ወይም የአንድምታ ጥናትና የመልሶ ሰፈራ የድርጊት መርሀ-ግብር (መድአ) በተለያየ ሬፖርት በሚፈልገው ምድብ "ለ" ውስጥ አካቶታል።

የመልሶ ሰፈራ የድርጊት መርሀ-ግብር

የመልሶ ሰፈራ የድርጊት መርሀ-ግብር ተግባር ላይ የዋለው ሊከሰቱ የሚችሉ ጉዳቶች በስርአት መጠናታቸውን ለማረጋገጥና በታቀደው የኢሊክትሪክ ሀይል ማስተላለፊያ መስመር መዘርጋት በሰዎች ላይ ሊደርስ የሚችለውን ኪሳራ ወይም ጉዳት ለመቀነስ የሚያስችል እርምጃ ለመውሰድ ነው። ወደ ሀብቶች የመሄሻ መንገዶች እጦትን (መኖሪያ ቤቶች፣ አዝርአቶች፣ የደን ቦታ፣ የግጦሽ መሬት፣ የውሃ ጉድጓዶች፣ ንግዶች፣ ባህላዊ ንብረቶችና ማህበራዊ አገልግሎቶች) ወይም በማንባታው ምክንያት የሚከሰት ጊዜያዊ መፈናቀልን (ለምሳሌ የመሬት ዝውውር፣ የአምድ ማንባታ፣ የመስመሮች መዘርጋትና ሌሎች የተከላ እንቅስቃሴዎች) ከማምት ውስጥ ያስገባል። የኢሊክትሪክ ሀይል ማስተላለፊያ መስመሮች በአካባቢው መኖሪያ ቤቶችና ማህበራዊ ግልጋሎቶች ላይ በሚያልፍበት ወቅት ቋሚ የመልሶ ሰፈራ እርምጃ ሊወሰድ ይችላል።

የመልሶ ሰፈራ የድርጊት መርሃ ግብር የመጨረሻ ሪፖርት በሚከተሉት ምንጮች ላይ የተመሰረተ ነው፡-

- ከፕሮጀክት ባለድርሻዎች ጋር ሰፊ ምክክር ማድረግ፣
- ስለሁሉም የኢሊክትሪክ መስመር መተላለፊያ መስመር ላይ የሚገኙ አማራጮች ፈጣን ቅኝት ወይም የጸሰሳ ጥናት ማድረግ፣
- በ"ሐ" አማራጭ የአዝብ ቆጠራ ወይም ጥናት 100% ማካሄድ፣
- በአማራጭ "ለ1" እና "ለ2" የቢተሰብ ናሙና እና የማህበረ ኢኮኖሚያዊ ጥናት ማካሄድ
- የአማራጭ "ሀ" አጠቃላይ የማህበረ ኢኮኖሚያዊ ጥናት፣
- የቀድሞ ጥናት፡- አይቪኡ ኢንተርናሽናል ሊሚትድ (*1995* አኢአ) "Ethiopia-Sudan Power Systems Interconnection study Project Phase 1 Feasibility study up date. Socio Economic & Environmental Study Report" የኢትዮ-ሱዳን የኢሊክትሪክ ሀይል መስመር ማነናኛ ፕሮጀክት የተሻሻለ የአዋጭነት ጥናት የማህበረ ኢኮኖሚያዊና አካባቢያዊ ጥናት ሪፖርት ለኢትዮጵያ የኢሊክትሪክ ሀይል ባለስልጣን እና ለሱዳን ብሔራዊ የኢሊክትሪሲቲ ኮርፖሬሽን የቀረበ ሪፖርት።
- ተጓዳኝ ጥናት ሬንማሪድ አይኢ፣ ሂፉቦይ እና ሶማሪያህ አማካሪዎች (*2005* አኢአ) " Ethiopia-Sudan Power Systems Interconnection Project, Feasibility Study Update" የኢትዮጵያ-ሱዳን የኢሊክትሪክ ሀይል መስመር ማነናኛ ፕሮጀክት የተሻሻለ የአዋጭነት ጥናት ።
- በኢትዮ-ሱዳን የኢሊክትሪክ ሀይል መስመር ማነናኛ ፕሮጀክት ላይ በኢንትሮ እና በኢኢኃኮ አስተናጋጅነት የተካሄደ የሶስት ቀን ወርክሾፕ፣ አዲስ አበባ (ከህዳር *14-16 1998* ዓ.ም)

በፕሮጀክት ጉዳት የሚደርስባቸው ክልሎች ማህበረ ኢኮኖሚያዊ ሁኔታ

የታቀደው የኢሊክትሪክ ሀይል ማስተላለፊያ መስመር ኢትዮጵያ ውስጥ በአማራ፣ በኦሮሚያና በቤኒሻንጉል-ጉሙዝ ክልሎች አቋርጦ ያልፋል።

በአማራ ክልል ውስጥ የሚገኘው ዋነኛ ብሔረሰብ የአማራ ብሔረሰብ ሲሆን የወይጦ፣ የሽሙራ እና የአገው ብሔረሰቦችም በዚህ ክልል ውስጥ የሚኖሩ ህዝቦች ናቸው። በኦሮሚያ ክልል በዋነኝነት የኦሮሞ ብሔረሰብ ሲኖር በአነስተኛ ውክልና ደግሞ የአማራ፣ የጉራጌና ሲሎች አነስተኛ ቁጥር ያላቸው ብሔረሰቦች ይኖራሉ። በቤንሻንጉል ጉሙዝ ክልል ውስጥ ደግሞ የጉሙዝ፣ የበርታ፣ የኦሮሞና የአማራ ህዝብ ይኖራል። አብዛኛው ህዝብ አማርኛና ኦሮምኛ ይናገራል። ሲሎች ቋንቋዎችን የሚናገሩ ህዝቦችም አሉ። ዋነኞቹ ሃይማኖቶች ደግሞ የኦርቶዶክስ ክርስትናና እስልምና ናቸው።

በፕሮጀክቱ ጉዳት የሚደርስባቸው አብዛኞቹ ሶዎች የሚተዳደሩት በማብርና ሲሆን ማህበረ ኢኮኖሚያዊ መሰረታቸው መሬት ነው። ኢትዮጵያ ውስጥ በአማራ ክልል ለምሳሌ የክልላዊ ጠቅላላ የአገር ውስጥ የእርሻ ምርት (ጂዲፒ) ውስጥ 63% ነው። ከህዝቡ 90% የሚሆነው ኑሮውን የመሰረተው በማብርናና ተጓዳኝ የስራ እንቅስቃሴዎች ላይ ነው። (የፋይናንስና ኢኮኖሚያዊ ልማት ቢሮ እኤአ 2004)። በጥራጥሬ፣ በእህል ምርት፣ በቅባት እህሎች በሜሪሉትና በስራስር መልክ የሚመረት አዝርዕትና የእንስሳት እርባታ ስራ በክልሉ የሚከናወኑ ዋነኛ የእርሻ እንቅስቃሴዎች ናቸው። ክልሉ በውሃ ሃብቱና ሊታረስ በሚችል መሬት ከፍተኝነት ይታወቃል። አብዛኛው ህዝብ የዝናብ ውሃን መሰረተ ባደረገ የእርሻ ስራ ላይ ተሰማርቶ ይገኛል።

የእርሻ ስራና ክንውኖች በአጠቃላይ የኢትዮጵያን የህዝብ አሰፋፈር መልክና ቅርፅ አስይዘውታል። አነስተኛ መጠን ያለው የእርሻ ስራ ዋነኛው የእርሻ እንቅስቃሴ ነው። የገበሬዎች ኑሮ በገጠር ተበታትነው በሚገኙ ንብረቶቻቸው ላይ የተመሰረተ ነው ከመንገድ ዳርናዳር በተመሰረቱ መንደሮች ውስጥ የሚኖሩ ቤተሰቦች የትራፊክ ፍሰቱ በሚፈጥርላቸው የንግድ እድል ለመጠቀም አነስተኛ ኪዮስኮችን፣ የሻይና የቡና ቤቶች በመክፈት፣ እንዲሁም በሌለ ሲለ አነስተኛ ንግድ ኑሮአቸውን ይደጉማሉ። በትንንሽ መንደሮች ውስጥ የሚገኙ ማህበራዊ አገልግሎቶች ከአንደኛ ደረጃ ትምህርት ቤት በላይ የማይዘልቅ በመሆኑ ችላ ተብለዋል ማለት ይቻላል። በሌለ በኩልም በአብዛኞች ትልልቅ ከተሞች የተወሰነ አይነት የጤና አገልግሎት መሰረተ ልማት (ለምሳሌ ክሊኒክ ወይም ጤና ጣቢያ) እና ሲሎች ማህበራዊ አገልግሎቶች (ለምሳሌ ሁለተኛ ደረጃ ትምህርት ቤት፣ ማረሚያ ቤት፣ የእንስሳት ህክምና አገልግሎቶች ወዘተ) ይገኛሉ።

ትልልቅ ከተሞች በጣም የዳበሩ የመሰረተ ልማት አገልግሎቶ ሲኖሯቸው ትንንሽ መንደሮች ውስጥ ያለው የጤናና የትምህርት አገልግሎት ዝቅተኛ ነው። ነገር ግን በአጠቃላይ ሲታይ በፕሮጀክቱ ጉዳት የሚደርስባቸው ክልሎች እጅግ በጣም ደካማ አገልግሎት የሚያገኙ ናቸው።

በታቀዱት ሶስቱ የኢሊክትሪክ መስመሮች መተላለፊያ ላይ ያለው የመሬት ይዞታና የመልሶ ሰፈራ ወሰን

የመልሶ ሰፈራው የድርጊት መርሃ-ግብር ለኢትዮጵያ-ሱዳን የኢሊክትሪክ ሀይል መስመር የማንኙነት ፕሮጀክት በተቀመጡ ሶስት መስመሮች ላይ ያተኩራል።

<u>አማራጭ "ሐ" ባህርዳር መተማ (ከመተማ ሱዳን ወደምገኘው ወደ ገዳሪፍ)</u>

አማራጭ "ሐ" ኢትዮጵያ ውስጥ በአማራ ክልል ሰሜን እና ደቡብ ጎንደር ዞኖች ውስጥ ይገኛል። ሱዳን ውስጥ ደግሞ አልቃደሪፍ ግዛት ውስጥ ይገኛል። መነሻው ባህርዳር ውስጥ የሚገኝ ንዑስ ጣቢያ ሆኖ ከረምት ከበጋ የሚያስኪደውን መንገድ ተከትሎ አዘዞ በምትባለው የበጎንደር ተራራማ ከተማ በኩል አድርጎ ሽሽዲ ወደሚገኝ

ው ንዑስ ጣቢያ ይዘልቃል። ከዚያም የድንበር ከተሞች በሆኑት በመተማና በጋላባት ከተሞች በኩል ወደ ሱዳን ይገባል። ገዳሪፍ ወደ ሚገኘው ንዑስ ጣቢያ ይደርሳል።

የአማራጭ "ሐ" ጠቅላላ የማንኙነት መስመር 446 ኪ.ሜ ሲሆን ይህም ኢትዮጵያ ውስጥ 296 ኪ.ሜ ሱዳን ውስጥ ደግሞ 150 ኪ.ሜ ይሸፍናል።

ከባህርዳር ወደ ጎንደር (አዘዞ) የሚያመራው የመሬት አቀማመጥ ከረማረጋማ መሬት ተነስቶ ወደ ጣና ሃይቅ ደቡብና ምስራቅ ያመራል። ወደ ጎንደር (አዘዞ) አቅጣጫ አካባቢው ዝቅው ያሉ ገደላማ ተራሮች የሞሰብት ነው። ከጎንደር (አዘዞ) ወደ ሽሽጲ አቅጣጫ ደግሞ መንገዱ በስፋት በአንስተኛ እርሻዎችና በጋራ የማጠሽ መሬት መካከል አሻቆልቁሎ ይወርዳል። በሱዳን በኩልም ሲሄዱ የመሬት አቀማመጡ በረጃጅም ሳር የተሸፈነ ጭው ያለ ሞታታም ሜዳ ይገኛል።

እኤአ በ2005 በተካሄደው የኢትዮጵያ ሱዳን የኢሊክትሪክ ሀይል መስመር ማንኙነት ፕሮጀክት የተሻሻለ የአዋጭነት ጥናት ላይ ቴክኒካዊና የፋይናንስ ምክንያቶችን ማምት ውስጥ በማስገባት አማራጭ "ሐ" ተማባራዊ እንዲደረማ ሀሳብ ቀርቧል። ኢትዮጵያ ውስጥ የኢሊክትሪክ ሀይል ማስተላለፊያ መስመሩ ከባህርዳር ንዑስ ጣቢያ ወደ ጎንደር (አዘዞ) ያለውን ነጠላ የሰርኪውት መስመር ተክትሎ ይሄዳል። የኢኢሃኮ የመስመሩን አካል ባለነጠላ ሰርኪውት መስመር ከጎንደር (አዘዞ) ወደ ሽሽጲ ዘርማቷል። የአምድ መትከያ ጥናት እኤአ በ2005 መጨረሻ ተጠናቋል። እንዲሁም መስመሩን የመዘርጋት በመካሄድ ላይ ይገኛል። ይህ መስመር ለፕሮጀክቱ ከተመረጠ ተመሳሳይ አይነት አምዶች ወይም የመስመር ተሸካሚዎች ጥቅም ላይ ይውላሉ። ስለዚህ በመዘርጋት ላይ ያለው የኢኢሃኮ መስመር ከነጠላ ሰርኪውት ወደ ጥንድ ሰርኪውት ደረጃውን ያሳድጋል። ሁኔታው እንዲህ ከሆነ የታሰበው ፕሮጀክት በሚመለከታቸው ማህበረሰቦች ላይ ሊያደርስ የሚችለው ጉዳት በምርጫ "ሐ" የመስመር ዝርጋታ ደረጃ በላይ ያነሰ ነው የሚሆነው።

<u>አማራጭ "ለ1" ደብረማርቆስ-እንጅባራ-ድንበር ሮሰይረስ (448ኪ.ሜ) እና አማራጭ ለ2 ባህርዳር-እንጅባራ-ድንበር-ሮሰይረስ (425 ኪ.ሜ)</u>

አማራጭ "ለ" ኢትዮጵያ ውስጥ፣ አማራጭ ለ1 (ደብረማርቆስ እንጅባራ-ድንበር 366 ኪ.ሜ) እና አማራጭ ለ2 (ባህርዳር-እንጅባራ-ድንበር 343 ኪ.ሜ) ተብሎ በሁለት ይከፈላል። እነዚህ መስመሮች ከአማራጭ "ሐ" በበለጠ ሁኔታ የተጠማዘዙ ናቸው።

አማራጭ ለ1 እና ለ2፣ ሁለቱም ኢትዮጵያ ውስጥ በማይቆራረጡና በተደጋጋሚ የታረሱ ክልሎችን አቆራርጠው ይሄዳሉ። አማካሪዎች በእርሻ መሬቶች፣ ጫካዎችና በባህርዛፍ ደኖች ላይ ለሚደርሰው ጉዳት በቂ ካሳ መክፈል አለበት የሚል ምክርን ይለማሳሉ። ከዚህ በተጨማሪ በጥቂቱ 275 የሚሆኑ የመኖሪያ ቤቶች በኢሊክትሪክ ሀይል ማስተላለፊያ መስመሩ በቀጥታ ጉዳት ይደርስባቸዋል።

<u>አማራጭ ሀ፡- ጌዶ-አሶሳ-ኩርሙክ (ኢትዮጵያ)-ሮሰይራስ (ሱዳን)</u>

"በኢትዮጵያ-ሱዳን የኢሊክትሪክ ሀይል መስመር መገናኛ ፕሮጀክት የተሻሻለ የአዋጭነት ጥናት" (እኤአ 2005 ቴክኒካዊና የፋይናንስ መመዘኛዎችን መሰረት በማድረግ ኢትዮጵያ ውስጥ በኦሮሚያና በቤኒሻንጉል ጉምዝ የሚያልፈው አማራጭ "ሀ" ከቀረቡት ሶስት አመራጮች የመጨረሻ ተቀባይነት ያለው አመራጭ ነው። ይህ አማራጭ ጊዶ የሚገኘው ንዑስ ጣቢያ ከነቀምት፣ ጊምቢ፣ አሶሳ እና ኩርሙክ ከተሞች ጋር ተገናኝቶ (ኢትዮጵያ ውስጥ ያለው ርቀት 474 ኪ.ሜ) ሱዳን ውስጥ እስከ ሮሰይረስ ንዑስ ጣቢያ ድረስ ይጓዛል። መስመሩ በድምሩ ከኢትዮጵያ እስከ ሱዳን የሚኖረው ርዝመት 614 ኪ.ሜ ነው። ስለዚህ አማራጭ "ሀ" ረጅም የመስመር አማራጭ ነው። ተራራማ ቦታዎችንና በክረምትና በበጋ የሚያስኪድ የመንገድ መሰረተ ልማት እጥረት ያለባቸውን ከፍተኛ ደን የለበሱ ገደላማ አካባቢዎችን አቋርጦ ያልፋል።

የመልሶ ሰፈራ ተፅዕኖዎች ዋነኛ ወሰን ማጠቃለያ

የኢሊክትሪክ ሀይል ማስተላለፊያ መስመር ልማት ባለው በጠባቡ ሰንጥቆ የመሄድ ተፈጥሮ ምክንያት የኢትዮጵያ ሱዳን የኢሊክትሪክ ሀይል መስመር ማገናኛ ፕሮጀክት በማህበረሰቦች ወይም በማሰባሰቦች እና በግልና በጋራ ንብረትና ሀብቶች ላይ የሚያስከትለው ተፅእኖ ወይም ጉዳት ዝቅተኛ ይሆናል። ነገር ግን የኢሊክትሪክ ሀይል መስመር ተሸካሚ አምዶች ወይም የፕሮጀክት ትክክለኛ መንገድ (አርአደብሊው) በመኖሪያ ቤቶች ወይም ማህበራዊ አገልግሎቶ ላይ (የጤና እና የደህንነት ችግሮን ሲያስከትል) ጉዳት ሲያስከትሉ፣ ማሰትም የእርሻ መሬቶችን ሲቆራርጡ፣ ምርታማነትንና የገቢ መጠንን ሲቀንሱ ይህም ፍራፍሬ የሚያፈሩ ዛፎችን ሲያስወግዱ እና በሰሉት ኢኮኖሚያዊ ጠቀሜታ ባላቸው የተፈጥሮ ሀብቶች ላይ ጉዳት ሲያደርሱ ወይም አብያተ ቤተክርስቲያን፣ መስጊዶችን ወይም የአርኪኦሎጂ ጥናት ስፍራውን በመሳሰሉ ባህላዊ ንብረቶች ላይ በከፊልም ሆነ ሙሉ ለሙሉ ሲያከናውኑ ሲያስከትሉ የካሳ ክፍያ መክፈል አለበት። ፕሮጀክቶች በተጠቀሱት ቦታዎች ላይ የሚኖራቸው አወንታዊ ተፅእኖ ዝቅተኛ ቢሆንም እንኳ የመገናኛ መስመሮች ወይም የኢሊክትሪክ ሀይል ማስተላለፊያ ተሸካሚ አምዶች የት ላይ በአማራ ሞኑት ድጋሚ እንደሚተክሉ በዝርዝር መቀመጥ አለበት።

የፕሮጀክት አለታዊ ተፅዕኖ በዋነኝነት የሰለጠነ የሰው ሀይል /ሰራተኞች ወደ ክልሉ መጥተው የዝርጋታ ስራ ሲሰራ ይከሰታል ተብሎ ይጠበቃል። በዚህ ወቅት የስራ ካምፖችና ጊዜያዊ የመገናኛ መንገዶች ስራ ይከናወናል። በጊዜያዊ ረብሻ የተነሳ በአህል አምራችና በማጠሽ ክልሉች ላይ ሊደርስ በሚችለው የገቢ ኪሳራ ወይም መጥፋት እና ሰራተኞች ከክልሉ ውጭ በመነሳት ወደ ክልሉ ከመጡረፋቸው ጋር ተያይዞ ለሚከሰት የጤና ሁኔታ (ኢችኢቪ/ኤድስ ዋነኛው ጉዳይ ነው) ከፍተኛ ትኩረት ይሰጠዋል። በፕሮጀክቱ ሊጎዱ የሚችሉ ህዝቦች ጊዜያዊ ስራ በማማኘት፣ እንዲሁም ለሚመጡት ሰራተኞች ምግብ እየሸጡ የገቢ ምንጭ በመፍጠር ረገድ አዎንታዊ እድሉች ሊፈጠሩላቸው ይችላሉ። ነገር ግን በአብዛኛው ለሚከሰት ጊዜያዊ የንብረት ኪሳራ ወይም ጉዳት ብዙ የትንንሽ የካሳ ክፍያዎች ይከፍላሉ ተብሎ ይጠበቃል።

ለውሳኔ የቀረቡ አስተያየቶች

አማካሪው በሚከተሉት ምክንያቶች የተነሳ አማራጭ "ሐ" ተመራጭ መስመር ነው፣ የሚል አስተያየት አላቸው።

- አማራጭ "ሐ" ከሶስቱ የመስመር አማራጮች ከወጪ አንፃር በጣም አዋጭ ነው።
- መስመሩ የሚዘረጋው ተበታትነው የሰፈሩ ነዋሪዎች ባሉበትና በፕሮጀክቱ በሰዎች ላይ ሊደርስ የሚችለው ጉዳት ዝቅተኛ ነው።
- መስመሩ ከባህርዳር ጀምሮ ሱዳን ውስጥ እስከ ገዳሪፍ ድረስ ክረምት ከበጋ ከሚያስኬድ የመንገድ መስመር ጋር ቀጥተኛ ማንኙነት አለው። ይህ ደግሞ መስመሩን በመገንባትና በመጠገን ስራ ላይ ትርጉም ያለው እርባናን ይጨምራል። እንዲሁም ተጨማሪ የመገናኛ መንገዶችን በመገንባት በእርሻ መሬቶችና በመኖሪያ ቤቶች ላይ ሊደርስ ይችል የነበረን ጉዳት ይቀንሳል።
- የኢሊክትሪክ ሀይል ማስተላለፊያ መስመሩ ኢትዮጵያ ውስጥ ከየኢሊክትሪቢቲ መሰረተ ልማት ሊገናኝ ይችላል። ይህም በፕሮጀክቱ ጉዳት ለሚደርስባቸው ሰዎች ነፃ ነገር ግን ትርጉም ያላቸው፣ አስፈላጊ ጥቅማጥቅም ይሠጣል። ፕሮጀክቱን ከአገሪቱ ስራ የገጠር ልማትና የድህነት ቅነሳ ፕሮግራም ጋር ማገናኘት የፕሮጀክቱ ጠቃሚ ገፅታ ነው።

- የኢሊክትሪክ ሀይል ማስተላለፊያው መስመር የሚዘጋጀው መንገዶችንና ላይና የአገር ውስጥ የኢሊክትሪክ መሰረተ ልማቶችን ተከትሎ ነው፣ በድንበር አቋራጭ በሆነ አጋርነትና ልውውጥ ላይ የተገነባና አካታች የሆነው የፕሮጀክት ፕሮፋይልን ሀሳብ ይደግፋል።

ድህነት ቅነሳ

የኢሊክትሪክ ማመንጨትነፍስ ወከፍ ድርሻ ሲሰላ ኢትዮጵያና ሱዳን በአለም ውስጥ ዝቅተኛ ደረጃ ላይ ከሚመደቡ አገሮች ውስጥ ናት። ለምሳሌ ከኢትዮጵያ ከህዝብ መካከል የኢሊክትሪክ አገልግሎት የሚያገኘው 13% ብቻ ነው (Ethiopia Sustainable Development and Poverty Reduction Program 2002)

ኢሊክትሪሲቲ ለአማሮ-ፐሮሰሲንግ ኢንዱስትሪዎች፣ ለንግድ ድርጅቶችና በገጠር ክልሎች ውስጥ ለሚኖሩ የመስኖ ስራ መሰረተ ልማቶች እድገት ወሳኝነት አለው። አማካሪው (ኮንሰልታንቱ) የአካባቢ የስርጭት መስመሮችን በፋይናንስ በመደገፍ በቀጥታ አካሂድ ወይም ከፐሮጀክቱ ከሚገኘው ኢኮኖሚ የተወሰነውን መዋዕለ ንዋይ ለገጠር ኢሊክትሪክ ለመዝርጋት ማለትም በተዘዋዋሪ መንገድ በፐሮጀክት ጉዳት ለደረሰባቸውና በቅርብ ለሚገኙ ሰዎች ኢሊክትሪክ በማቅረብ ፐሮጀክቱ በሁለቱ አገሮች ያሉትን አጠቃላይ የድህነት ቅነሳ እና የገጠር ልማት ጥረቶች ያጎለብታል፣ ወይም ወደላቀ ደረጃ ያሸጋግራል፣ የሚል እምነት አለው።

ወደ ገጠር ከተሞች የሚቀርብ የኢሊክትሪክ ሀይል ለምግብ ማብሰያ፣ ለብርሃንና ለሞተር ሀይል ጥቅም ላይ የሚውሉ የደን ሀብቶችንና የፔትሮሊያም ምርቶችን ተክቶ ያገለግላል። በእርሻው ዘርፍ ልማትን (የመስኖ ፓምፖች፣ የደሮ እርባታና የደሮ ተዋፅኦ ስራ፣ የእንስሳት እርባታ፣ ምርቶችን ማስቀመጥ)፣ የንግድ ዘርፍ ልማትን (ሱቆች፣ ቡና ቤቶችና ሬስቶራንቶች) ይደግፋል። እንዲሁም አነስተኛና መካከለኛ ኢንዱስትሪዎችን (የዱቄት ፋብሪካ፣ የገጠር ውሃ አቅርቦት)፣ የቆዳ ፋብሪካዎች እና የቡና ማዘጋጃ ፋብሪካዎች)፣ የመኖሪያ ቤትን (ብርሃን፣ ሙቀትና ምግብ ማብሰያ)፣ የትምህርት (መዋዕለ ህፃናት፣ አንደኛ ደረጃ ት/ቤት፣ መለስተኛ ሁለተኛ ደረጃ ት/ቤቶች ሁለተኛ ደረጃ ት/ቤቶችና የቴክኒክ ኮሊጆች እና የጤና ዘርፍን (ፋርማሲዎች፣ ክሊኒኮች፣ የጤና ማዕከሎችና ሆስፒታሎች) ልማታቸውን ይደግፋል። ለማጠቃለል ያክል ፐሮጀክቱ ጉዳት በሚያደርስባቸው ክልሎች ውስጥ ኢኮኖሚያዊ እድገት እንደፋጠን እገዛ ያደርጋል። እንዲሁም ሌቶችን ጨምሮ፣ ለድሆች ለረጅም ጊዜ የሚቆዩ የስራ እድሎችን ይፈጥራል። በዚህም የገቢ መጠን እንዲጨምርና ድህነት እንዲቀነስ ያደርጋል።

ስለጉዳት/ሚና የተደረገ ማጠቃለያ

የሚከተሉት ሰንጠረዦች የመስመር አማራጭ "ሐ" እና "ለ" በፐሮጀክቱ የሚከሰቱ ዘላቂና ጊዜያዊ ተፅዕኖዎችን ማጠቃለያ ለዚሁ የመስመር አማራጭ የተገመተን የካሳ ክፍያ ዋጋ ያቀርባሉ።

የፐሮጀክት ሚናዎች ማትሪክስ አማራጭ "ሐ"

የመስመር አማራጭ	የመስመር ርዝመት (ቢ.ሚ)	የመስመር ተሸካሚ አምዶች ብዛት	ድሚ ጉዳት የሚደርስበት መሬት በሄክታር የአምድ መሰረቶች	ጊዜያዊ ጉዳት የሚደርስበት መሬት በሄክታር (እር ኦ ደብሊው)	በድሚነት በሌላ መተካት ያለባቸው በመኖሪያ ቤቶች መካከል የሚገኙ ህንፃዎች ብዛት	ሚና የሚደርስበት ዋነኛ አካባቢ
ሐ	296	603	2.95	532.0	283	የእርሻ መሬቶች፣ ቤቶች ባህርዛፍ ዛፎች

የኢሊኽትሪክ መስመር መተላለፊያ ክፍል	የተዋሉ የፐሮጀክት ድርጊት አቅጾች ድምር	መደለለ ስፍራ መሣመር ያለባቸው የፐሮጀክት አቅጾች ድምር	ለጊዜው መሬት የሚለቁ የፐሮጀክት ድርጊት አቅጾች ብዛት (በሄክታር)	በዘለቄታ መሬት የሚለቁ ብዛት	የኢሊኽትሪክ መስመር የማላለፍ መብት በሚኖርበት አካባቢ ለጊዜው መሬት የሚለቁ	በእምጾት ምክንያት በዘለቄታ መሬት የሚለቁ
ባህርዳር-ጎንደር (አዘዞ) 137.5 ኪሜ	1877	221	1296	360	318	274 ዐምዶች 1.34 ሄክታር
ጎንደር (አዘዞ)-ሸኽዲ 122 ኪሜ	1005	46	793	256	184	256 ዐምዶች 1.25 ሄክታር
ሸኽዲ-መተማ 36.5 ኪሜ	325	16	245	64	30	73 ዐምዶች 0.35 ሄክታር
ድምር 296 ኪሜ	**3207**	**283**	**2334**	**680**	**532**	**603 ዐምዶች 2.95 ሄክታር**

ለአማራጭ "ሐ" የሚከፈል ጠቅላላ የካሳ ወጭ

የመስመር አማራጭ	የመስመር ክፍል	ድምር (በአሜሪካ ዶላር)
አማራጭ "ሐ"	1. ባህርዳር-ጎንደር (አዘዞ)	1,033,774
	2. ጎንደር (አዘዞ) ሸኽዲ	68,183*
	3. ሸኽዲ-መተማ	18,469
ድምር		**1,120,423**

* በኢሂኮ በመዘርጋት ላይ የሚገኘው ጎንደር-ሸኽዲ ነጠላ ሰርኪውት ላይ ሁለተኛ ሰርኪውት በመዘርጋት ስራ ላይ የተገመተ የካሳ መጠን።

1 Introduction

1.1 Project Background

The Nile Basin Initiative (NBI), established formally in 1999, provides for an agreed basin-wide framework to fight poverty and promote socio-economic development in the ten Nile countries (Burundi, Rwanda, Uganda, Tanzania, Kenya, Sudan, Eritrea, the Democratic Republic of Congo (DRC), Ethiopia and Egypt – see Figure 1). The NBI is led by a Council of Ministers in charge of Water Affairs from the member states, (Nile-COM) with the support of a Technical Advisory Committee (Nile-TAC), and a Secretariat (Nile-SEC). A Strategic Action Program including both basin-wide projects (Shared Vision Program) designed to lay the foundation for cooperative action and two sub-basin programs (Subsidiary Action Programs) of investments, is established to promote poverty alleviation, growth and improved environmental management.

The Shared Vision Program (SVP) is a broad based program of collaborative action to exchange experience, create an enabling environment for investment, enhance capacity, and build trust. The SVP comprises seven projects ready for implementation that have been endorsed by the Nile-COM. These projects include: Trans-boundary Environmental Action; Regional Power Trade; Efficient Water Use for Agricultural Production; Water Resources Planning and Management; Confidence-Building and Stakeholder Involvement (Communication); Applied Training; and Socio-Economic Development and Benefit-Sharing.

The Subsidiary Action Programs (SAPs) are parallel, sub-basin investment programs, identified by sub-groups of the riparian countries. The Eastern Nile Subsidiary Action Program (ENSAP) currently includes the countries of Egypt, Ethiopia, and Sudan. The goal of the Eastern Nile cooperation is to develop the water resources of the Eastern Nile Basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples. Local and national programs will address what needs to be done at local and national levels, while sub-basin cooperation will address development opportunities with trans-boundary implications. Guided by a common understanding of basic principles, the program will initially focus on water and water-related resources in identified areas of cooperation, including: irrigation and drainage development, power development and trade; watershed management, sustainable management of lakes and linked wetland systems, river regulation, flood and drought management, pollution control and water quality management, water use efficiency improvement, and integrated water resources management. In the longer term, it is envisioned that water resources development and management will serve as a catalyst for greater regional integration, with benefits far exceeding those derived from the river itself.

The first ENSAP Program is the Integrated Development of the Eastern Nile (IDEN). The program has been prepared in conformity with the objectives and guiding principles of ENSAP. This program initiates a regional, integrated, multi-purpose program through a first set of investments which confer tangible, win-win gains and demonstrates joint action between the Eastern Nile countries. The IDEN project cycle comprises identification, preparation, design, appraisal, and negotiation prior to project effectiveness, and implementation.

The initial set of proposed projects within the IDEN framework is listed below. The Ethiopia-Sudan Power System Interconnection ESIA Consultancy relates to the first of the IDEN projects.

- **Ethiopia-Sudan Transmission Interconnection Project**
- Watershed Management Project
- Eastern Nile Power Trade Investment Program
- Eastern Nile Planning Model Project
- Baro-Akobo Multi-purpose Water Resources Development Project
- Flood Preparedness and Early Warning Project
- Irrigation and Drainage Project

1.2 Previous Studies

The 1982 Master Plan Study of power development for the Ethiopian Electric Light and Power Authority - EELPA (now EEPCO) first identified the possibility of a power interconnection between Ethiopia and Sudan. A feasibility study entitled "Regional Interconnection of Power Systems between Ethiopia and Sudan" financed by the Finnish International Development Agency (FINNIDA) was completed in February 1988. Although the study found the project to be technically and economically viable no further progress was made to implement the project until in 1994 EELPA and the National Electricity Corporation of Sudan (NEC) agreed to update the feasibility study with a view to proceeding to completing engineering design and preparation of tender documents.

Consultant IVO International Ltd was engaged to undertake the feasibility update and completed its report (Ethiopia-Sudan power Systems Interconnection Study Project: Phase I, Feasibility Study Update) in 1995. Unlike the initial investigation, this study update included an assessment of the socio-economic and environmental aspects of the project. A summary of the findings is presented in Section 6 of this Report.

The 1995 investigation recommended a 425km, 230kV single circuit transmission line with self supported lattice steel towers, upgrading/replacement of existing substations, a fibre optics telecommunications system and supervisory control and data acquisition. A further option of a 400/500 kV line was to be considered during final design. In all, the investigation considered three alternative route options in detail.

- Option A: Ghedo-Nekemte-Ghimbi-Kurmuk-Roseires (614 km)
- Option B1: Debre Markos-Injibara-Roseires (425 km)
- Option B2: Bahir Dar-Injibara-Roseires (405 km)

Option B1, with the lowest total cost and acceptable technical performance was recommended to be selected as the least-cost tie-line solution. An additional option, C, starting in Bahir Dar and continuing northwest, either passing Lake Tana on the eastern (Route C1) or western side (Route C2) and continuing to the border town of Metema and then to the Sennar substation via El Gedaref in Sudan was only briefly considered because of its greater length and difficult terrain for line construction.

1.3 Present Study

Further progress with implementation of the project again stalled until it was taken on board by ENTRO and received donor financial support through the World Bank. The Ethiopian and Sudanese Governments agreed to implement the project and initially carried out line surveys for the Debre Markos to Roseires route which was the recommended route in the 1995 study. Following the line survey, the Ethiopian and Sudanese Governments appointed (through tender) consultants Hifab Oy and SOGREAH Consultants to prepare a feasibility study update which was commenced in January 2005. A draft Report was completed in May 2005 (Ethiopia-Sudan Power Systems Interconnection Project Feasibility Study Update, Draft Report, May 2005) which recommended Option C route include a new section from Bahir Dar to Gonder (Azezo). This new section was surveyed by EEPCO in early 2006. The report provides the most recent description of the proposed project and forms the basis of this ESIA/RAP Consultancy.

It was originally planned that the Feasibility Update Study and the ESIA/RAP studies would run in parallel with the latter providing input into the Feasibility Update Study. However, because of the delay in undertaking the ESIA/RAP, the Feasibility Study Update was finalised before the ESIA/RAP study is due for completion at the end of September 2006.

1.4 Contents of RAP Report

The World Bank has requested that separate RAP Reports be prepared for Sudan and Ethiopia although there will be only one ESIA Report covering both Sudan and Ethiopia. Both RAP Reports will include the following considerations with reference to all three Project Options for route sections within their respective countries.

- census and socio-economic survey information
- assessment of Project impacts, land acquisition and resettlement
- objectives, policy framework and compensation entitlement criteria
- framework for public participation, consultation and grievance redress
- relocation and rehabilitation options
- income restoration strategy
- institutional framework
- resettlement cost estimates and budget
- implementation arrangements and schedule
- monitoring and evaluation

1.5 Outline of RAP Report

This document is a Resettlement Plan (RAP) for the construction of a transmission link between Ethiopia and Sudan. The RAP has been developed to meet the Government of Ethiopia and the World Bank's requirements for the Project in relation to resettlement and compensation. It identifies people affected by the project, the nature and degree of the impacts on them, measures taken to minimise the effects and compensation and other assistance to be delivered to affected people for unavoidable impacts.

The Resettlement Action Plan has been undertaken to ensure that a systematic assessment of potential losses is made and action is taken to minimize damage or loss to project affected people. RAP considers loss of access to resources (crops, woodlots, grazing lands, wells, businesses and services, etc.) or temporary displacement due to construction (e.g. earth-moving, tower construction, the stringing of cables and other installation activities). Although minimal, some permanent relocation may occur where transmission lines run above domestic dwellings or social services.

RAP is an information-gathering and analytical process that helps to design development that has minimal impact on affected communities. Its objectives are to evaluate all physical or economic impacts, displacement, or temporary or permanent loss of assets or facilities that may be experienced by project-affected communities.

The Report builds upon the following sources:

- Broad consultation with project stakeholders
- Rapid surveys of all route Options
- 100% household census of Option C
- Sample household and socio-economic surveys of Option B1 and B2
- General socio-economic survey of Option A
- Previous Study: IVO International Ltd. (1995) "Ethiopia-Sudan Power Systems Interconnection Study Project. Phase 1. Feasibility Study Update. Socio-Economic and Environmental Study Report." Report to Ethiopian Electric Light and Power Authority and National Electricity Corporation, Sudan.
- Parallel Study: Fingrid Oyj, Hifaboy and Sogreah Consultants (2005) "Ethiopia-Sudan Power Systems Interconnection Project, Feasibility Study Update."
- Three-day Workshop on the Ethiopia-Sudan Power System Interconnection Project hosted by ENTRO and EEPCo, Addis Ababa, (November 23-25, 2005)

1.6 Report Framework

The Report framework has been informed by the following consideration:

- The legislative and administrative procedures regarding land tenure, land acquisition and use, and resettlement for Ethiopia.

- The presentation of information on the two countries in separate reports as requested by the World Bank.

2 Project Objectives, Policy Framework and Entitlements

The resettlement and compensation plan outlined in this Report has been prepared in accordance with the requirements outlined by the Government of Ethiopia and the World Bank while acknowledging the requirements of the Ethiopian Government and the trans-boundary nature of the Project.

2.1 Resettlement Objectives

The Resettlement Plan aims to ensure that the losses incurred by affected people are redressed such that Project affected Persons (PAPs) share project benefits, are assisted to develop their social and economic potential in order to improve or restore their incomes and living standards to pre-project levels and are not worse off than they would have been without the Project.

2.2 Resettlement Principles

The World Bank's requirements regarding involuntary resettlement are detailed in Operational Policy (OP) 4.12. The directive outlines the following principles:

• Acquisition of land and other assets, and resettlement of people will be minimized as much as possible by identifying possible alternative project designs, and appropriate social, economic, operational and engineering solutions that have the least impact on populations in the Project area.

• The populations affected by the Project are defined as those who may stand to lose, as a consequence of the Project, all or part of their physical and non-physical assets, including homes, homesteads, productive lands, commercial properties, tenancy, income-earning opportunities, social and cultural activities and relationships, and other losses that may be identified during the process of resettlement planning.

• All PAPs who are identified in the project impacted areas as of the date of the updated census and inventory of losses, will be entitled to be compensated for their lost assets, incomes and businesses at full replacement cost and provided with rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards, income earning capacity and production levels.

• All affected populations will be equally eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing, and any such factors that may discriminate against achieving the objectives outlined above.

• The rehabilitation measures to be provided are:

  - cash compensation for houses and other structures at replacement cost of materials and labour without deduction for depreciation or salvageable materials;
  - full title to replacement agricultural land for land of equal productive capacity acceptable to the PAP;
  - full title to replacement residential and commercial land of equal size acceptable to the AP or, at the informed decision of the PAP, cash for replacement land at replacement cost at current market value;
  - cash compensation for crops and trees at current market value; and

- relocation allowances and rehabilitation assistance.

• Sufficient time will be allowed for replacement structures to be built before construction begins

• Temporarily affected land from the construction of access routes or earth-moving activities will be restored to pre-project conditions

• The compensation and resettlement activities will be satisfactorily completed and rehabilitation measures in place and all encumbrances removed before the respective Governments and World Bank will approve commencement of civil works for that contract area

• Existing cultural and religious practices shall be respected and, to the maximum extent practical, preserved

• Adequate budgetary support will be fully committed and made available to cover the costs of land acquisition and resettlement and rehabilitation within the agreed implementation period

• Special measures shall be incorporated in the RAP and complementary mitigation and enhancement activities to protect socially and economically vulnerable groups such as women-headed families, children and elderly people without support structures and people living in extreme poverty

• Grievance procedures shall be established and in place and PAPs informed of them before any resettlement activities begin.

• Details of the RAP shall be distributed to the PAPs by the Client and placed in relevant stakeholder offices for the reference of PAPs as well any interested groups.

• Appropriate reporting, monitoring and evaluation mechanisms will be identified and set in place as part of the resettlement management system and an external monitor hired before commencement of any resettlement activities.

3 Methodology

3.1 General Considerations

Due to a delay in the commencement of the RAP, examination of the three route Options had to take place during the rainy season. This placed certain constraints on the field surveys, the most pressing being the inaccessibility of some parts of the routes due to poor road systems. In order to overcome this problem, the Consultant has applied a variety of methodologies to ensure that impact and compensation assessments are based on current and verifiable socio-economic and demographic information.

The Consultant has applied the following survey techniques:

Rapid surveys: used as an essential diagnostic tool to identify the respective alignment of power lines, intensity of impact, and sites of cultural significance. Rapid surveys have been useful particularly as a basis for the development of detailed survey methodologies. A socio-economic log profile of each route Option was compiled during the survey to provide basic impact assessment data.

Extensive field surveys: comprising detailed census/inventories with affected households as well as formal and semi-formal discussions with sample focus groups. Within this survey category, the following data collection techniques were applied:

- Maps (1:50 000 topographical maps, profile-, aerial- and land-use maps) were sourced to identify the alignment of transmission lines, land-use categories and common property resources, cultural property (graveyards, churches etc), road and transportation networks, the location of social services. Maps were also used to identify affected households, fields and natural resources and fixed assets.

- Population Census: An enumerated survey was conducted with affected communities on the entire Option C route according to the exact survey design for the transmission line as provided by EEPCo.

- Household, Livelihoods and Infrastructure inventories were used to assess: 1) land use categories and common properties; 2) an assets inventory (homestead, fences and out-buildings, trees, commercial properties etc.); and 3) social services infrastructure.

  The application of these surveys was determined by the availability of survey designs of the proposed transmission lines from EEPCo. Due to varying degrees of detail available for such baseline data, three levels of surveys were undertaken:

  - Where transmission line routes had been surveyed by EEPCo, and where tower benchmarks were specified, household surveys of 100% of affected houses were conducted (See Appendix 2, Photo 4).

  - Where no exact benchmark survey was available but alignments were marked on 1:50 000 topographical maps, sample surveys of the affected households were conducted;

  - Where no survey designs were available and the direction for the transmission line alignment was merely described (i.e. running parallel with a road system), a general socio-economic analysis was conducted.

- Socio-Economic Surveys were used to evaluate project impact and compensation parameters and to identify directly and indirectly affected persons. Socio-economic surveys were developed together with demographic information made available from local

administration offices, and from socio-economic indicators provided in relevant secondary sources.

- Discussion documents were designed to guide participatory discussions with:

  1) Focus groups (e.g. farmers' associations, women's groups, etc.) and
  2) Sector offices (e.g. district and/or regional administration offices, etc.)

Ethiopian Surveys

Two survey teams were mobilized in Ethiopia. One team focused on detailed household census and worked exclusively on Option C. The other conducted sample household surveys and general socio-economic analyses of Options B1 and B2, and Option A. The former team comprised specialist researchers and assistants selected from affected communities and sourced through local administration offices.

3.2 Methodologies Applied on Three Route Options

3.2.1 Option C

3.2.1.1 Route Description

The Project route is located in the Amhara Region in Ethiopia and crosses south and north Gonder zones. The proposed transmission line will pass over agricultural lands that are located at both high and lowland levels. For the most part, the project alignment will follow the transport corridor from Bahir Dar to Gonder (Azezo) to the substation at Shehedi, and on to Metema at the Sudanese border.

A single circuit line exists from Bahir Dar to Gonder (Azezo). EEPCo, through the international contractor, Energo Invest, is in the process of constructing a single circuit transmission line along the route from Gonder (Azezo) to Shehedi.

3.2.1.2 Sources of Information

- interviews with representatives from institutions relevant to the Project
- preliminary site visit to all sections of the route, and consultations with local officials and affected people
- detailed household surveys from Bahir Dar to Metema (100% affected households)
- interviews with governmental and non-governmental organizations relevant to the proposed project
- maps, secondary sources and related survey information

3.2.1.3 Survey Methodology

Focus group discussions
A template questionnaire was applied for discussions with PAPs, local village groups, public service workers (e.g. teachers and health care workers), NGOs and other relevant stakeholders.

Sector office discussions
A second questionnaire was applied for discussions with representatives of Regional Offices, (e.g. woreda and kebele), focusing on demographic data, land use and management practices, human settlement, infrastructure, local compensation guidelines, and other relevant infrastructural information.

Inventories

100% Household, agricultural and infrastructural inventories were conducted of every dwelling and/or property that will be affected by the alignment.

In Ethiopia, four survey teams were contracted, each comprising:

- A survey assistant: these team members were sourced from the international contractor, Energo Invest. These members had participated in cadastral survey of the EEPCO single circuit transmission line and were thus familiar with exact tower benchmarks;
- An enumerator: enumerators were responsible for filling in household, agricultural and social infrastructure inventory forms along the alignment;
- A Community Representative: a representative from each affected kebele was included in the team in order to secure local participation in the survey process, as well as to ensure that the owners of the damaged assets (land, tress and houses) were correctly registered.

3.2.2 Option B1 and B2

3.2.2.1 Route Description

Option B is divided into two routes: Option B1 (Debre Markos-Injibara-Border) and Option B2 (Bahir Dar-Injibara-Border). Both routes pass initially through heavily cultivated farmlands and large areas under commercial Eucalyptus or Black wattle plantations. The landscape is gently undulating and has few remaining indigenous forests.

3.2.2.2 Sources of Information

- preliminary site visits to each of the routes
- consultations with local officials and affected people
- household survey of 28% households along the route,
- interviews with representatives from institutions relevant to the Project
- interviews with governmental and non-governmental organizations relevant to the Project

As benchmark surveys were available for B1 (Debre Markos-Injibara) the following methodological framework was developed on the basis of route information charted by EEPCo surveyors onto 1:50 000 topographical and profile maps. Of the 275 households that will be affected by the transmission line, a survey of 78 of the households was conducted (28%). Additional data was collected from participatory discussions with focus groups with 11 of the 16 Woreda offices along the route alignment.

No benchmark survey was available for B2 (Bahir Dar-Injibara) although site observations were conducted of the approximate route.

3.2.2.3 Survey Methodology

Focus Group Discussions

A template questionnaire was used as a framework for participatory discussions with PAPs, public service workers (e.g. teachers and health care workers), NGOs and other relevant stakeholders.

Sector Office Discussions

A second questionnaire was used as a framework for discussions with representatives of Regional Offices, focusing on demographic data, land management and agricultural activities, local compensation guidelines, and other relevant infrastructural information.

Household Inventories

Household inventories of 28 % of affected households were conducted along Option B1.

3.2.3 Option A

3.2.3.1 Route Description

This route traverses through two Regions in Ethiopia. From Gedo to Assosa the line runs through the Oromiya Region; from Assosa to the Sudanese border at Kurmuk, it runs through the Benishangul-Gumuz Region.

This is the longest of the three proposed route Options. It initially traverses through populated farmland areas, and, towards the border with Sudan, enters a highly forested region occupied by the Berta ethnic group. The area is characterized by savannah grassland, indigenous forests, scattered dwellings and communal grazing lands.

3.2.3.2 Sources of Information

- rapid survey of the route
- consultations with local officials and affected people
- interviews with representatives from institutions relevant to the Project
- interviews with governmental and non-governmental organizations relevant to the proposed Project

3.2.3.3 Survey Methodology

No survey designs are available for Option A. Following baseline data provided by the 1995 Feasibility Study prepared by IVO International Ltd., the present RAP survey focused on updating socio-economic and livelihoods data at a general level. The survey has drawn on a rapid site survey, participatory discussions held with focus groups, relevant stakeholders and Sector Offices, on maps and on secondary data relevant to the Project affected area.

4 Socio-Economic Profile of Project Affected Areas

4.1 General Socio-Economic Profile of Project Affected Areas

The Federal Democratic Republic of Ethiopia is the second most populous country in Africa with a population of some 77 million, of which 88.8% are rural. Age distribution estimates for 2004 indicate that above 50% of the population of Ethiopia is less than 18 years of age.

4.1.1 Project Area

The three proposed transmission line routes traverse the Amhara, Oromiya and Benishangul-Gumuz Regional States of western Ethiopia (See Appendix 1, Figures 1 & 2).

The main ethnic group in the Amhara Region is Amhara, with minor representation of the Weto, Hemra and Agew. In the Oromiya Region, the major group is Oromo, with minor representation of Amhara, Gurage and other smaller groups. In the Benishangul-Gumuz Region, the Gumuz, Berta, Oromo and Amhara people can be found. The majority are Amharigna and Oromiffa speakers, although other languages are spoken too. The major religious affiliations are Orthodox Christianity and Islam.

The majority of Ethiopians in the given areas are dependent upon land as the basis of socio-economic subsistence. In the Amhara Region of Ethiopia, for instance, agriculture accounts for 63.1 percent of the regional GDP, and nearly 90% of the population derives its livelihood from agriculture and allied activities (Bureau of Finance and Economic Development, 2004). Crop production in the form of cereals, pulses, oil seeds, fibres and root crops, and animal husbandry are the major agricultural activities in the region. Although the area is known for its various water resources and irrigable land potentials, the majority of farmers pursue rain-fed agriculture.

Cultivation practices have generally shaped the settlement profile. In Ethiopia, where small-scale subsistence farming is the predominant agricultural practice, farmers tend to be located on their properties which are scattered across the countryside. Where roadside villages occur, families tend to take advantage of commercial opportunities presented by through-traffic by establishing small kiosks, tea and coffee houses and other income-generating activities. Social services in the smaller villages may amount to no more than an Elementary school, and are therefore negligible. Most of the larger towns, on the other hand, will have some kind of health service facility (e.g. a clinic or dispensary) and other social services (e.g. a clinic, occasionally a high school, a community centre, veterinary clinic, etc.).

4.2 Administrative Background

In Ethiopia, the Woreda is a local administrative body which is a governmental organization structured to implement federal and regional government policies and regulations. The highest decision making organ at the Woreda level is the Woreda Administrative Council, which is an elected political arm of the Woreda.

The Woreda administration has the responsibility to facilitate and monitor development activities that fall within its jurisdiction. Such responsibilities are discharged mainly by co-coordinating and supervising kebele offices to run their activities effectively.

Below the Woreda administration, and operating at the community level in both urban and rural areas, are kebele committees. These administrative committees are responsible for coordinating and organizing community development activities.

4.3 Women

The economic, social and political status of women in the entire Project affected area is very weak. For the most part, women are subject to early marriages after which their roles are largely confined to household management and agricultural production. They are generally economically dependent upon men who tend to make the decision as to how many children the family should have. Due to high mortality rates amongst children, women prefer to have more to compensate for high attrition rates.

In the rural areas in particular, women are burdened by back-breaking work. In addition to all food preparation, child rearing and domestic chores, they are responsible for land preparation, planting and weeding. Women are also the principle collectors of water and firewood, and in some instances, they have to walk long distances to acquire these resources for drinking and cooking.

Women's access to health care services is highly inadequate. The 1994 FDRE Ministry of Health (MOH) statistics indicate that maternal mortality rates in Ethiopia were 700 per 100,000. It also suggested that not more than 14% births in Ethiopia are attended by trained health care personnel.

Women's access to formal education is low in all Project affected areas. With the scarcity of educational facilities, families tend to privilege male children and literacy levels amongst girls and women are therefore significantly lower. With little access to formal employment, they consequently represent a negligible proportion of persons employed in professional, technical and administrative occupations. In both countries, girl school enrolment is considered a key factor in promoting wider economic and social development (UNDP Human Development Report 2001, UNDP Human Development Report 2002, UNDP Human Development Report 2003, UNDP Human Development Report 2004).

4.4 Children

Children are the most vulnerable members of the population to the affects of drought, famine, war and related displacement, and to the disintegration of families by poverty. A high percentage of children in the Project affected areas do not have access to formal education and are subject to various forms of child labour, namely livestock herding, and agricultural and domestic work. In the southern regions of the Sudanese Project affected areas, children have been co-opted into the civil war.

In general, infant mortality is high (under the age of 5 years) and most children lack access to good nutrition and basic health services. Given the high rate of HIV/AIDS in most of the Project affected areas, there exists little government infrastructure to support the increasing number of children who have been orphaned by the pandemic.

4.5 Housing

The quality of housing in the Project affected areas is poor. The majority of rural people live in wood and mud houses with thatched roofs. Houses tend to give shelter to both people and their livestock. The current stock of urban housing - most of which are constructed from mud brick and corrugated iron sheeting – is also insufficient and of very poor quality. A census taken in Ethiopia in 1994 indicates that some 70% of urban houses comprised only one room and a considerable proportion of the dwelling units are shared by more than one household (Amhara Conservation Strategy, vol.1, 1999).

4.6 Education

Ethiopia remains one of the least educated populations by sub-Saharan standards (Development Indicators of Amhara Region 2003/2004). While continuous improvements are being made, still

there is low educational coverage in the country. Some problems that the education system faces include:

- low investment in education;
- high adult illiteracy;
- poor quality of education;
- inequity in access (gender, rural-urban, regional);
- weak educational planning and management, and
- low public participation in educational decision-making.

4.7 Health and HIV/AIDS

As is the case in most areas of Ethiopia, communicable diseases and nutritional deficiencies are the major health problems experienced in the Project affected area. Poor environmental conditions and sanitation, and low health coverage (on average less than 45%) contribute, among other issues, to high morbidity and mortality of the population. Health services distribution is urban-biased, and rural health coverage is particularly weak. Nearly 50% of the health services in Ethiopia, for instance, are concentrated in main towns (OHAPCO Strategic Plan to Fight HIV/AIDs, 2002). Moreover, vaccine preventable infections are responsible for a high incidence of morbidity, mortality and disability amongst children and pregnant women. This is in part due to the lack of cold chains or refrigeration facilities for safe transportation and storage of vaccines, and to a weak health delivery system.

The most prevalent diseases in the Project area are:

- Malaria
- HIV/AIDs
- Tuberculosis
- Pyrexia (unknown origin)
- Gonococcal infections
- Gastritis and duodenitis
- Bronchopneumonia
- Rheumatism
- Helminthiasis
- Acute upper respiratory infections
- Infections of skin and subcutaneous tissue

HIV/AIDs is a rapidly growing new source of vulnerability in the region with a serious impact on efforts being made to enhance growth and poverty reduction. Women have greater vulnerability to HIV/AIDs than men due to a range of epidemiological, biological and socio-economic reasons.

While there are general trends towards health improvement, the status of HIV/AIDS is discouraging. Ethiopia is exhibiting rapidly rising infection levels. Although little data on HIV/AIDs is available in Sudan, UNAIDS estimates the adult infection rate to have been 2.6% at the end of 2001 (http://www.iss.co.za/AF/profiles/Sudan/GenInfo.html).

With the low capacity to deal with the crisis due to weak health infrastructure and widespread poverty in both countries, the projected social and economic impacts of HIV/AIDS are incalculable. Among the socio-economic impacts of the pandemic the most critical are demographic, health care economic impacts, an increased vulnerability and burden on women, and the rapidly increasing number of orphans (OHAPCO Strategic Plan to Fight HIV/AIDs, 2002).

4.8 Water and Sanitation

As with related social services infrastructures, the provision of domestic services such as water and sanitation in Project affected areas is very low. Problems related with scarcity of drinking water

supply and adequate sanitation services prevail. In the Amhara Region, for instance, only 10.3 % of urban dwellers receive clean water from properly constructed facilities. In the rural areas, this situation is significantly worse (Amhara Conservation Strategy, 1999).

Basic facilities for both solid and liquid waste disposal are almost entirely lacking. Many urban houses are without appropriate sanitation facilities and there are few public toilets. Poor sanitation has adverse effects on community health. Sanitation in rural areas is almost non-existent.

4.9 Food Security

Environmental problems in Ethiopia are experienced predominantly in the form of deforestation and soil erosion. Environmental degradation throughout the Project affected area is considerable, and is exacerbated by population growth and centuries of cultivation and abuse of natural resources.

The major problem of food security particularly amongst poor farmers and farmers in marginal areas, is the lack of agricultural development and extreme vulnerability to drought. The lack of irrigation and food storage infrastructure increase the risk of famine. Water harvesting and the development of small-scale irrigation would mitigate the impact of rainfall vulnerability or absence. In addition, food security would be improved through livestock development by way of improved breeds, veterinarian services and enhanced livestock marketing (Ethiopia: Sustainable Development and Poverty Reduction 2002).

Poverty reduction programmes in both countries confer that agriculture and rural development requires complementary and simultaneous development initiatives in non-agricultural sectors. Education, health, water supply, road and transport services, and small and medium industries development is considered critical for rural transformation and national development (*see Section 18: Recommendations).*

4.10 Rural Electrification

According to the publication 'Ethiopia: Sustainable Development and Poverty Reduction' (2002), Ethiopia has one of the lowest levels of electricity generation per capita in the world. Only 13% of the population has access to electricity. Electricity is thus a major constraint towards establishment of agro-processing industries, commercial enterprises and irrigation facilities in the rural areas. Besides, delivery of health and education services remains inefficient in the absence of electricity.

The publication suggests that electricity supply to rural towns would replace/reduce the consumption of woody biomass and petroleum products used for cooking, lighting, and motive power. Further, there is a particular demand for electricity in the agricultural sector (irrigation pumps, poultry, animal husbandry, preservation of products), in the commercial sector (shops, bars, and restaurants), in small and medium industries (flour mills, oil mills, rural water supply installations, tanneries, and coffee processing plants), in the residential sector (lighting, heating, and cooking), in education (kindergarten, elementary schools, junior secondary schools, secondary schools and technical colleges), and in the health sector (pharmacies, clinics, health centers and hospitals).

Provision of electricity would result in an increase in commercial activities while boosting the production of small and medium industries, such as the coffee and leather processing industries. In brief, it would facilitate all round economic growth in the rural areas and create employment opportunities for the poor, including women, thereby increasing income levels and reducing poverty.

5 Socio-Economic Profile of Option C

5.1 Project Area

Option C is located in South and North Gonder (Azezo) Zone of the Amhara Regional State of Ethiopia. It commences at the substation in Bahir Dar traverses through five Woredas, namely Bahir Dar, Libo Kemkem, Fogera, and Maksengit to the town of Gonder (Azezo). From Gonder (Azezo), it proceeds through four woredas, namely Gonder (Azezo) Zuria, Dembia, Chilga and Metema. The total line length within Ethiopia is 296 km (See Appendix 1, Figure 3).

TABLE 1. LIST OF ADMINISTRATIVE ZONES ALONG ROUTE C ALIGNMENT

Region/State	Zone/Locality	Woreda/ Administrative Area	Towns
Amhara Region, Ethiopia	South Gonder	Bahir Dar	Bahir Dar
		Dera	Dera
		Libo	Libo Kemkem
		Fogera	Wereta
		Maksengit	Maksengit
	North Gonder	Gonder (Azezo) Zuria	Gonder (Azezo) /Azezo
		Chilga	Aykel
		Dembia	Kola Diba
		Metema	Shehedi Metema

5.2 Environmental Background

The transmission line begins at the substation in Bahir Dar which is located on the southern shores of Lake Tana. The line proceeds through an area of scattered subsistence farming on the Lake Tana flood plains where teff, tomatoes, onions, rice (particularly in the Fogera woreda) and winter wheat are the predominant crops. From the woreda of Maksengit, the flood plains begin to give way to precipitous mountains where the terrain becomes extremely rugged and human habitation is restricted by steep valleys and rocky outcrops. The land gradually levels out in the vicinity of Gonder (Azezo) and population density increases. The landscape is once more scattered with Eucalytpus woodlots/plantations and subsistence farms. Homesteads are generally located on farmlands.

The towns of Azezo to Seraba mark the second section of the transmission line alignment. The line commences at an elevation of +2180 m, and begins a steep descent at the military settlement of Seraba. This section of the alignment is characterized by intensive land use characterized by crop production and livestock grazing, Eucalyptus plantations and scattered settlements. There are only occasional patches of highly degraded indigenous vegetation remaining in this section, reflecting high population density. The main environmental concerns in this part of the alignment include soil erosion and land degradation.

From Seraba to Ginti, the topography begins to descend into lowland savannah. The land cover is characterized by scattered and open woodland where the predominant land use is grazing, although crop cultivation is beginning to expand into the area.

The Ginti-Shehedi-Metema section of the alignment descends into lowland savannah. This section is flat, and covered with open to dense woodland where the predominant land-use is livestock grazing. Cultivation is also expanding rapidly through the resettlement of people from highly dense and degraded high land area of Amhara region, and through commercial investors who have begun

to produce sesame and cotton. Economically important trees such as *Boswellia papyferia* (the incense tree) and *Acacia senegal* (gum arabic) are common on this section of the alignment.

5.2.1 Water Resources

The Amhara Region has many river basins with small tributaries which form part of the Abay (Blue Nile), Tekeze and Awash River systems. Although the Region has abundant water resources, existing supplies of potable water and sanitation is poor. To date, some 87% of households do not have access to safe drinking water (Development Indicators of the Amhara Region, 2003/2004). Most rural people are forced to use unsafe drinking water obtained from ponds, rivers and unprotected wells. In the agricultural sector, there is an excessive dependence on rain and some 95.6% of local farmers remain dependent on rain-fed agriculture.

5.3 Administrative Framework

The Amhara Regional State is located in the northwest of Ethiopia. Route Option C is located in South and North Gonder (Azezo) Zones, which are situated on the western perimeter of the Region on the border with Sudan. South Gonder (Azezo) comprises five Woreda (Bahir Dar, Fogera, Lib Kemkem and Maksengit, while North Gonder (Azezo) Zone comprises four Woredas (Gonder (Azezo), Zuria, Dembia, Chilga and Metema).

5.4 Demographic Features

The total population of the Amhara Region was estimated at 18 million in 2004. This accounts for 25.5% of the population of Ethiopia, while the Region covers only 15.4% of the landmass of the country. The overwhelming majority of the population resides in rural areas (+89%) and is engaged in agriculture. Population distribution is uneven among zones and Woredas, however, and generally the highlands are more densely populated than the lowlands.

TABLE 2. POPULATION ESTIMATE BY TYPE OF RESIDENCE, AMHARA REGION

Residential Area	**Total Population**			**2005 Estimates**
	Male	Female	Total	
Rural	8,186,295	7,970,585	16,156,880	16,564,096
Urban	913,832	1,083,074	1,996,906	2,097,003
Total	**9,100,127**	**9,053,659**	**18,153,786**	**18,661,099**

Source: Population Team of BoFED, 2004

TABLE 3. POPULATION ESTIMATE AND DENSITY IN SOUTH AND NORTH GONDER (AZEZO), AMHARA REGION, 2004

Zone	Total Population	Area (km²)	Density (per km²)
North Gonder Zone	**2,949,217**	**48621.28**	**60**
South Gonder Zone	**1,196,133**	**14320.08**	**83**
Bahir Dar Special Zone	**182,562**	**1176.72***	**155**

Source: Annual Statistical Bulettin of ANRS BoFED, 2003 * Bahir Dar Woreda Planing and finance office.

The population growth rate of the Region is 2.9 % per annum with an average population density of 99.80 per km². In the Project affected area specifically, population density is 87.88 per km². (Population Department: Bureau of Planning and Economic Development, September, 2001). The average family size in the Project affected area is 5. The table below shows some of the demographic variables of the Project affected area.

TABLE 4. DEMOGRAPHIC CHARACTERISTICS OF THE PROJECT AREA

Woreda	Population			Family Size	Population Density (Per km²)
	Urban	Rural	Total		
Bahir Dar	182,562	---	182,562	5	155
Dera	18,380	237,973	256,353	5	162
Fogera	28,818	212,670	241,488	4.8	74
Lib Kemkem	25,487	92595	118,082	5	156
Maksengit	25,744	231,035	256,779	5	
Gonder Zuria	28,367	242,151	270,517	‘’	174
Dembia	31,915	274,756	306,671		211
Chilga	17,375	217,241	234,616	4.8	74
Metema	19,964	60,598	80,562	4	21

Source: Woreda Sector Offices, 2006

Around 88.84 % of the population in Amhara is under 15 years in age, and 5.23% are over 60 years. This indicates a high dependency burden. However, life expectancy rates have dropped to 43 years. Infant mortality rates are relatively high: 112/1000 live births. One out of every 10 babies dies before the age of one (Development Indicators of the Amhara Region, 2003/2004).

5.5 Livelihoods and Economic Practices

Agriculture is the dominant economic sector of the Amhara Region. It accounts for 63.1% of the regional GDP and 89% of the population derives its livelihood from agriculture and allied activities. It is the major source of food, raw materials for local industries, and export earnings.

Crop production and animal husbandry are the major agricultural activities undertaken in the region. Crops such as cereals, pulses, oil seeds, fibres, and roots crops are grown in different parts of the Region. Major crops include maize, sorghum, potato, bean, wheat, and barley in the highlands, and teff, cotton and sesame in the lowlands.

Small-scale subsistence cultivation is the dominant agricultural practice, and ancient methods of land preparation and harvesting continued to be applied. Absence of relevant agricultural technologies, combined with a low level of extension services, contribute toward low productivity and production levels. Fundamental needs such as food, fuels, building materials, fertilizers, raw materials (e.g. bamboos), and various types of grass for traditional crafts and occupations are all forms of the biomass, most of which are collected freely from the immediate environment.

Cattle, goats and equines are the most important sources of traction power, meat, milk, skin and hides. Given the limited availability of communal grazing lands in the Region, however, there is a severe shortage of animal feed. This has become a contributing factor for low productivity and production levels in the livestock sector.

The major economic activity for urban residents is trading. Although there is some similarity in economic activity between the Woredas, there are also differences resulting from the extreme ecological variations in the area. The proximity of many of the towns to Sudan means that trading opportunities between the two countries may be exploited. The Metema-Gallabat border serves as the main passage for the importation of fuel from the Sudan and for the exportation of cash crops (e.g. cotton, sesame and gum Arabic) to Sudan from the Amhara Region.

TABLE 5. MAJOR CROPS, THEIR PRODUCTION RATES AND CURRENT PRICES

Type of crop grown	Production in Quintals/hectares	Current cost in USD/q
Teff	5	32
Maize	20	13.8
Sorghum	15	9.3
Cotton	10	34.8
Sesame	4	63.5

Source: Metema Woreda Information office (2003)

TABLE 6. ARABLE LAND IN PROJECT AFFECTED AREA BY TYPE AND WOREDA

Type	Bahir Dar		Libo Kemkem		Dera		Fogera		Maksengit	
	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
Arable and Farm Land	38374	21	55119	51	73,559	46	51,896	44.2	51,466	47.5
Pasture Land	16640	9	8686	8.3	10152	6	26,888	22.9	29,276	27.02
Forest and Bush Land	13,504	8	6484	5.9	1,715	1	2113	1.8	4887	4.51
Occupied by Human Settlement	15,631	9	11889	10.9	9,113	6	7045	6	8451	7.8
Irrigation		0				0	23482	20		
Covered with Water, rivers and Valleys	64,777	36	19453	17.98	40,383	25	4344	3.7	2004	1.85
Waste land	29,611	17	6526	6.13	18,281	11	1643	1.4	12,265	11.32
Other (swampy, rural, markets etc)	0	0			5,875	4				
Total	**178,539**	**100**	**108,157**	**100**	**159,078**	**100**	**117,414**	**100**	**108,351**	**100**

Source: Woreda Agricultural Development and Information Bureau 2006.

TABLE 7. ARABLE LAND IN PROJECT AFFECTED AREA BY TYPE AND WOREDA

Type	Gonder Zuria		Dembia		Chilga		Metema	
	Ha	%	Ha	%	Ha	%	Ha	%
Arable Land (Cultivable)	6000		78,909	52	**	--	32,652	7.4
Farm Land	49,978		17,866	12	85,535	21.7	71,288	16.2
Pasture Land	29,276		8931	6	7,546	1.9	18,200	4.13
Forest and Bush Land	4886		5955	4	88,005	22.3	312,300	71
Occupied by Human Settlement	8462				2838	0.72	3875	0.88
Irrigation	--		37,221	25	120	0.03	--	0
Other	17,805		--	--	210,437	53.3	1800	0.42
Total	**116,407**	**100**	**148,882**	**100**	**394,500**	**100**	**440,115**	**100**

Source: Woreda Agricultural Development and Information Bureau 2003, 2005.
** In Chilga the arable land is included in "Others"

According to the Metema Woreda Information Bureau, the average income obtained from the sale of livestock and its products by household is estimated to be Birr 1,140 annually (USD133), (See Table below).

TABLE 8. ANNUAL HOUSEHOLD INCOME AND EXPENDITURE

Average Land Holding 4 Hectares			
Cultivable land 3.7 Hectares			
Income Sources	*Value*	*Expenditure*	*Value*
Crop production (Kg)	2.7	Food	2669 (45%)
Crop Value in Birr	4725 (80%)	Social affairs	1200 (20%)
Income from livestock (Birr)	1140 (19%)	Health	247 (4%)
Other agricultural and non-agricultural activities	40 (1%)	Education	10 (0.2 %)
		Households utensils	42 (0.7%)
		Seeds and farm inputs	906 (15%)
		Others	494 (9%)
		Saving	337 (6%)
Total	**5905**		**5905**

Source: Amhara Region, Woreda Information Bureau (2003)

The relative importance of different sources of income is shown in Table 8. The importance of crop farming is clear: it represents the most important income source in the great majority of villages. Sesame and gum arabic are also of vital importance to the economy in the lowland areas. Non-agricultural income sources (e.g. daily employment on commercial farms) do also exist, but are limited.

5.6 Social Services

5.6.1 Education

The Amhara Region has one of the lowest school participation rates in the country. According to the 1994 census, only 23.4% of the male and 12.0% of the female population were found to be literate. Literacy levels amongst rural dwellers are far lower than amongst urban residents.

The Region is characterised by it high population growth rate with an increasing school age population. According to the projected population size made by the Population Department of BoFED, the number of primary school age children in 1999 was 3.2 million (BoFED 1998/99). As of the academic years 1998/99, about 2716 primary schools were providing basic education in the Region, and the gross enrolment ratio was 39.6%. During the 1998/99 academic year, there were 81 secondary schools and some 2286 teachers in the Region. The teacher-pupil ratio was measured at 1:43.

Some of the problems observed in the education sector in the Region are:

- Late entry to schools (prevalent in rural areas)
- Low efficiency and quality of teaching
- High drop-out and repetition rates at first and second cycle
- Low enrolment of females
- Student congestion at urban primary schools and all secondary schools
- Text book distribution is unevenly managed with a low ratio of text book to student
- Scarcity of teachers
- Lack of financial and physical resources
- Lack of direction and measures with respect to educational sector financing (Demographic and Socio-Economic Profile: Amhara Region, 2001)

TABLE 9. LITERACY RATE BY SEX, PLACE OF RESIDENCE, AMHARA REGION 2000

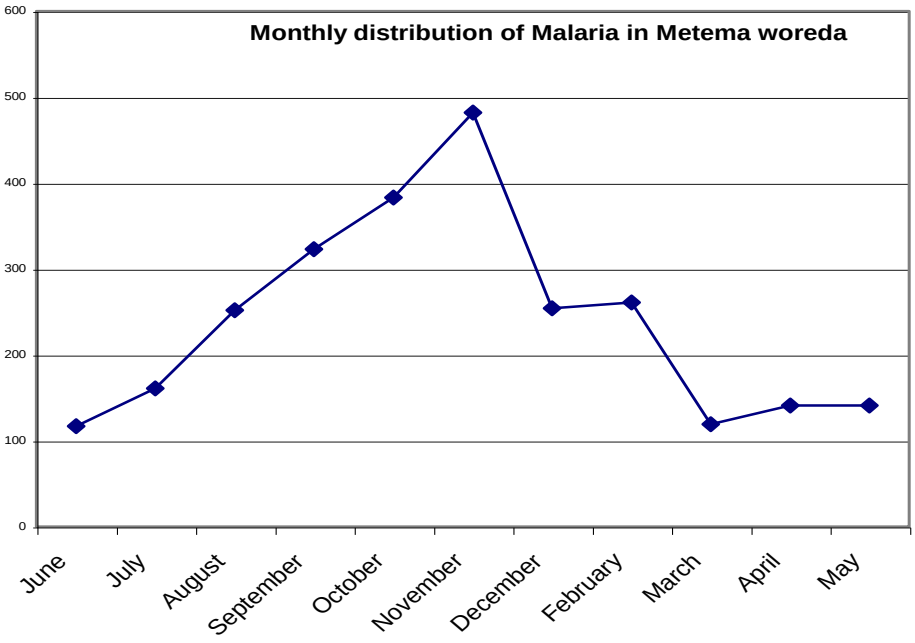
Region	Literacy Level in Percentage (%)		
	Rural	Urban	Total
Amhara			
• Male	26	80.7	30.9
• Female	9.7	57.2	15.6
• Both	17.9	66.9	23.1
National			
• Male	-	-	39.7
• Female	-	-	10.1
• Both	-	-	29.2

Source: CSA, Reports on the Year 2000 Welfare monitoring, 2000

5.6.2 Health

Health is an important social indicator that has enormous human development implications. The Amhara Region is attempting to develop primary healthcare services, paying particular attention to the prevention of communicable diseases such as malaria and other vector borne diseases. However, many people remain underserved by existing health institutions, and there is a lack of trained healthcare personnel. To date, there are 15 hospitals, 78 health centres and 517 clinics in the region. Primary healthcare coverage is 47%.

The ten most prevalent diseases in North Gonder (Azezo) area are malaria, acute respiratory infections, skin infections, intestinal parasites, rheumatism, sexually transmitted diseases (HIV/AIDs), eye disorders, diarrhoea, gastritis and anaemia.



Source: Azezo-Metema Road ESIA Final Report (September 2004)

Malaria is one of the major health problems in the project area. According to information obtained from various health services within the Project affected area, *plasmodium vivax* and *P.falciparium* are the commonly occurring malarial parasites in the project area. Data from the Metema health centre revealed that malaria cases are common throughout the year (see table above) although it tends to peak during the months of October and November.

6 Socio-Economic Profile of Option B1 and Option B2

This Section outlines socio-economic information of Option B1: Debre Markos-Injibara-Guba, and Option B2: Bahir Dar-Injibara-Guba (See Appendix 1, Figure 4).

In Ethiopia, the Project area is located in westen Ethiopia, and traverses through the West and East Gojam, and Awi zones of Amhara Regional State, and the Metekel zone of Benishangul-Gumuz Regional State. The Regions vary considerably in their physical, social and economic characteristics as well as in the availability of social and economic services and their development level and resource potential. According the design survey conducted by EEPCo of Option B1 in 2002, the distance from the substation in Debre Markos to the Sudanese border is some 259.5 km.

This section focuses specifically on the circumstances of PAPs on Option B1, where household inventories were carried out in September 2005. As Option B2 has not been surveyed, a comprehensive household inventory was not able to be conducted.

6.1 Project Area

The project area commences in the west of Ethiopia. The tranmission line route passes through the West and East Gojam zones in the Amhara Regional State, and the Metekel zone of Benishangul-Gumuz Regional State.

TABLE 10. LIST OF ADMINISTRATIVE ZONES AND TOWNS ALONG THE ROUTE OPTION B1 ALIGNMENT

Region/State	Zone/Locality	Woreda/ Administrative Area	Town
Amhara Region, Ethiopia	East Gojam	Debre Markos	Debre Markos
		Gozamin	Chemoga
	West Gojam	Machakil	Amanuel
		Dembecha	Yechereka
			Dembecha
			Addis Alem
		Jabi Tinan	Finote Selam
			Jiga
			Mankussa
		Bure Wemberima	Bure
			Shendi
	Awi	Banja Shikudad	Enjibara
			Kosso Ber
			Kessa
			Tilili
		Guangua	Chagni
Benishangul-Gumuz Region, Ethiopia	Metekel	Mandura	Genete Mariam
		Gilgel Beles	Gilgel Beles
		Guba	Mankush
		Pawe (sp. Woreda)	Pawe

Source: CSA Statistical Abstract, July 2004

6.2 Environmental Background

The Amhara and Benishangul-Gumuz Regions vary in their physical, social and economic characteristics as well as in the availability of social and economic services (both in size and quality) and their resource potential.

The Amhara Region comprises some 15% of the total area of the country and is home to about 26% of the country's population. It is located in the north and northwest of the country and is bordered

by Benishangul-Gumuz and Sudan in the west, Tigray in the north, Afar in the east and Oromiya Region in the south.

Benishangul-Gumuz is one of the smallest Regional States, accounting for 4.6% of the total area of the country and about 1% of the country's population. It is situated in western Ethiopia and is bordered by the Amhara Region in the north and north east, the Oromiya Region in the south and southeast, Sudan in the west and Amhara region in the east.

The first section of the Project area is located in densely populated area of Amhara Region, where different types of annual crops (mainly cereals) and prennial crops are grown. The second section of the project area is located in the less populated and predominantly forested areas of Benishangul-Gumuz Region.

The Amhara and the Agew are sedentary farmers who have a centuries-old ox-plough tradition. They live in clusters close to their farmlands and along the main roads. More than 90% of the population are subistence farmers. Due to population density, the landholding size in the Amhara Region is very small. The average landholding size in the region is about 1.4 hectare per household, and the average regional per capita landholding is 0.31 hectare. About 30% of the land in the region is used for cultivation.

The Gumuz population in the Metekel zone of Benishangul-Gumuz Region are located across a widely spread area, and survive from shifting cultivation and as hunter-gatherers. In some cases, they are entirely dependent on forest resources for subsistence.

The Project area is predominantly rural with a small urban population. The major urban centers are Debre Markos, Bahir Dar, Finote Selam, Bure, Dangilla and Chagni. These towns have a population of between 20,000 - 150,000 people.

The town of Bahir Dar is the capital of the Amhara Region, and exercises major socio-economic and political influence. It is the foremost commercial, political, administrative, historical and cultural centre of the region.

Assosa, the capital for Benishangul-Gumuz Region, is located west of the Project area and is disconnected from it by the Abay River.

6.3 Demographic Features

Amhara and Benishangul-Gumuz Regions have a population of 18,626,000 and 610,000 respectively (25% and 1% of the country's population). In both regions, the rural population predominates. Rural dwellers in Amhara constitute some 88.8% of the Regional population, and 90.3% in Benishangul-Gumuz.

The following table indicates rural and urban populations by sex for the country, and for Amhara and Benishangul-Gumuz Regions.

TABLE 11. POPULATION BY SEX FOR AMHARA AND BENISHANGUL-GUMUZ REGIONS, URBAN AND RURAL, 2005

Region	Urban			Rural		
	Male	Female	Total	Male	Female	Total
Amhara	1,048,00	1,049,000	2,097,000	8,261,000	8,268,000	16,529,000
Benishangul-Gumuz	30,000	29,000	59,000	277,000	274,000	551,000
Total	1,078,000	1,078,000	2,156,000	8,538,000	8,542,000	17,080,000
Ethiopia	5,803,000	5,872,000	11,675,000	30,802,000	30,567,000	61,369,000

Source: CSA Statistical Abstract, July 2004

6.3.1 Population by Administrative Zone

There are 12 Woreda in the Project affected area in the Ethiopia portion of Option B1, of which 8 are located in the Amhara Region and 4 in the Benishangul-Gumuz Region.

The Woredas in Amhara Region are characterized by a high population density, varying from 123 persons per km^2 in Machakil Woreda to 3,798 persons per km^2 in the town of Debre Markos. By contrast, the Woredas in Benishangul-Gumuz Region have very low population density, ranging from 2.7 persons per km^2 in Guba Woreda to 85.3 persons per km^2 in Pawe (special Woreda). The following table depicts the total population of Woredas affected by the transmission line in Option B1.The total population is estimated to be 1,795,566 persons, of which 894,248 are men and 901,318 are women.

TABLE 12. POPULATION SIZE OF WOREDAS LOCATED IN OPTION B1 BY SEX, AREA AND DENSITY

Region	Zone	Woreda	Population by Sex			Area (km^2)	Density (Persons/ km^2)
			Males	Females	Total		
Amhara	East Gojam	Debre Markos	41,298	40,477	81,775	21.53	3,798.2
		Gozamin	124,835	127,034	251,869	1,704.73	147.7
	West Gojam	Machakil	124,488	126,628	251,116	2,035.63	123.4
		Jabi Tinan	132,363	132,392	264,755	1,230.94	215.1
		Dembecha	60,784	60,751	121,535	847.18	143.5
		Bure Wemberima	143,288	145,483	288,771	2,207.20	130.8
	Awi	Banja Shikudad	100,361	102,827	203,188	832.51	244.1
		Guangua	101,391	101,333	202,724	2,161.63	212.3
Benishangul Gumuz	Metekel	Dangur	20,247	20,757	41,004	8,387.19	4.9
		Guba	5,169	5,419	10,588	3,896.10	2.7
		Mandura	15,364	14,447	29,811	1,003.76	29.7
		Pawe (Special Woreda)	24,660	23,770	48,430	567.51	85.3
Total			**894,248**	**901,318**	**1,795,566**		

Source: CSA Statistical Abstract, July 2004

Like that of B1, the Woredas that are located within the Option B2 alignment in the Amhara Region are characterized by high population density. The following table depicts the total population of Woredas affected by the proposed transmission line in Option B2. The estimated population of the Woredas is about 1,269, 673, of which 641,702 are men and 627,971 are women.

TABLE 13. POPULATION SIZE OF WOREDAS LOCATED ALONG OPTION B2 BY SEX, AREA AND DENSITY

Region	Zone	Woreda	Population by Sex			Area in km^2	Density
			Male	Female	Total		
Amhara	Bahir Dar	Bahir Dar	82,498	77,295	159,793	28.0	5,706.9
	West Gojam	Bahir Dar Zuria	134,036	129,365	263,401	2,062.62	127.7
		Achefer	161,325	156,717	318,042	2,515.64	126.4
		Merawi	163,072	163,129	326,201	1,602.81	203.5
	Agew Awi	Dangila	100,771	101,465	202,236	1,504.63	131.3
Total			**641,702**	**627,971**	**1,269,673**		

Source: CSA Statistical Abstract, July 2004

6.3.2 Urban Population

A number of urban and administrative centers in Ethiopia will be crossed by the transmission line. The major urban centers affected in Option B1 include Debre Markos, Finote Selam, Bure, Dembecha and Chagni. In addition to the major towns listed in the table below, there are a number

of small towns that will be affected by the transmission line. The urban population in the Project affected area is estimated to be about 223,393.

TABLE 14. POPULATION OF PROJECT AFFECTED TOWNS ALONG OPTION B1 ROUTE

Region	Woreda	Town	Male	Female	Total
Amhara	Debre Markos	Debre Markos	39,525	38,663	78,188
	Gozamin	Chemoga	421	524	945
	Machakil	Amanuel	4,678	4,597	9,275
	Dembecha	Yechereka	935	986	1,921
		Dembecha	6751	6957	13,708
		Addis Alem	1227	1324	2,551
	Jabi Tinan	Finote Selam	11,035	10,898	21,933
		Jiga	5788	6072	11,860
		Mankussa	2304	2229	4,533
	Bure Wemberima	Bure	10,546	10,729	21,275
		Shendi	4,063	4,425	8,488
	Banja Shekudad	Enjibara	566	623	1,189
		Kosso Ber	2,023	2,206	4,229
		Kessa	1058	1046	2,104
		Tilili	3,941	4,133	8,074
	Guangua	Chagni	15,319	14,238	29,557
Benishangul-Gumuz	Guba	Mankush	642	553	1,195
	Mandura	Genete Mariam	1,134	1,234	2,368
Total			**111,956**	**111,437**	**223,393**

Source: CSA Statistical Abstract, July 2004

In Option B2, the Project affected towns include Bahir Dar, Dangilla, Merawi and Dure Bete. The substation for this route is located in Bahir Dar.

The table below depicts the major urban centers within the B2 alignment by zone, Woreda and sex.

TABLE 15. POPULATION OF PROJECT AFFECTED TOWNS ON OPTION B2

Region	Zone	Woreda	Town	Male	Female	Total
Amhara	West Gojam	Achefer	Dur Bete	6,009	6285	12,294
		Bahir Dar Zuria	Meshenti	1,639	1,774	3,413
			Bahir Dar	82,498	77,295	159,793
		Merawi	Wetet Abay	2,219	2,503	47,22
			Merawi	6,920	7,718	14,638
	Awi	Dangilla	Dangilla	11,810	12,582	24,392
		Fagita Lekoma	Addis Kidame	2,834	3,328	6,162
	Total			**113,929**	**111,485**	**225,414**

Source: CSA Statistical Abstract, July 2004

6.3.3 Ethnicity and Religious Affiliation

Benishangul-Gumuz Regional State is home to five ethnic groups; namely Amhara, Oromo, Gumuz, Berta, Shinasha, Mao and Komo. The Berta is the major ethnic group (26.7%), followed by Gumuz and Amhara (23.4% and 22.2% respectively). The size of other ethnic groups, such as the Oromo, Shinasha, Mao, Komo and others ranges from 0.2 % to 12.8%.

Islam and Orothodox or Evangelical Christianity are the two major religions in the Benishangul-Gumuz Region. Muslims account for 44.1%, Christians of various groups 41.1%, Animists (traditional religions) 13.1% and others 1.5%. In the Amhara Region, the majority of the population is Orthodox Christians, followed by Muslims.

6.4 Livelihoods and Economic Practices

In Amhara and Benishangul-Gumuz regions agriculture and in particular crop farming is the major source of income and livelihood activity for over 90% of the population.

Agriculture, and crop farming in particular, is characterized by small-scale household farming, and it is practiced with traditional methods of cultivation and subsistence farming. Agriculture is mainly rain-fed and thus dependent on the vagaries of nature. The irrigation potential is high in both Amahra and Benishangul-Gumuz, but water has not yet been harnessed. Consequently, crop yield rates are low.

In Amhara, agriculture contributes over 60% to the regional GDP. Approximately one-fifth of the total land area in the region is used for agriculture. The cultivated landholding size is less than one hectare per household. Productivity is low at about 10 quintals per hectare.

The region produced mainly cereal, pulse, and oil crops. The following table indicates the three Project affected zones in Amhara, and the respective crop yields.

TABLE 16. CULTIVATED AREA AND PRODUCTION IN THREE ZONES OF AMHARA REGION

Crop type	West Gojam		East Gojam		Awi	
	Area in ha	Production	Area (ha)	Production	Area (ha)	Production
Cereal	113,791	2,914,374	66,654	1,190,472	8,875	57,650
Pulse	46,654	485,898	70,327	738,756	41,260	1,058,296
Oil crop	42,896	214,292	20,450	97,847	24,182	78,076

Source: Amhara Region Socio Economic Information, 2002

In Benishangul-Gumuz less than 3% of the total area is under cultivation (Regional Government of Oromiya (2004) Statistical Abstract, 4th Edition.) Farming practices and techniques continue to be based on hoe cultivation rather than ox ploughing. The majority of the indigenous population – namely the Berta and Gumuz – remain shifting cultivators.

About 59% of the region is covered by forests, a particularly important and economically valuable species being lowland bamboo forest.

Sorghum, millet and maize are the major crops of Benishangul-Gumuz Region. Crop production and productivity is limited due to the use of rudimentary labour-intensive farm tools, the prevalence of crop diseases, pests and weeds, and human diseases such as malaria. Poor rural infrastructure facilities such as markets and roads, and limited availability of small-scale credit facilities have also contributed to low agricultural production in the region.

In Benishangul, livestock keeping is constrained mainly by the prevalence of cattle diseases such as *Trypanosomiasis*. However, the Benishangul-Gumuz Region has forest potential such as bamboo, incense and other indigenous trees. The mining potential includes marble and traditional gold mining.

6.5 Social Services

6.5.1 Education

The educational level in both Project affected Regions is extremely low. In Amhara, the primary school enrolment is 64.4% and the secondary level is at 19.3%. On the other hand, primary school enrolment in Benishangul-Gumuz is the highest in the country, and runs at about 98.4%. Despite high levels of enrolment, however, there is a high drop-out rate, which accounts for an 89% illiteracy rate amongst women above 10 years, and 79% amongst men of the same age (Regional Profile, Benishangul-Gumuz Regional State, 2004).

The following table depicts primary and secondary school enrolment for both Regional States and the country, and according to sex.

TABLE 17. SCHOOL ENROLMENT IN AMHARA AND BENISHANGUL-GUMUZ AND ETHIOPIA

Regions	Primary Grade 1-8			Secondary Grade 9-10		
	Both sexes	Boys	Girls	Both Sexes	Boys	Girls
Amhara	58.5	62.9	53.9	12.6	15.3	9.9
Benishangul-Gumuz	98.4	121.2	74.5	19.5	26.8	12.0
Ethiopia	64.4	74.6	53.8	19.3	24.0	14.3

Source: Ministry of Education (Education Statistics Annual Abstract) 2002/03.

6.5.2 Health Services

Health delivery services for both Regions are very low. Infant mortality for the country is 97 per 1000 children and the under five-mortality rate is 166 per 1000 children. The average life expectancy is 53.4 for males and 55.4 for females, which is among the lowest in Sub-Sahara Africa.

The following table shows infant mortality rates and life expectancy for the affected regions and the country:

TABLE 18. INFANT MORTALITY RATE AND LIFE EXPECTANCY AT BIRTH IN AMHARA AND BENISHANGUL-GUMUZ REGIONS

Regions	Infant Mortality Rate (IMR) in 2000	Under 5 Mortality in 2000	Life Expectancy at Birth (years)	
			Male in (2000-2005)	Female in (2000-2005)
Amhara	112	183	53.4	56.0
Benishangul-Gumuz	98	198	50.1	51.1
Ethiopia	97	166	53.4	55.4

Source: The National Office of Population, 2003

TABLE 19. HEALTH INSTITUTIONS IN THE AMHARA AND BENISHANGUL-GUMUZ REGIONS

Region	Hospital	Health Centre	Clinic	Health Post
Amhara	30	78	516	384
Benishangul-Gumuz	2	7	66	44

Source: The National Office of Population, 2003

7 Socio-Economic Profile of Option A

7.1 Project Area

This proposed transmission route spans two Regions in western Ethiopia – namely Oromiya and Benishangul-Gumuz. The route commences at the substation in Gedo and connects the towns of Nekemte, Ghimbi, Assosa and Kurmuk on the Ethiopia/Sudan border. It is the longest route Option, with the total tie-line for Ethiopia and Sudan totalling some 614 kilometres of which 474 km lies within Ethiopia (See Appendix 1, Figure 5).

TABLE 20. LIST OF ADMINISTRATIVE ZONES ALONG ROUTE OPTION A ALIGNMENT

Region/State	Zone/Locality	Woreda/Administrative Area	Towns
Oromiya Region, Ethiopia	Mirab (West) Wellega Zone	Mana Sibu	Mendi Kiltu Kara
		Nejo	Nejo Gori Wara Jiru
		Ghimbi	Ghimbi Homa
	Misrak (East) Wellega Zone	Lalo Asabi	Inango Dongoro
		Sibu Sire	Sire
		Guto Wayu	Nekemte Gute
		Sasiga	Galo Arb Gebeye Ehud Gebeye Tsige
		Diga Leka	Gatama Arjo Gudetu Diga
Benishangul-Gumuz Region, Ethiopia	Assosa	Menge	Menge
		Kurmuk	Kurmuk
		Assosa	Assosa
		Komesha	Komesha
		Sherkole	Holma
		Bambesi	Bambesi
		Oda Godere	Oda Buldigilu

7.2 Environmental Background

Oromiya Region

The Regional State of Oromiya lies in the central part of the Federal Democratic Republic of Ethiopia. With an area of 353,690 km² (about 32% of the total area of the country) it is the largest of the nine Regional States. The Oromiya Region has both international and regional borderlines. It embraces 12 administrative zones, 180 districts and 375 urban centres. Addis Ababa (Finfinne) is its administrative centre.

Topographically, the Oromiya Region is characterized by diversified landforms: extensive mountain ranges, dissected plateaus, hills, undulating and rolling plains, deep gorges and valleys. It has five major drainage basins, viz. Abay, Genale, Inland, Gojeb and Wabi Shebele within which are located several rivers, streams, springs and lakes. The Region has high forest, woodland, riverine, shrub and bush, juniperus, acacias and man-made forests. Due to population growth and hasty resettlement programmes in the 1980s, however, indigenous forests have progressively deteriorated in size. As a result, the Region has become vulnerable to soil erosion and land degradation. Shifting cultivation, fallowing, crop rotation, manuring and chemical fertilizers are

some practices utilized to maintain soil fertility (Council of the Regional State of Oromiya, Physical and Socio-Economic Profiles, 2000).

Two zones in Oromiya fall within the Project affected area, namely East and West Wellega. East Wellega spans a total area of 25,234.4 km² of which 45.5% accounts for arable land, 15.7% for pastureland; forest and bush covers 11.7%, while degraded and 'other' share some 27.1% of the zonal area. The zone has 17 districts and Nekemte is its administrative capital. West Wellega spans an area of 23,980 km², of which 31% is under cultivation, 5.4% under pasture, and 6.1% under forest lands. The remaining land is degraded or urbanized. The zone has 17 districts and 44 urban centres, and Ghimbi is the administrative capital.

In both zones, teff, wheat, barley, maize, sorghum, millet, horse beans, peas, haricot beans, sesame, lentils, and root crops are important crops. Coffee is of particular importance to this Region, where it is believed to have originated (*Coffee Arabica*). In addition to agricultural production, livelihoods are sustained through the production of cattle, goats, sheep, poultry and traditional bee-keeping.

Benishangul-Gumuz Region

Benishangul-Gumuz Region was formally established in 1994 by the new constitution of Ethiopia through the creation of a federal system of governance. The State has an estimated area size of 51,000 km. It stretches along the Sudanese border on its western perimeter, and the Amhara, Oromiya and Gambella National Regional States in Ethiopia in the north, east and south respectively. The region is administratively divided into 3 zones, 18 Woredas and 2 special Woredas (Pawe and Mao-Komo). Its administrative centre is Assosa.

Benishangul-Gumuz Region is divided into two sections, separated by the Blue Nile into north and south. In addition, it has two river basins, Abay and Baro Akobo, both of which are main tributaries of the Blue Nile. Both have the potential for irrigation, water supply, and mini-hydro electric power generation.

Benishangul-Gumuz Region is one of the least developed Regional states in Ethiopia. Approximately 59% of the Region is still covered with indigenous forests, woodland and bamboo thickets and it enjoys an annual rainfall of 500-1800 mm (May-October). Like Oromiya, it is a topographically varied, 75% of which is lowland, 24% midland and 1% highland. The Region is known for its endemic lowland bamboo forests (*Oxytenantra abyssinica)*, incense trees (*Boswellia papyrifera*) and caster oil (locally referred to as *noug*), all of which have important investment potential. Major crops produced are millet, sorghum, sesame, cotton, soya beans, coffee and mangos. Traditional gold mining and non-sustainable forest dependent activities such as charcoal and firewood production provide other means of livelihood.

7.3 Demographic Features

Oromiya is the most populous Regional state in the country. Based on the 1994 Population and Housing Census, the projected population of the region was estimated at 23,704,000 at the end of 2002, accounting for over 35% of the population of the country. Out of the population of the region about 12.3 percent is estimated to dwell in urban areas, and the remaining 87.7% are rural.

The population of the region is characterized by high population growth, increasing at a rate of 2.9% annually. The age structure of the region shows that over 45% of the population is less than 15 years of age, while the economically active age group is about 50%. The dependency ratio of the region is about 100, implying that for every 100 persons in the productive age group, there are 100 dependants (both young and old ages) to be supported.

The majority of the people in this Region belong to the Oromo ethnic group, followed by the Amhara. The dominant language spoken is Oromiffa, although Amharigna is widely spoken, irrespective of ethnicity.

A large portion of the Region is drought prone which has caused periodic population dispersal. As the two zones within the Project affected area benefits from a reasonably reliable rainfall, it has been destined for the resettlement of large numbers of drought-stricken people from the east and northern parts of the Region.

Most of the towns in Oromiya Region, and West Oromiya in particular, have their origins with the expansion of Minilik and the Italian occupation, during which the major consideration for the selection of these sites was their military strategic importance (Physical and Socio-Economic Profiles of 180 Districts of Oromiya Region 2000). Subsequently, urban centres have been variously developed as administrative, commercial, cultural and transport centres.

TABLE 21. WESTERN OROMIYA: POPULATION SIZE BY SEX, AREA AND DENSITY BY REGION, ZONE, WOREDA AND TOWNS

Zone	Woreda	Towns	Male	Female	Total	Area (Km²)	Density
MIRAB (WEST) WELLEGA ZONE	Mana Sibu	Mendi Kiltu Kara	90,120	87,191	177,311	2,487.51	71.3
	Nejo	Nejo Gori Wara Jiru	71,016	73,619	144,635	984.07	147.0
	Ghimbi	Ghimbi Homa	70,383	72,791	143,174	1,183.44	121.0
MISRAK (EAST) WELLEGA ZONE	Lalo Asabi	Inango Dongoro	39,040	41,666	80,706	376.57	214.3
	Sibu Sire	Sire	46,241	48,897	95,138	1,132.51	84.0
	Guto Wayu	Nekemte Gute	114,463	116,244	230,707	1,324.22	174.2
	Sasiga	Galo Arb Gebeye Ehud Gebeye Tsige	30,099	30,928	61,027	938.13	65.1
	Diga Leka	Gatama Arjo Gudetu Diga	66,088	70,473	136,561	1,263.28	108.1

Source: FDRE Central Statistical Abstract (December 2004)

The total population of Benishangul-Gumuz in July 2004 was measured at 593, 999 (FDRE Statistical Abstract 2004). Accordingly, some 92.2% of the population lives in rural areas and only 9.3% are urbanized. Most of the Region's inhabitants are sedentary cultivators who derive their livelihood from the production of cereals, root crops and cattle. Most inhabitants in the Assosa zone – the Project affected area - are hunter cultivators who derive their livelihood from a combination of small scale shifting agriculture, hunting wild animals and gathering wild fruit and tubers. Due to the shortage of surface water in this region, however, most of the settlements are located near to permanent rivers. Animal herding, especially of cattle, is severely limited by the prevalence of the fly-borne disease *Trypanosamiasis.*

The indigenous people of Benishangul-Gumuz are the Oromiya, Gumuz, Berta, Shinasha, Mao and Komo. Due to the great famines of 1973/74 and 1983/84 in the northern and central parts of Ethiopia, a large number of Amharic people from Welo were settled in the Region. Settlement patterns are thus determined by ethnic group and by culturally-prescribed livelihood practices. Most settlements are scattered, and many people live in remote and inaccessible areas. In some areas (e.g. Sherkole Woreda) people have begun to settle closer to centres where they may benefit from educational and health services. More recently, the Bureau of Agricultural Affairs (through the Office of Food Security and Resettlement) has embarked on a 'villagization' programme which aims to accelerate the settlement of shifting cultivator or hunter-gatherer groups.

Although some towns have grown substantially in the past 10 years (e.g. Assosa), the rural-urban ratio has remained fairly consistent.

TABLE 22. BENISHANGUL-GUMUZ: POPULATION SIZE BY SEX, AREA AND DENSITY BY REGION, ZONE, WOREDA AND TOWN

Zone	Woreda	Towns	Male	Female	Total	Area (km²)	Density
Assosa	Menge	Menge	18,644	19,034	37,678	1,500.63	25.1
	Kurmuk	Kurmuk	6,976	6,913	13,889	1,434.07	9.7
	Assosa	Assosa	51,942	48,074	100,016	1,991.41	50.2
	Komesha	Komesha	6,450	6,222	12,672	645.78	19.6
	Sherkole	Holma	8,843	9,322	18,165	3,204.22	5.7
	Bambesi	Bambesi	23,248	22,926	46,174	2,210.16	20.9
	Oda Godere	Oda Buldigilu	14,905	14,065	28,970	1,387.19	20.9

Source: FDRE Central Statistical Abstract (December 2004)

Main religions in Benishangul-Gumuz are Islam, Orthodox Christian and Protestant (Seven Day Adventist, Pentecost, Lutheran, Baptist, Anglican, Presbyterian, Meserete Kirstos, Mulu Wengel, Kale Hiywot), Catholic, and Traditional religions. The largest following is Moslem (44.1%), followed by Orthodox Christian (34.8%), Protestant (5.8%) and traditional (13.1%), (Facts about Benishangul-Gumuz National Regional State, 2003).

7.4 Social Services

7.4.1 Health Services

Health as a social indicator has enormous human development importance. The ratios of both health professionals and health institutions to the population in Oromiya Region are far below those recommended by the World Health Organization (WHO). The coverage of health services is estimated at 52.2 percent and is extremely low even by the standards of Sub-Saharan Africa. The Oromiya region has 27 hospitals, 86 clinics and 972 health posts.

A large proportion of the population has neither access to safe water nor sanitation facilities, and as a result, is severely afflicted by water borne diseases. Water supply service coverage for the region is estimated at 34.2 percent. Infant mortality in the region is estimated to be 166.2 per thousand of live birth (OHAPCO Strategic Plan to Fight HIV/AIDS, 2002). The major causes of morbidity are malaria, respiratory infections, HIV/AIDS, skin infections diarrhea diseases and intestinal parasitic infections. The prevalence of such diseases is due mainly to poverty and economic deprivation.

The provision of primary health services in Benishangul-Gumuz is one of the main social development goals of the Region. In 1997, health service coverage was 41%; by 2003 it had risen to 54%. The Region now has 2 hospitals, 7 health centres, 66 government clinics, 44 health posts, 3 NGO clinics and 4 private clinics. The major diseases in the Region are malaria, water-born-, respiratory- and skin diseases, and malnutrition (Facts about Benishangul-Gumuz National Regional State, 2003).

TABLE 23. INFANT MORTALITY RATE AND LIFE EXPECTANCY AT BIRTH IN THE TWO PROJECT AFFECTED REGIONS

Regions	Infant Mortality Rate 2000	Under 5 Mortality Rate 2000	Life Expectancy at Birth (years)	
			Male (2000-2005)	Female (2000-2005)
Oromiya	116	194	53.0	55.5
Benishangul-Gumuz	98	198	50.1	51.1
Ethiopia	97	166	53.4	55.4

Source: The National Office of Population (2003)

7.4.2 Education

Education plays a crucial role in the process of social and economic transformation of any country. The panacea for attaining sustainable long-term development lies in making an effective use of its abundant human and material resources, through expanding education and skill trainings (See Section 18 of the Report: Recommendations).

In the last decade, encouraging strides have been made in the Oromiya Region to expand educational opportunities to hitherto unaddressed sections of the population. As a result, the gross enrolment ratio of the Region at primary level reached 61.8 percent in 2002, while at secondary level it was estimated to be 15.2 percent. Although, the extant achievement is remarkably high so far, a considerable number of children in the region nonetheless lack the opportunity to go to school. Generally, despite the concerted efforts that have been made in the region to expand education, the rate of literacy is still alarmingly low, standing at a mere 28%, lower than the national average of 35%. The literacy rate is found to be even lower among females (Regional Atlas of West Oromiya, 2004).

As the following table indicates, primary education is more accessible than secondary, and to date there are only 51 Secondary schools in West Oromiya. The table also indicates that the role of the private sector in education is indispensable.

TABLE 24. NUMBER OF PRIMARY AND SECONDARY SCHOOLS BY RURAL, URBAN AND BY TYPE OF OWNERSHIP 2002/2003

Number of Primary Schools by Rural, Urban and by Type Of Ownership, 2002/2003								
Zone	District	Urban	Rural	Total	%	Gvt	Non-Gvt	Public
West Wellega	20	57	430	487	30.0	470	11	6
East Wellega	21	45	312	357	22.0	354	3	0
Number of Secondary Schools by Rural, Urban and by Type Of Ownership, 2002/2003								
West Wellega	20	16	0	16		16	4	0
East Wellega	21	13	0	13		13	0	0

Source: Regional Atlas of West Oromiya (July 2004)

The educational status in the Benishangul-Gumuz Region is exceptionally low. Some of the conditions related to this problem are low quality education, high drop-out rates and uneven distribution of schools. In 2003 there were only 14 Secondary Schools in the Region providing secondary education to a mere 3.8% of the population (Facts about Benishangul-Gumuz National Regional State, 2003).

TABLE 25. SCHOOL ENROLMENT BY GENDER IN THE TWO PROJECT AFFECTED ETHIOPIAN REGIONS

Regions	**Primary Grade 1-8**			**Secondary Grade 9-10**		
	Both Sexes	Boys	Girls	Both Sexes	Boys	Girls
Oromiya	66.9	82.6	51.0	19.1	25.5	12.4
Benishangul-Gumuz	98.4	121.2	74.5	1.5	26.8	12.0
Ethiopian Average	64.4	74.6	53.8	19.3	24.0	14.3

Source: Ministry of Education (Education Statistics Annual Abstract 2002/03)

7.4.3 Water and Sanitation

West Oromiya is endowed with abundant water resources. Its major surface drainage systems include the Abay (Blue Nile), Ghibe and Baro catchments, with minor ones at the Fincha and Gilgele Ghibe catchments. Despite this, the number of people who have access to potable water is very low. In 1994, it was estimated that 77.8 of the population of the Sub-Region did not have access to potable water. The distribution of potable water varies in the different zones. A 2001/2002 survey estimated that 28% of people in East Wellega received potable water, of which 19.1 were rural and 90.1 were urban. In West Wellega, some 7.3% of the population received potable water, of which 44.2% were urban and 3.2 rural (Sub-Regional Atlas of West Oromiya 2004). The Benishangul-Gumuz Region has potentially rich surface and sub-surface water resources. However, little has been done to utilize these resources. In 1997, only 19% of the population had access to potable water, a statistic which was raised to 37.21% by 2003.

8 Legal Framework for Land Acquisition and Compensation

8.1 Federal Democratic Republic of Ethiopia

8.1.1 The Federal Constitution

The Constitution of the Federal Democratic Republic of Ethiopia, which entered into force as of August 21st 1995, forms the fundamental basis for enactment of specific legislative instruments governing environmental matters at National level. Articles 43, 44 and 92 of the Constitution specifically deal with the right to development, environmental rights and environmental objectives respectively.

In a section that deals with the right to development:

- Article 43 (1) gives broad right to the peoples of Ethiopia to improved living standards and to sustainable development;
- Article 43 (2) acknowledges the rights of the people to be consulted with respect to policies and projects affecting their community;
- Article 43 (3) requires all international agreements and relations by the State to protect and ensure Ethiopia's right to sustainable development.

In a section that deals with environmental rights, Article 44 guarantees the right to a clean and healthy environment.

In a section that deals with environmental objectives Article 92 sets out the Federal policy principles and significant environmental objectives. More specifically Article 92:

- affirms the commitment of the Government to endeavor to ensure that all Ethiopians live in a clean and healthy environment;
- warns that the design and implementation of development programs and projects do not damage or destroy the environment;
- guarantees the right of the people to full consultation and the expression of views in the planning and implementation of environmental policies on projects that affect them; and
- imposes the duty on Government and citizens to protect the environment.

In the context of land ownership and holding right:

- Article 40 (3) vests the right to ownership of rural and urban land, as well as of all natural resources, in the government and in the peoples of Ethiopia;
- recognizes land as a common property of the Nations, Nationalities of, and peoples of Ethiopia and prohibits sale or any other exchange of land;
- Article 40 (4) guarantees the right of farmers to obtain land without payment and the protection against eviction from their possession; and
- Article 40 (5) guarantees the right of pastoralists to free land for grazing and cultivation as well as the right not to be displaced from their own lands.

In recognition of the value of human input on land Article 40 (7) states that "Every Ethiopian shall have the full right to the immovable property he builds and to the permanent improvements he brings about on the land by his labour or capital. This right shall include the right to alienate, to bequeath, and, where the right to use expires, to remove his property, transfers his title, or claim compensation for it."

In recognition of the right to acquire property for the purpose of overriding national interest Article 40 (7) empowers the Government to expropriate private property for public purposes subject to payment in advance of compensation commensurate to the value of the property.

In a section that deals with economic, social and cultural rights, Article 41 (9) sets out the State responsibilities to protect and preserve historical and cultural legacies.

The Research and Conservation of Cultural Heritage Proclamation No. 209/2000 of Ethiopia defines cultural heritage broadly as "anything tangible or intangible which is the product of creativity and labour of man in the pre-history and history times, that describes and witnesses to the evolution of nature and which has a major value in its scientific, historical, cultural, artistic and handcraft content."

Prior approval of the Authority for Research and Conservation of Cultural Heritage is required to remove from its original site of an immovable cultural heritage (Art. 21/1). Whenever registered, movable cultural heritage is encountered during the execution of the project it is possible to remove such property by notifying the Authority in advance (Art. 21/2).

Any person who destroys or damages cultural heritage intentionally shall be punished with imprisonment not less than 10 years and not exceeding 20 years (Art. 45/2/).

8.1.2 Legislation on Expropriation of Land & Compensation

The Federal Legislation on Expropriation of Land for Public Purposes & Compensation (Proclamation. No. 455/2005) repealed the outdated provisions of the Ethiopian Civil Code of 1960 regulating land acquisition and compensation for the purpose of public projects. This new legislation established detailed procedures and setting time limits within which land could be acquired after request is received from the proponent, principles for assessment of compensation for properties on the land, and for displacement compensation. It also empowered the Woreda administration to establish valuation committees to value private properties. In the case of public-owned infrastructures to be removed from the right-of-way, the owners of the structures would assess the value of the properties to be removed. Additionally the legislation provided for appeals from valuation decisions but such action would not delay transfer of possession of land to the proponent or contractor appointed by the proponent (See Appendix 3, Proclamation no. 455/2005).

The Proclamation has removed the barriers for planned land acquisition, substantially raised the amount of compensation payable to expropriated owners of properties and displaced people. In addition to financial compensation in an amount sufficient to reinstate the displaced people to the economic position prior to displacement the Regional relevant administration is required to give another land to any person who lost his land in favor of public project. Assessment of compensation does not include the value of land itself, because land is a public property not subject to sale in Ethiopia.

To the extent that the infrastructure to be constructed for power interconnection project are only substations, access routes and conventional lattice self-supported steel towers, land acquisition is unlikely to pose substantial problem to the proposed Project.

The nature of the Project is such that allows for the continuation of cultivation of farmland and grazing in the right-of-way. The only exception will be plantations (esp. Eucalyptus) which will disturb transmission lines, and maintaining houses for residential and other social services, as theses are vulnerable to possible electro-magnetic radiation from high voltage transmission lines. Replacement houses may be relocated in the same plot of land or in a distance very close to those demolished without causing separation from social ties within the established communities.

The responsibility of a proponent of a proposed project under Ethiopian law does not extend beyond the payment of compensation for properties and displacement. In other words the displaced people need to seek resettlement options that are stipulated with the framework of the land administration systems of the relevant rural or urban land administration.

8.1.3 Involuntary Resettlement

The Constitution of the Federal Democratic Republic of Ethiopia (FDRE) states that the right to ownership of rural and urban land, as well as all natural resources, is exclusively vested in the state and in the people of Ethiopia. Article 40 of the Constitution indicates that land is a common property of the nations, nationalities and the people of Ethiopia, and shall not be subjected to sale or to other means of transfer.

Resettlement and rehabilitation are recognized civic rights in the Ethiopian legislation. Article 44 of the revised Constitution of 1995 states that all persons who have been displaced or whose livelihoods have been adversely affected by a State Program, have the right to commensurate monetary or alternative means of compensation including relocation with adequate state assistance. This compulsory legal principle is also stated in the Constitution of the FDRE. The government shall pay fair compensation for property found on the land but the amount of compensation shall not take into account the value of the land.

Hence project plans must include an 'attractive' and sustainable resettlement strategy, offering adequate compensation and incentives to the affected population. The main emphasis should be on maintaining an open dialogue with the people, building a trustworthy relationship between the Government agencies and the population and enhancing community participation in any project from the onset of the study up to its implementation. In this respect, Article 43 (2) of the Constitution defines the rights of all Ethiopians to participate in national development and, in particular, to be consulted with respect to policies and projects affecting their community.

8.2 Policies of the World Bank

The Feasibility Study Update Report for Ethiopia-Sudan Power Systems Interconnection Project dated May 2005 contemplates financing of the project by the World Bank. This explains that compliance with the relevant World Bank's Safeguard Policies is a condition to financing of the project.

The Feasibility Study Update Report refers to the World Bank's Safeguard Policies OP 4.01 and OP 17.50 as the necessary instruments applicable to the project. In a section on Policy, Legal and Administrative Framework WB Operational Manual OP 4.01 Annex B, January 1999 of the World Bank requires separate ESIA and a RAP reports for Category A project. OP.4. 01, para.3. requires these reports to take into account natural environment (air, water and land), human health and safety and social aspects (involuntary resettlement, indigenous peoples, and cultural property).

The RAP Report, which deals specifically with resettlement and compensation, needs to include also comparable national legislations, particularly as it pertains to Expropriation of Land for Public Purposes & Compensation Proclamation, No. 455/2005 and Research and Conservation of Cultural Heritage Proclamation No. 209/2000.

8.2.1 Involuntary Resettlement

The World Banks OP 4.12 details involuntary resettlement, emphasizing the severe economic, social and environmental risks involved, if unmitigated. The World Bank's Policy objectives urge that involuntary resettlement be avoided whenever possible. If involuntary resettlement is unavoidable, displaced persons need to:

- share in project benefits,
- participate in planning and implementation of resettlement programs, assisted and
- be assisted in their efforts to improve their livelihoods or standard of livings or at least to restore them, in real terms, to pre-displacement levels or levels prevailing prior to the beginning of project implementation, whichever is higher.

8.2.2 Cultural Property

Operational Policy 4.11 of the World Bank defines Cultural Property to include both remains left by previous human inhabitants (e.g. middens, shrines) and unique natural environmental features such as canyons and waterfalls. The Bank does not support projects that will significantly damage non-replicable cultural property and assists only those projects that are sited or designated so as to prevent such damage.

9 Framework for Public Consultation and Participation

9.1 Objectives of Public Consultation and Information Dissemination

In the context of resettlement, public participation includes both the information exchange (dissemination and consultation), and collaborative forms of decision-making and participation. Dissemination refers to transfer of information from Project authorities to the affected population. Consultation, on the other hand, generally refers to joint discussion between Project authorities and the affected population serving as a conduit for transfer of information and sharing of ideas. Public participation is an ongoing process throughout resettlement planning and implementation, not an event. The level of information which is disseminated or the issues on which consultation takes place vary with the progress in the Project process and resettlement activities.

Specific objectives of the public information campaign and public consultation are as follows:

- To share fully the information about the proposed Project, its components and its activities, with the PAPs
- To obtain information about the needs and priorities of the PAPs, as well as information about their reactions to proposed policies and activities
- To inform PAPs about various options for relocation and rehabilitation
- To obtain the cooperation and participation of PAPs and related communities in activities required to be undertaken for resettlement planning and implementation
- To ensure transparency in all activities related to land acquisition, resettlement and rehabilitation
- To establish a clear, easily accessible and effective complaints and grievance procedure
- To assist PAPs in relocating to replacement houses

9.2 Public Participation and Consultation in Resettlement

9.2.1 Project Preparation

During the RAP preparation phase of the Project, information on the Project was provided to different stakeholders as part of the preparation of the inventory of impacts and the Socio-Economic Survey (covering 100% of PAPs on Option C, 28% on Option B and on a random basis on Option A.

Meetings were held with Regional administration officers and representatives of Woreda and Kebele. Meetings took place both in groups or on a one-to-one basis. The Project was explained with particular emphasis on the nature of the impacts and the compensation entitlements. Care was taken to keep the information within context, and to ensure that people understood the limitations of the impact. This applied particularly to the limited extent of the land acquisition requirement, and clarified that permanent land acquisition is only required for the construction of transmission towers, substations and access roads.

Discussions and consultations about the compensation rates to apply will be carried out by the Executing Agency (EEPCo) in association with Regional Administrators during Project implementation and a joint agreement reached. Section 14 of this Report outlines the organisational responsibilities for implementation of compensation and resettlement issues for the Project.

Ongoing community liaison for the Project includes the following:

- Review inventory of PAPs and impacts on the basis of the design and detailed sitings of the Project
- Confirm identification of PAPs and compensation entitlements

- Inform PAPs about the project, activities, effects, compensation and related provisions and timing
- Confirm PAPs' preferences for how replacement land, houses and crop losses are to be provided or purchased
- Provide independent financial advice or counselling for PAPs to receive significant cash compensation
- Establish complaints and grievance procedure

9.2.2 Public Participation during the Project

Public consultation will take place on a number of levels and at several stages of the RAP process. In so doing, it will ensure that there is open and interactive communication between stakeholders, that minority groups and women are fairly represented, and that there is a framework for effective disclosure to all relevant stakeholders.

Persons and organizations that will be consulted include, but are not limited to:

- People who are affected by the Project, both those who are potential beneficiaries and/or losers;
- Officials from relevant ministries and government agencies;
- Officials from regional and local administration: relevant bureaus and departments, municipalities, local administration offices, and/or peasant associations;
- Local elders who are familiar with the social and economic environment. They would also know sites of significance related to religious or cultural traditions;
- Women as local users of natural resources;
- Local NGOs and CBOs.

Public consultation has been an integral part of the process used for gathering data; for understanding community and individual preferences; for selecting project alternatives, and for designing viable and sustainable mitigation and compensation plans. It has been included in the planning and design phases as well as during implementation.

10 Identification of Project Impacts of Affected Populations

10.1 Description of Works

The following description of works focuses on Option C specifically, although the technical specifications apply to all route Options.

The proposed works include the construction of a 230 kV (highest operation voltage is 245 kV) double-circuit line with lattice steel towers and all aluminium alloy conductors (2- 450 mm^2 cross-section) from the existing Bahir Dar substation in Ethiopia to a new substation at El Gedaref in Sudan. Most of the construction activity during Project implementation will involve the construction of the transmission line. The line will use self-supported steel lattice towers with concrete foundations as commonly used in Ethiopia.

Basic information for the Bahir Dar - El Gedaref alignment:

1. Line Length for the total Route -Bahir Dar (Ethiopia) to El Gedaref (Sudan): 446 km
2. **Line length in Ethiopia from Bahir Dar to Metema: 296 km**
3. Approximate number of towers: 915 (603 in Ethiopia, 312 in Sudan)
4. Average span length: 0.5 km
5. Width of line corridor RoW: 40m
6. Design and fabrication of materials (6 months)
7. Total construction time: September to September (12 months) multiple work teams
8. Access road: a 5m-wide path along the line route will be required for repair and maintenance in the absence of a public road.

10.1.1 Ancillary Facilities and Services

The following construction and post-construction facilities and services will be required:

- Tower erection, this follows tower foundation excavation/construction and uses the same area used by civil works.
- Approximately 7 (5 in Ethiopia) construction material storage and camp areas will be required each approximately 5 ha in area (contractor to determine actual number).
- Access for stringing of conductors is along the line corridor.
- Access to tower sites will be via the line corridor whenever possible to reduce the number of temporary access roads required during construction.
- A number of permanent access roads will be required for maintenance purposes along the transmission line route.

10.1.2 Operation and Maintenance Activities

10.1.2.1 Line Route (RoW)

A permanent area (typically of 40m width, i.e. 20m clear of the route centre line) of land will be required to accommodate the transmission line, when completed. A parallel strip of land through those sections of the route which pass through vegetation shall be completely cleared. The width of the strip may vary according to the mean height of the vegetation and shall be determined by ensuring that any standing tree would not cause flashover from a conductor deflected up to 45° from the vertical. In determining the flashover clearance and in estimating the mean height of the vegetation due allowance shall be made for seasonal growth. In addition, any tree that may fall in the direction of the overhead line shall be cleared unless located more than 20 m plus the height of the tree clear of the route centre line.

Routine maintenance is carried out along the RoW to ensure the appropriate clearances between towers, conductors and vegetation and other objects are maintained according to the required safety/operation specifications listed above. A 5m wide path along the line route will be required in

the absence of a public road. Maintenance is normally carried out twice a year (dependent on site conditions).

10.1.2.2 Area of Impact

The area of immediate impact will be the Line corridor Right-of-way (RoW) which will be 40m in width by 296 km in length from Bahir Dar to Metema in Ethiopia. A parallel strip of land through those sections of the route which pass through vegetation will also be completely cleared of all trees, scrub and undergrowth above a height of 150mm during the construction stage. Appropriate clearance between conductors and vegetation/structures along this corridor will be maintained throughout the life of the transmission line. Cropping and grazing beneath the conductors is normally permitted.

Tower foundations will require a permanent area of approximately 7m x 7m (49m^2) based on a typical 220 kV line tower. The temporary area required during tower foundation construction will be 10m x 10m. Tower foundation materials and equipment will be stored in the area reserved for stringing along the line corridor.

Additional temporary land will be required for worker camps and storage of construction materials during the dry season as well as the line corridor.

10.1.2.3 Project Implementation

In line with similar projects implemented in Ethiopia, construction is expected to start after contract signing following international competitive tendering. Pre-construction activities associated with design work include soil investigations and detailed survey of the transmission line route and substation location. Actual mobilization for construction work will follow within six to twelve months of final design. The mobilization period includes activities for preparation of material storage areas, camps, water, power, communication and other site facilities and pre-fabrication of towers.

Construction of the transmission line will then start by preparation of tower foundations, followed by tower erection & conductor stringing. Construction of the substation will start by substation civil works (equipment foundations & substation building) and installation of equipment.
The dominant land use along the transmission line route is rain-fed agriculture and crops are normally grown only during the rainy season from June-October. The land is left to fallow and/or used for grazing during other times of the year. During this period and due to the absence of paved roads it will not be possible to transport material or to carry out construction work. Also during heavy rains it will be very expensive to properly store building materials, especially cement.

For these reasons most site works will proceed during the dry season November-June, when there is no cultivation. This will facilitate construction and reduce impact on crops to a minimum. Working during the dry period will also provide job opportunities for local people after the busy cultivation season.

The project is planned to be completed within 20 months from awarding of the construction contract assuming construction takes place predominantly during the dry season and it will take approximately 18 months for equipment design, fabrication, delivery, erection and testing.

10.2 Scope of Resettlement

10.2.1 Income Restoration Strategy

Although no significant displacement by PAPs is predicted, certain assets will be affected by Project-related activities. Despite this, the Consultant believes that no major threats will be posed to livelihoods and most PAPs will be able to continue their farming and animal production activities near to, or in the same locality of their original place of residence.

The major assets for which compensation will be paid are:

a) Private houses, out-buildings and fences
b) Farm land (crop loss)
c) Private plantation (tree loss)
d) Grazing land (fodder loss)
e) Public buildings and temporary loss to social services infrastructure;

10.2.1.1 Private Houses

Materials and design features of houses, out-houses and barns differ significantly in Project-affected areas. Houses are constructed from a range of materials, namely mud and wood or stone, mud with straw reinforcement, mud-brick, corrugated iron steel (CIS) or cement brick. Roofs are constructed variously from thatch and corrugated iron steel. Fences around homesteads also differ considerably, ranging from woven mating, bamboo, wood, wire and corrugated iron steel sheeting (See Appendix 2, Photo 1).

10.2.1.2 Private Plantations and Economically Valuable Trees

Wood is the main source of fuel for most Project-affected households. It is also used to construct houses and fences, and provides an important source of household revenue when sold as scaffolding for building or bridge construction. Loss of woodlots or plantations to transmission line construction would thus have considerable impact on household economy, and due compensation would be required.

In Ethiopia, there is a prevalence of Eucalyptus, Black wattle and bamboo plantations on all routes. Removal of a large number of these trees will be necessary for the construction of access roads and tower sites, and areas directly under the transmission line (line corridor) will have to remain permanently cleared.

10.2.1.3 Farmland and Grazing Land

Compensation will be made for loss of crops during the construction of access routes, line corridors and tower sites. The most commonly cultivated crops in Project affected areas are teff, maize, sorghum, beans, and sesame. Cattle, goats and sheep are raised in all Project affected areas.

A line corridor of a width of some 5-6 metres between towers will have to be cleared to allow for the construction of the towers and the stringing of conductors. These access roads may have to remain operative for a number of months. During this period, crops and grazing lands will be temporarily affected by the Project. However, it is recommended that construction be concentrated during the dry months (in some areas this is a necessity). These months (October to May) mark the period when little to no cultivation is conducted in Project affected areas.

10.2.1.4 Public Infrastructure

All Project affected areas are severely under-serviced with schools, hospitals, health and sanitation facilities and other services infrastructure. Due compensation will have to be paid for temporary or permanent damage to buildings, and the appropriate mitigation measures will be undertaken to ensure that alternative buildings are constructed prior to impact by the Project. The Consultant advises, however, that all possible measures be taken to re-align the transmission line route in order to avoid damage to social services.

10.3 Relocation Preferences

Based on discussions held with Sector offices and PAPs on Option C and Option B1 and B2, it has been observed that most PAPs wish to remain within the same locality of their original places of residence where they may retain their familial, social and cultural networks.

10.4 Compensation Preferences

All discussions conducted with focus groups and sector offices have revealed that the general preference for compensation is for financial reimbursement for lost or damaged assets. Where land-for-land compensation is often not possible, financial restitution is the only option available.

11 Impact Assessment of the Proposed Route Options

11.1 General Comments

Because of the linear nature of a transmission line development, the Consultant believes that the Ethiopian-Sudan Power System Interconnection Project will have minimal impact on communities or persons, and on private or common property assets. However, compensation may be due where project right-of-way (RoW) affects residential dwellings or social services (which will pose health and safety problems); may fragment cultivated fields and compromise productivity/income; may involve the removal of fruit-bearing trees and other relevant natural resources, or may partially or totally disturb cultural properties such as churches, mosques, historical or archaeological sites. Although it is anticipated that the project will inflict minimal impact upon PAPs, site specific relocation may have to occur where substations, access routes or towers are to be located.

Negative Impacts

Project impact will occur predominantly during the construction phase in the form of:

- Clearance of access routes (crop damage)
- Clearance of line corridor between towers (crop damage; removal of trees)
- Earth-moving and tower construction (crop damage; removal of tress; temporary or permanent damage to dwellings or social services properties)
- Importation of skilled workers into rural areas (health concerns, esp. HIV/AIDs; over-exploitation of local resources such as water , wood fuel and other natural resources)
- Construction of work camps (damage to crops and properties; potential affects from inadequate waste management facilities etc.)

Positive Impacts

- **Direct Positive Impacts**

While major attention will focus on loss of income due to temporary disturbance to fields or grazing areas, and on health conditions related to the influx of foreign workers, positive opportunities to PAPs may be presented in the form of temporary employment during the construction phase, as well as through income generated by the sale of food and other consumables to migrant workers.

The most positive impact of the Project *could* be the provision of electricity to communities within the Project alignment. As detailed in the Recommendation Section of the Report, developing the transmission line in association with an existing or proposed single-circuit alignment (as would be the case with Option C in particular) would ensure tangible benefits to local communities.

- **Indirect Positive Impacts**

In the Recommendations outlined in this report (Section 18), the Consultant emphasizes that the provision of local electrification either directly from the Project, or as a complementary and indirect benefit of the Project, would be the most significant long-term positive impact of the Project.

Rural electrification lies at the centre of the poverty-reduction programmes in Ethiopia, and would support rural economic development through the provision of power to generate water pumps, grinding mills and local industries.

Significantly, local electrification would have significance with regard to women's work burden; pumped water and electricity would spare them the arduous daily responsibilities of collecting

water and fire wood. So too would it have a significant impact on the environment which is widely threatened by deforestation and soil erosion.

Electricity would support overall investment in education and strengthen the ongoing effort of capacity building to overcome critical constraints in the implementation of development programmes. Essential to this effort would be power supply to health facilities for the installation of cold storage facilities for the safe transportation and storage of vaccinations and other vital medications.

Given the detailed socio-economic profiles presented in the previous Sections of the report, which indicate that most Project affected communities are severely under-serviced, it is evident that power supply to local communities by this Project would have far-reaching positive development implications.

11.2 Impact Assessment of Route Option C

Option C is situated in the northern Amhara Region in Ethiopia. It commences at the substation in Bahir Dar and loosely follows the road to Gonder (Azezo) and on to Shehedi before proceeding to the border town of Metema.

The topography between Bahir Dar and Gonder (Azezo) commences on the flood plains to the south-east of Lake Tana. Towards Gonder (Azezo), the area is dramatically transformed into precipitous mountains that are too steep for habitation. From Gonder (Azezo) to Shehedi, the road descends into a landscape that is utilized largely for small-scale subsistence cultivation and communal grazing. Towards the border with Sudan, the terrain levels out into lowland savannah woodland and into an indigenous forest area managed by the Amhara Region as a 'greenbelt'.

Option C is the most direct of the three proposed routes and has been recommended in the 'Ethiopia-Sudan Power Systems Interconnection Project Feasibility Study Update' (2005) as the most cost effective. In Ethiopia, EEPCo has already constructed a single circuit line from Bahir Dar to Gonder (Azezo). Currently, a single circuit line along the Gonder (Azezo)-Shehedi component of the route is being constructed. Should this route Option be selected by the Project Proponent, the same towers will be utilised and the existing EEPCo line will be upgraded from a single-circuit to a double circuit (245 kV) transmission line. This being the case, it is expected that the Project will exact minimal additional impact on affected communities beyond the construction phase for this section of the Route.

Scope of Impact

100% household surveys have been conducted along the entire route alignment from Bahir Dar to Metema on the border with Sudan. Total number of households surveyed is 3207.

The survey revealed that some 535 ha will be affected by the Project, of which 532 ha of land will be temporarily required for the construction of a RoW, and 2.95 ha is permanently required for the positioning of tower bases.

TABLE 26. SUMMARY OF PERMANENT IMPACTS ON OPTION C (ETHIOPIA)

Route Section	No. of Towers	Land Required for Towers (m^2)	Permanently Affected Land (ha)
Bahir Dar – Gonder (Azezo) 137.5 km	274	13426	1.34
Gonder (Azezo) – Shehedi 122 km	256	12544	1.25
Shehedi – Metema 36.5 km	73	3577	0.36
Total (296 km)	**603**	**29547**	**2.95**

TABLE 27. SUMMARY OF IMPACTS ON OPTION C (ETHIOPIA)

Route Section	Total No. of PAPS Surveyed	Total No. of PAPs to be Relocated	No. PAPS to Lose Land Temporarily	No. PAPS to Lose Land Permanently	Temporary Loss of Land Along RoW (ha)	Permanent Loss of Land due to Towers
Bahir Dar-Gonder (Azezo) **137.5 km**	1877	221	1296	360	318	274 towers 1.34 ha
Gonder (Azezo)-Shehedi **122 km**	1005	46	793	256	184	256 towers 1.25 ha
Shehedi-Metema **36.5 km**	325	16	245	64	30	73 towers 0.36 ha
Total 296 km	**3207**	**283**	**2334**	**680**	**532**	**603 towers** **2.95 ha**

The findings of the survey indicated that the following assets are likely to be acquired:

- Farmland
- Private houses
- Private plantation
- Grazing land
- Community infrastructure

Impact on Farmland

The total land to be acquired for the project is 535 ha, of which a total of 2.95 ha will be lost permanently for the construction of tower bases, and 532 ha will be lost for a period of one year for clearance of the RoW. The temporary loss of 532 ha of land is distributed over 603 towers along the alignment (Bahir Dar substation-Metema).

A household census of 3207 families was conducted along the alignment (see RAP Final Report: Volume II for a complete list of PAPs). Of these, the survey identified that 680 households will lose land permanently for tower bases. The impact on each household for permanent land loss will not be more than 49 m² or 0.0049 hectares (per tower base). This is considered minimal considering that the average farm holdings of 1.5 and 3 hectares in the highlands and lowlands respectively. In addition, the farming of ground crops will be allowed to continue once tower construction is completed. Disruption to crop production will be experienced for a period of one year only.

Impact on Residential Dwellings

Most of the houses (CIS) and cottages (tukul) in the Project affected area are constructed from the same materials and according to the same design. All houses are constructed from wood with corrugated iron roofs (CIS); and all tukul are made from mud/straw with thatched roofs.

The Consultant has estimated that a total of 283 residential buildings are located within the Project RoW and will have to be removed. Of the 283 affected houses, 185 are tukul, and 98 are CIS houses. Permanently affected houses are not located in one area, but are spread across the 296 km route. Impact on residences will not require full resettlement, but will involve shifting the residence to a different portion of the property (out of the RoW) or, in the case of a town, to within the vicinity.

TABLE 28. SUMMARY OF RESIDENTIAL DWELLINGS PERMANENTLY AFFECTED BY PROJECT

Route Section	No. of Tukul	No. of CIS	Total
Bahir Dar – Gonder (Azezo)	147	74	221
Gonder (Azezo) – Shehedi	22	24	46
Shehedi – Metema	16	-	16
Total	**185**	**98**	**283**

The total cost for the replacement of these houses is USD 258,577.

Impact on Fences

The Project will affect different fences made variously from wood (woven bamboo), sisal, wire and corrugated iron, and linked to residential dwellings. The survey indicated that some 18,973 m² of fencing will be affected, and estimated at a total cost USD 55,834**.**

Impact on Private Plantations: Eucalyptus trees

The following data on the productivity of Eucalyptus is directed by the Koga Irrigation Project Report, Environmental and Protection Authority, Amhara Regional State, 2004, as well as from field data collected from interviews held with farmers in Project affected areas.

Eucalyptus wood is the main source of fuel for most households within the Project affected area. It is also used for construction and commercial income. Loss of trees would have considerable impact on households. Compensation of Eucalytpus tree is a complicated procedure (see Appendix 4: Valuation Methods). Total estimation on loss of Eucalytpus trees is USD 610,413.

Impact on Other Economically Valuable Trees

Economically valuable trees located in the Project area are coffee, hops, papaya, banana, avocado and guava. In addition, indigenous trees such as *Acacia abyssinica* (girar), *Syzigium guineense* (dokma), *Cordia africana* (wanza), *Ficus vasta* (warka) and *Olea europea var.africana* (woira) have economic value.

Estimated loss of fruit and other economically valuable trees is USD 67,929.

Impact on Public Infrastructure

No public buildings or government offices will be affected by the Project. The original design alignment for EEPCO's single circuit line would have affected one school in the village of Ginti. EEPCO has changed the alignment so that the transmission line has been re-routed to avoid impact on the school altogether.

On the Shehedi-Metema alignment, one water point will be affected, amounting to a total replacement cost of USD 1,600.

Gender composition

Of the 3207 households surveyed in the Project area, 3093 households (96.5%) were male-headed, and 114 were female-headed households (3.5%). This relatively high statistic of female-headed housesholds indicates that special attention should be paid to vulnerable households in the Project area. Landlessness, early marriage, premature childbearing, lack of access to productive resources, poverty and unemployment adversely affect women of the area. Women not only have to bear heavy domestic responsibilities, but also have to play a major part in farm activities and maintenance of community relations.

Attitude towards the Project

<u>Consultation with affected people</u>

Central to the social assessment was public consultation, which was carried out throughout the study area. Stakeholders included representatives of the local communities, local authorities (kebele/administrative units) and representatives of different sector bureaus and offices.

Consultation was conducted in order to:

- Disseminate information about the intended project
- Identify attitudes of affected communities towards the project.
- Identify anticipated project impacts on the socio-economic and cultural life of communities
- Identify stakeholders and their specific role in Project-related activities
- Identify the degree of community participation

Consultation with Community Representatives

Consultation with community representatives took place in the Chilga and Metema Woredas where the project will have most impact. Here, discussions were held with community and environmental groups.

Discussions covered the following issues:

- Project objectives and design
- Attitudes of the local communities towards the proposed Project
- Anticipated positive and adverse impacts of the Project on socio-economic life of the community
- Identify anticipated adverse impacts of the proposed Project and discuss mitigation measures
- Discuss preferences for compensation

It was revealed that in general the communities within the Project area were aware of the Project. They demonstrated a positive attitude towards it as they recognized the benefits the Project would have on local socio-economic circumstances. However, they were concerned that the Project facilitated the following issues:

- Fair compensation for assets lost
- Minimize land acquisition
- Ensure adequate land allocation, and
- Livelihood restoration.

Compensation Preferences

Based on discussions with community members in the Project area and on responses obtained from household surveys, most PAPs preferred to have land-for-land compensation. This would only be the case where total loss of farmlands would be experienced. Since this will not occur in this Project, cash compensation is considered acceptable.

11.3 Route Option B1and B2

In Ethiopia, Option B is divided into B1 (Debre Markos-Injibara-Border: 366 km) and Option B2 (Bahir Dar-Injibara-Border: 343 km). These are longer and more circuitous routes than Option C (Bahir Dar-Gonder (Azezo)-Shehedi-Metema). Both Option B1 and B2 pass through continuous, intensively cultivated areas in Ethiopia.

11.3.1 Option B1: Ethiopia

Scope of impact

According to the engineering survey conducted of Option B1 (Debre Markos-Injibara-Guba) by EEPCo in 2002, some 275 PAPs may be affected by the Project. Impact by the transmission line may occur to farmlands, residences, businesses, and different types of trees (perennial and fruit trees). Other affected properties and assets include government buildings, one rural kebele

administration office, a prison, and two flour mills. In addition, a large number of Eucalyptus trees and coffee plantations will be also affected during the construction of works. Both Eucalyptus and coffee trees are among the more significant sources of household income in the area.

The Consultant carried out sample surveys on the route approximately 3 years after the original EEPCo survey had taken place, covering household inventories of some 77 (28%) of the Project affected households. These households were located on the Debre Markos-Chagni alignment in East and West Gojam, and the Awi zones of Amhara Regional state. Project impact in the Benishangul-Gumuz Region will mainly affect forested areas, and to a far lesser extent, farmlands.

The Consultant has estimated that a total of 336 buildings within the 275 households (this includes outbuildings that have subsequently been added to household compounds) are now located within Project RoW and may have to be removed or demolished. Of these, 235 are tukul or houses with thatched grass roofs, and 101 are constructed from mud and wood with corrugated iron sheet (CIS) roofs.

It is significant to note that impact on residences will not require full resettlement, but will involve relocation of homesteads within the vicinity.

Size of Project Affected Households

The total number of people involved in the household survey was 432, of which 223 (51.6%) were women and 209 (48.4%) were men. The average family size of sample PAPs is 5.6.

The sample survey revealed that most of the houses in the Project affected area were constructed between 1998 and 2003. Most of the affected houses were constructed within the last ten years. The size of the affected houses varies significantly, ranging from $10m^2$ to $120m^2$.

Gender Composition

Among the 275 affected households identified in the 2002 EEPCo survey, 85% (or 234) were male-headed, and 15% (or 41) were female-headed households. Similarly, the gender composition of the sample households surveyed by the Consultant indicates that of the 275 affected homesteads, ten (13%) are female-headed. This statistic reveals that the number of female-headed households is significant and indicates that women play an important role in the social and economic life in the Project area.

Vulnerable PAPs

Vulnerability of PAPs refers to elderly-, sick-, infirm- and disabled-household heads. While the EEPCo survey identified no vulnerable households in 2002, the Consultant's sample surveys revealed that there were some 18 elderly-headed households in the Project affected area.

Impact on Farmland

The exact size of farmlands to be affected by the Project is not known at this stage.

However, according to the EEPCo survey findings, the size of coffee plantations affected along the tie-line varies from $250m^2$ to $10,000m^2$. The farm size for coffee plantations to be affected between km 67 to km 81 is estimated to be about $25\ 000m^2$ (or about 2.5 hectares).

According to the inventory of sample households conducted by the Consultant, the size of farmland that will be affected is about 30.6 hectares of land. The RAP Draft Final Report Volume II provides a list of sample PAPs.

The impact on farmlands in general is estimated to be minimal. Farmlands may be temporarily affected by access roads, the line corridor and towers, but crop production will only be affected during the construction of works. The only exception to this will be impact to trees (especially

Eucalyptus) which grow to a height of seven meters or above, and will therefore have to be permanently removed.

Impact on Infrastructure

The impact on infrastructure is mainly on residential dwellings and fences, and on a small number of business establishments, such as grinding mills. About 60% of the affected houses are constructed from wood and mud with thatched roofs; about 40% are constructed with wood and mud with corrugated iron sheet roofing (CIS).

Impact on trees

The greatest impact by the Project on Option B1 will be on trees and forest resources. In the first section of the route (Debre Markos to Chagni), most of the affected woodlots are located on subsistence farms and are often near to homesteads. Amongst the trees to be affected include coffee, hops, Eucalyptus and fruit trees (esp. mango, avocado, and papaya). These trees carry a high economic value for households. Eucalyptus is of particular importance as it has both domestic fuel and construction, and commercial value. Coffee and fruit trees also provide regular annual income to the households. Coffee fetches an average price of 15 Birr (USD 1.75) per kg.

In the second section of the route (Chagni-Guba-El Mahal), the Project impact will be on state and communal forest resources (e.g. Eucalyptus, Acacia, lowland bamboo, and other indigenous species). This section of the route is inhabited mainly by the Gumuz people and is sparsely populated.

Attitudes Toward the Project

Discussions held with PAPs and their leaders by the Consultant revealed that a combination of cash and land-to-land was the preferable compensation option allowing PAPs to re-build their own houses on newly allocated land. Further, they preferred not to have an assisted resettlement plan, but to remain in the same vicinity where they may retain their social, cultural and economic networks.

Among the 77 sample PAPs surveyed, 29 preferred cash compensation, while 48 requested a combination of land-to-land and cash compensation.

11.4 Route Option A

Based in the Oromiya and Benishangul-Gumuz Regions in Ethiopia and the An-Nil al-Azraq (Blue Nile) States of Sudan, Option A is regarded by the *Ethiopia-Sudan Power Systems Interconnection Project Feasibility Study Update* (2005) as the least viable of the three proposed routes. This Option connects the substation at Gedo to Nekemte, Ghimbi and Assosa to Kurmuk on the Ethiopian border. From there, it traverses to the substation at Roseires in Sudan. The total tie-line is 614 km of which 474 km is within Ethiopia. Option A is the longest of the proposed routes, much of which passes through difficult terrain that lacks an all-weather road infrastructure.

Scope of Impact

Given that there is insufficient survey data for the proposed transmission line for Option A, it is not possible to produce an exact inventory of assets damaged or lost by the Project. A rapid site survey of the route in Ethiopia reveals that the transmission line will run through scattered farmlands (predominantly maize, teff, sorghum, coffee and sesame), woodlots (Eucalyptus), plantations (Eucalyptus, Black wattle) and communal grazing land. From Assosa, the environment changes into lowland bamboo savannah and deciduous woodland, and inhabitation becomes progressively scattered.

A small number of dwellings may be affected by the line – e.g. in the vicinity of the substation at Gedo, and on the periphery of some towns and villages. However, taking the EEPCo single circuit

line as the alignment of the proposed transmission line, it may be assessed that most towns and villages will be bypassed so as to minimize impact to dwellings, social services and commercial enterprises.

EEPCo has made compensation payments to PAPs along the single circuit line from Ghimbi to Assosa which is currently under construction. This demonstrates that EEPCO has experience in undertaking surveys of PAPs, evaluation of project impacts along the alignment, and has implemented compensation payment in the Project area in association with local authorities.

TABLE 29. SUMMARY OF ASSETS AFFECTED BY THE PROJECT FOR OPTION A

Assets lost	Percentage of Total Route	Total km of Affected Asset from Total of 614 km	Estimate of Affected Area (ha)	
			Permanent	Temporary
Farmlands (teff, maize, sorghum, sesame)	40	245.6	6.02	982.4
Forests/plantations (Eucalyptus, black wattle, bamboo)	15	92.1	368.4	-
Economically valuable trees (mangoes, bananas, citrus, coffee)	5	30.7	122.8	-
Communal grazing land	20	122.8	Not compensated	Not compensated
Dwellings (tukuls + CIS) and social services	0.5	3.07	-	-
Commercial enterprises (kiosks, tea houses)	0.5	3.07	-	-
Indigenous forest	19	116.66	Not compensated	Not compensated
TOTAL	**100**	**614.00**	**-**	**-**

12 Compensation Framework

12.1 Project Resettlement Policy (RP)

12.1.1 General Approach

Policies to compensate loss of land or property by the proposed Project are based on Ethiopian federal laws, regulations stipulated by Regional Authorities, and outlined in the World Bank Operational Directives/Policies on involuntary resettlement. The primary objective of the land acquisition and Resettlement Action Plan (RAP) is to restore the income and living standards of the affected persons within a short period of time after resettlement and with as little disruptions as possible. Particular attention will be given to the needs of the poorest and most vulnerable groups.

12.1.2 Principles of Compensation

According to the legal and policy requirements of the Ethiopian Government and the World Bank, the principles of compensation and entitlements established for the project are as follows:

- That compensation and entitlements provided to PAPs ensure that pre-Project standards of living are maintained or improved;
- That land temporarily occupied is kept to a minimum;
- That all PAPs, legal and illegal, are taken into consideration and accounted for;
- That per capita land holding after land acquisition is sufficient to maintain livelihood standards;
- Where land allocation per capita is not sufficient to maintain livelihood, that other income generating activities are provided for;
- That all PAPs are adequately informed on eligibility, compensation rates and standards, livelihood and income restoration plans, and project timing; and
- That no land acquisition will take place prior to satisfactory compensation and resettlement of the PAPs.

12.1.3 Compensation Eligibility

All PAPs and organizations (whether public or private) who lose land, buildings/houses, crops or sources of income will be compensated or rehabilitated according to the types and amount of their losses (permanent and temporary).

The cut-off date for compensation eligibility will be set once all detailed measurements have been completed. Cultivating land, constructing buildings or settlements in Project affected areas after the cut-off date will not be eligible for compensation or subsidies. Compensation will also not be paid for any structures erected, or crops and trees planted purely for the purposes of gaining additional compensation.

12.1.4 Compensation Standards

The following section describes the compensation standards to be adopted for this Resettlement Action Plan. Detailed compensation rates will be based on standard regulations and estimates and provided in Section 13: Compensation Plan and Detailed Budget.

12.1.5 Compensation for Loss of Cultivated Land and Crops

Depending on the availability of land, permanently cultivated land lost to the Project will be compensated on a land-for-land basis. However, if there is shortage of land, crop loss will be compensated in cash to PAPs at a rate equivalent for 7 – 10 times the Average Annual Output

Value (AAOV) for a stipulated number of years. This time frame is considered sufficient for a household to be re-established elsewhere.

Another approach to compensation of cultivated land is to make ready 'seed capital' in proportion to the amount of annual loss of crops. This will be facilitated by depositing money into a bank account which can yield interest each year equal to the amount of income lost.

Temporary loss of cultivated land will be directly compensated in cash at a rate equivalent of AAOV for the number of years that the land is not available for cultivation.

12.1.6 Compensation for Residential Land, Houses, and Fixtures

Residential land, houses, buildings and other fixture losses will be directly and fully compensated at replacement cost free of demolition expenses and salvaged materials. Compensation for residential land will be paid to the responsible unit that will, in consultation with the village committee, make available replacement plots within the community. If this is not feasible, the responsibility will be assumed by local government. Houses, out-buildings, apartments and related fixtures will be compensated in cash at replacement cost with monies paid directly to the PAPs. Renters of affected houses/buildings will be guaranteed of a rent contract at the same rental terms.

12.1.7 Resettlement Allowances for Home-Owners

In addition to the compensation for houses and land, relocation allowances will be paid to PAPs. These relocation allowances cover relocation and resettlement costs, including rent of temporary accommodation that may be due between the period of demolition of the old house and the construction of a new one (i.e. transition allowance). The cost of moving all household items and any salvageable materials to the new house, or from the rented house to new house (i.e. moving allowance) will also be paid. These allowances will be payable as a lump sum to PAPs.

12.1.8 Compensation for Loss of Businesses or Employment

The transition allowance for a commercial business moving from old premises to a new one will be calculated on the basis of total post-tax profit during the six months prior to relocation as declared by the business to the tax-collection agencies. The transitional allowance for employees' loss of income will be equal to the total sum of earnings (including basic salaries and national subsidies) of all registered employees (including those retired) for 6 months prior to relocation.

These allowances will be paid on a monthly basis for up to 6 months from the date of removal from the original premises.

Moving Allowance: The allowance for transport and re-installation of the equipment of enterprises will be based on regulations stipulated by the Federal and Regional State. An allowance equal to the actual expenditure on renting storage space will be paid for temporary storage (if any) of equipment and materials.

12.1.9 Relocation of Public Buildings

All the public buildings affected will be replaced or paid in cash directly to its owners.
New schools and health facilities will be re-constructed before the affected one is demolished.

12.1.10 Vulnerable Households

Special attention will be paid to the vulnerable groups, defined as those already experiencing hardship (e.g. as a result of extreme poverty, sickness, female-headed households, the aged, etc.) and for whom loss of land/property could lead to further hardship. In order to ensure that resettlement does not further exacerbate the conditions of these groups, certain incentives will have to be offered to them in consultation with community representatives.

13 Compensation Plan and Detailed Budget

13.1 Option C: Ethiopia

Basis of Compensation

Compensation valuation methods are based on similar projects implemented in the region, calculated according to 2006 replacement rates and values. Any further adjustments that may be necessary, can be done in consultation with the respective country resettlement committees that will be established prior to the commencement of the Project.

As the result of the survey, it is estimated that a total of 535 ha will be acquired for the Project. Land acquisition will affect a total of 680 families. Some 2.95 ha of land will be permanently lost for tower bases, and a further 532 ha will be lost for one year only.

TABLE 30. COMPENSATION FOR AFFECTED FARMLAND

Route Section	No. of Towers	Land Required for a Single Tower (49m$^{2)}$	Hectarage Affected
Bahirdar – Gonder 137.5 km	274	13426	1.34
Gonder (Azezo) – Shehedi 122 km	256	12544	1.25
Shehedi - Metema 36.5 km	73	3577	0.36
Total 296 km	**603**	**29547**	**2.95**

Summary of Permanent Crop Loss in Project Affected Area

Compensation for crop loss is made on the assumption that the only land that will be permanently affected will be that occupied by tower bases. The remainder of the land will be affected for a period of one-two years only when construction of the tower sites and RoW is underway.

Compensation is based on the productivity of the land and on current market prices of affected crops. Based on the availability of the farmland in the Project area, permanent cultivated land loss will be compensated on a land-for-land basis. If there is a shortage of land, however (as is generally the case in Ethiopia), loss of cultivated land will be compensated in cash at a rate equivalent to 10 times of Average Annual Output Value (AAOV) of the previous five years.

TABLE 31. SUMMARY OF PERMANENT CROP LOSS FROM TOWER BASES: TEFF*

Route Section	Yield (kg/ha) of Teff	Total Yield (kg)	Price per kg (USD)	Annual Income Lost (USD)	Compensation equivalent for 10 years (USD)
Bahir Dar-Gonder (Azezo)	800	1074.08	0.29	**311**	3,115
Gonder (Azezo) – Shehedi	800	1003.52	0.29	**291**	2,910
Shehedi-Metema	800	286.16	0.29	**83**	830
Total	**-**	**-**	**-**	**685**	**6,855**

* Teff is the average subsistence crop in the Project affected area

Temporary Crop Loss: Bahir Dar-Gonder (Azezo)

The dominant crops produced in the Project area from Bahir Dar-Gonder (Azezo) are maize, teff and sorghum. The calculation in the table below has been made in order to allocate sufficient funds to fully compensate households who will be adversely affected during Project implementation. The current price of maize is 0.202 USD per kg; of sorghum is 0.23 USD per kg, and of teff is 0.29 USD per kg. The following table provides a summary of one-year crop loss in the first route portion of Option C.

TABLE 32. COMPENSATION FOR TEMPORARY CROP LOSS: BAHIR DAR-GONDER (AZEZO)

Crop Type	Hectares Affected	Yield per ha (kg)	Total Yield (kg)	Price USD per kg	Annual Income Lost (USD)
Maize	95.4	1800	171,720	0.202	34,687
Sorgum	127.2	1000	127,200	0.23	29,256
Teff	95.4	800	76,320	0.29	22,132
Total	**318**	**-**	**-**	**-**	**86,075**

Temporary Crop Loss: Gonder (Azezo) – Shehedi

The dominant crops in the Gonder (Azezo)-Shehedi area are teff, barley, maize, sorghum and sesame. Compensation for teff is taken as an average highland crop; sesame is taken as an average crop of the lowland regions of the Project affected area. The price for teff is 0.29 USD per kg and 0.52 USD for sesame per kg. The yield per hectare for teff is 800 kg and 1000 kg for sesame.

TABLE 33. COMPENSATION FOR TEMPORARY CROP LOSS: GONDER (AZEZO)-SHEHEDI

Crop Type	Hectares Affected	Yield per ha (kg)	Total yield (kg)	Price USD per kg	Annual income lost (USD)
Teff	146.2	800	116,960	0.29	33,684
Sesame	37.8	1000	37,800	0.519	19,618
Total	**184 ha**	**-**	**-**		**53,302**

Compensation for Eucalyptus Trees

In the Project area the only tree species used for plantations and woodlots is Eucalyptus. To calculate the compensation for permanent loss of Eucalyptus trees which occur within the Project RoW, see Appendix 4, Valuation Methods.

Survey results indicated that a total of 47,590 Eucalyptus tress occur within the RoW of Option C (Ethiopia) and will have to be permanently cleared.

TABLE 34. SUMMARY OF AFFECTED EUCALYPTUS TREES: **BAHIR DAR-GONDER (AZEZO)**

Type of Tree	Price USD	Existing No. of Trees	Annual Income Loss (USD*)	Compensation Equivalent of 10 Years (USD)
Sapling (Small)	0.7	26602	19,419	194,190
Mature (Medium)	2.4	11545	28,401	284,010
Total		**38147**		**478,200**

* Transportation cost 0.03, 0.06 and 0.58 USD for small, medium and large trees respectively.

TABLE 35. SUMMARY OF AFFECTED EUCALYPTUS TREES: **GONDER (AZEZO)-SHEHEDI**

Type of trees	Price USD	Existing No. of Trees	Annual Income Loss (USD*)	Compensation Equivalent of 10 Years (USD)
Sapling (Small)	0.7	5783	4,221	42,210
Mature (Medium)	2.4	3660	9,003	90,003
Total		**9443**		**132,213**

* Transportation cost 0.03, 0.06 and 0.58 USD for small, medium and large trees respectively.

Total number of Small (Saplings) trees affected: 32,385
Total number of Medium (Matured) trees affected: 15,165
Total cost of compensation will be USD 610,413

Compensation of Fruit and Other Economically Valuable Trees

Hops

Hops trees are located on two portions of the route alignment: Bahir Dar - Gonder (Azezo) and Gonder (Azezo) – Shehedi.

Since no data on hops productivity is available from the relevant sector offices to measure compensation, the following valuations are based on discussions held with local farmers.

It is assumed that a tree will yield 40 kg of leaves *twice* per annum. The regenerative frequency of the life of the tree is 5 years. The current market value of hops is 1.25 Birr or 0.14 USD per kg. Compensation is paid for 5 years on a total of 1899 Project affected trees. The total amount of compensation due is thus USD 53,172.

TABLE 36. SUMMARY OF COMPENSATION OF HOPS TREES ON OPTION C (ETHIOPIA)

Route Portion	No. of Trees	Yield / tree / annum (kg)	Total yield (kg)	Price per kg (USD)	Total Compensation (USD)
Bahir Dar – Gonder (Azezo)	**1825**	**40**	**73000**	**0.14**	**51,100**
Gonder (Azezo) - Shehedi	**74**	**40**	**2960**	**0.14**	**2072**
Total	**1899**				**53,172**

The following trees are located only on the Bahir Dar-Gonder (Azezo) portion of the Option C alignment:

Coffee

Compensation for coffee is based on productive yield per hectare. Some 400 kgs will be produced per hectare on the average traditional farm in the Amhara Region. On each hectare there will be 3100 trees; each tree will yield 0.129 kg of beans. Thus, using the current market prices of coffee at 15 Birr or 1.75 USD per kg, compensation is paid for 7 years.

A total of 756 coffee trees will be affected by the Project. The total amount of compensation is therefore estimated to be USD 1,194.

Papaya

19 800 kg of papayas are produced per hectare on a traditional farm. On each hectare there will be an average of 1100 trees, each of which will yield 18 kg of fruit. The life of the tree is 4 years. Thus using the current market price of papaya at 1.50 Birr or 0.18 USD per kg, compensation for a total of 216 trees in the Project RoW is estimated to cost USD 2,799.

Guava

19 390 kg of guava are produced per hectare on a traditional farm. On each hectare there will be 2770 trees, each of which will yield 7 kg. The life of a guava tree is 5 years. Thus using the current market prices of guava at 1.50 Birr or 0.18 USD per kg, compensation for 53 Project affected is estimated to be USD 333.

Banana

32000-35000 kg will be produced per hectare on a traditional farm. On each hectare there will be an average of 1250 trees; each of which will yield 25 kg. The life of a banana tree is 7-10 years. Thus using the current market prices of banana at 1.25 Birr or 0.14 USD per kg, the compensation is paid for 7 years loss. The total number of banana trees affected in the Project area is 16. The total amount of compensation is therefore estimated to be USD 392.

Avocado

25000 kg of avocado will be produced per hectare on a traditional farm. On each hectare there will be 1000 branches; each branch will yield 25 kg. The life of the tree is estimated at 10-15 years. Thus using the current market prices of avocado at 1.50 Birr or 0.18 USD per kg, the compensation

is paid for 7 years loss. The total number of avocado trees affected in the Project area is 44. The total amount of compensation is therefore estimated to be USD 1,386.

Indigenous Trees

The following trees have economic value: *Acacia abyssinica* (girar), *Syzigium guineense* (dokma), *Cordia Africana* (wanza), *Ficus vasta*(warka) and *Olea europea var.africana* (woira).

Most of these trees do not produce new yields after cutting. Due to this, farmers usually cut the trees after they have matured and sell them for different purposes. Thus, the compensation rate of these trees is based on current market prices. The average market price is 150 Birr or 17 USD for a single matured tree.

The total number of affected trees in this category in the Project area is 509. The total amount of compensation is therefore estimated to be USD 8,653.

TABLE 37. SUMMARY OF COMPENSATION FOR AFFECTED TREES FROM BAHIR DAR-GONDER (AZEZO)

Tree	No. Affected	No. of Trees per ha	Yield for Each Tree Type (kg)	Price /kg (USD)	Compensation Total (USD)
Eucalyptus	38,147				478,200
Coffee	756	3100	0.1	1.75	1,194
Hops	1825		40.0	0.14	51,100
Papaya	216	1100	18.0	0.18	2,799
Avocado	44	1000	25.0	0.18	1,386
Banana	16	1250	25.0	0.14	392
Guava	53	2770	7.0	0.14	333
Other Trees	509			17.00	8,653
TOTAL	**41,566**				**544,057**

Temporarily Affected Trees: Chat

Chat is grown between Bahir Dar-Gonder (Azezo). 1500 kg will be produced per hectares by traditional farming. On each hectare there will be 600 trees; each tree will yield 2.5 kg leaves per year. As the tree may continue to grow under the transmission lines, one year of crop loss is calculated for compensation. The current market price of chat is 20 Birr or 2.31 USD per kg. The total number of chat trees affected in the Project area is 16,798. The total amount of compensation is therefore estimated to be USD 97,008.

TABLE 38. SUMMARY OF TEMPORARILY AFFECTED CHAT TREES FROM BAHIR DAR-GONDER (AZEZO)

Tree	No. of Trees Affected	No. of Trees (per ha)	Yield of Each Tree (kg)	Price per kg (USD)	Compensation (USD)
Chat	16,798	600	2.5	2.31	97,008

TABLE 39. SUMMARY OF COMPENSATION FOR AFFECTED TREES FROM GONDER (AZEZO)-SHEHEDI

Tree	No. Affected	No. of Trees per ha	Yield of Each Tree (kg)	Price per kg (USD)	Compensation (USD)
Eucalytpus	9443				132,213
Hops	74	40	2960	0.14	2,072
Total	**9517**				**134,285**

Compensation for Houses

A total of 283 houses will be affected by the Project, of which 185 are tukuls and 98 are CIS.

Field observations have indicated that certain construction materials may be re-used after displacement. Thus, replacement costs takes into consideration the value of such re-used materials (e.g. eucalytpus poles) and adjustments have been made accordingly.

The total cost of compensation for a house will be paid at the rate of 250 Birr per m² for tukul (USD 30), and 350 Birr per m² for a house with CIS roofing (USD 40). Due to higher cost of building materials in the Shehedi-Metema area, the cost of a tukul is estimated at 300 Birr or 35 USD.

A 10% mobilization and transportation cost will be added to this amount. (See appendix 4, Valuation Methods).

The total compensation estimate for residential dwellings is USD 258,577.

TABLE 40. COMPENSATION COST FOR RESIDENTIAL DWELLINGS

Section of Route	Type of House	Unit Cost (Birr)	Area Affected (m²)	No. of Houses	Cost USD
Bahir Dar – Gonder (Azezo)	Tukul	250	3,023	147	90,690
	CIS	350	2,495	74	99,800
Gonder (Azezo)-Shehedi	Tukul	250	390	22	11,700
	CIS	350	626	24	25,040
Shehedi-Metema	Tukul	*300	224	16	7,840
	CIS	-	-	-	-
			Sub-total	**283**	**235,070**
			10% mobilization fee		**23,507**
			Total		**258,577**

* The cost of building materials in the Shehedi-Metema area is higher

Compensation for Fences of Dwellings

During Project construction, a number of household fences will be affected by tower bases and RoW.

TABLE 41. SUMMARY OF RATES FOR COMPENSATION OF FENCES

Type of Fence	Rates per m² in USD
Stone	17.30
Wooden (bamboo)	5.20
CIS	8.75
Barbed Wire	7.50

The survey result indicates that no fences will be damaged between Bahir Dar and Gonder (Azezo).

On the Gonder (Azezo)-Shehedi portion of the route, a total of 14,006 m² of fences will be affected. Compensation is based on a combination of fence-types and values, and is estimated to be 50,098 USD.

On the Shehedi-Metema alignment, some 4967 m² will be affected, amounting to 5,736 USD.

In total, some 18,973 m² of fencing will be affected along the Ethiopian alignment, estimated at a total cost USD 55,834.

Summary of Total Affected Assets

TABLE 42. SUMMARY OF AFFECTED ASSETS ON OPTION C

Items for Compensation	Quantity	Total Cost of Compensation (USD)
Compensation for loss of dwellings	283	258,577
Residential fences	18,973 m²	55,834
Permanent crop loss (tower bases)		6,855
Crop loss from temporary loss of land	kg per ha	139,378
Permanent loss of Eucalyptus trees	per tree	610,413
Permanent loss of Fruit and other trees	per tree	65,857
Temporary loss of Trees (chat)	per tree	97,008
Sub-total		**1,233,922**
Contingency (10%)		123,392
Grand Total*		**1,357,314**

Summary of Affected Assets by Route Section

TABLE 43. BAHIR DAR-GONDER (AZEZO)

Items for Compensation	Quantity	Total Cost of Compensation (USD)
Compensation for residential dwellings + 10% mobilization fee	221	190,490 19,049
Permanent crop loss (tower bases)		3,115
Crop loss from temporary loss of land	318 ha	86,076
Permanent loss of Eucalyptus and other trees	41 566	544,057
Temporary loss of trees (chat)	16,798	97,008
Sub-total		**939,795**
Contingency (10%)		93,979
Total		**1,033,774**

TABLE 44. GONDER (AZEZO) - SHEHEDI

Items for Compensation	Quantity	Single Circuit Line (EEPCo) Total Cost of Compensation in USD	Upgrading to Double Circuit Line (ENTRO) Total Cost of Compensation in USD*
Compensation for Residential Dwellings + 10% mobilization fee	46	36,740 3,674	3,674
Compensation for fences	14,006m²	50,098	5,009
Permanent crop loss (tower bases)		2,910	
Compensation for crop loss from temporary loss of land	184 ha	53,302	53,302
Compensation for permanent loss of Eucalyptus and other trees	9,517	134,285	
Sub total		**281,009**	**61,985**
Contingency (10%)		28,100	6198
Total		**309,109**	**68,183**

*EEPCo will be responsible for the primary costs of the construction of a single circuit line between Gonder (Azezo) and Shehedi. ENTRO will be responsible for the upgrading of this portion of the alignment to a double-curcuit line. Although houses and fences will be permanently damaged by the construction of the single-circuit line, a nominal 10% of original compensation costs has been added for contingencies on residential properties during time of construction of the double circuit line.

TABLE 45. SHEHEDI - METEMA

Items for Compensation	Quantity	Total cost (USD)
Compensation for residential dwellings + 10% mobilization fee	16	7,840 784
Residential fences	4,967 m²	5,736
Permanent crop loss (tower bases)		830
Loss of Public facility (water well)	1	1,600
Sub-total		**16,790**
Contingency (10%)		1,679
Total		**18,469**

13.2 Option B1

Based on the engineering survey carried out by EEPCo in 2002, the total number of PAPs affected by the construction work was estimated at 275. All of the 275 PAPs will permanently lose their residential houses and/or businesses due to the construction of the transmission line.

The Consultant has estimated that 340 properties will be affected by the project, of which 235 are thatched grass roofs, 101 CIS roofs and 2 grinding mills, 1 kebele office, and 1 prison. The following table shows the average estimated replacement cost for each type of building in the Project area.

TABLE 46. REPLACEMENT COST FOR AFFECTED HOUSES

No	Type of House	Number of Affected Houses	Unit cost in USD	Total Cost in USD
1	Thatched roof houses	235	350	82,250
2	Houses constructed with wood and mud and covered with CIS	101	1620	163,620
3	House for Grinding mill	2	5,000	10,000
4	Kebele administration office	1	6,000	6,000
5	Prison	1	30,000	30,000
	Total cost			**291,870**

Among the 77 sample households surveyed by the Consultant, it was revealed that 29 PAPs preferred to have cash only compensation and 48 preferred a combination of land-to-land and cash compensation.

Compensation for Businesses

Compensation for businesses will be estimated on the daily or monthly income of the PAPs. The average income of PAPs could only be obtained from by interviewing PAPs about their income level and sources. However, most PAPs were unable to supply the Consultant with their income rates as most do not keep regular records. Some were reluctant to disclose their income for tax or other reasons.

About 30% of those affected by the project are small businesses such as grinding or flour mills, kiosks and local eating and drinking places. Based on discussions with local owners of businesses, the estimated loss of annual income for each type of business and the estimated compensation cost is shown in the following table:

TABLE 47. ESTIMATED LOSS OF ANNUAL INCOME OF AFFECTED BUSINESSES

Type of Affected Business	No. of PAPs	Estimated Annual Net Income in Ethiopian Birr	Estimated Annual Net Income in USD	Total Compensation Estimate in USD
Grinding Mill	2	12 000	1387.23	2,774
Kiosk/Shop	27	6 000	693.64	18,728
Local drinking and eating places	52	3 600	416.20	21,642
Total	**81**	**21,600**	**2,497.07**	**43,144**

Compensation for Temporary and Permanent Loss of Farmland

The overall area of land required during the construction of works would be for tower construction, work camps, storage facilities and access roads. Land requirements and their location has to be planned well in advance of construction so as to allow farmers to make necessary preparations such as harvesting crops, cutting down tress, etc.

Permanent loss of farmland and crops: The permanent loss of farm land by the construction of towers will be 49m^2 (7m x 7m) within the RoW. The total estimated number of towers in the project area will be 732 towers, which amounts to two towers per km.

Of the 732 towers, some 70% will be located on farmland. Aproximately 519 towers will directly affect farmlands.

Farmland that will be lost permanently to towers (519) will be 49m^2 x 519 = 25,431m^2 (2.5 hectares). Since this loss will be a permanent one the compensation value for permanent loss of land will be calculated for ten times the average annual income of a household from permanently affected farmland.

Compensation estimated by crop type: Teff and maize are the two major crops grown in the area. It is assumed that 50% of the affected farmland is used to grow teff and 50% for maize.

The permanent loss for the two crops is calculated by taking the average annual income and multiplying them x 10. The average market price for teff in the locality is about 2.5 Birr (or about 0.29USD) per kg, and the average price for maize is Birr 1.75 (or about 0.2023USD) per kg.

If we assume that 50% of the affected area is used for teff and the average yield from one hectare is about 800kg, the total estimated loss from 1.25 hectares of land will be about 1000kg. Its total annual cost is estimated 1000kg x 0.29 USD = 2900 USD. For maize, the production per hectare is about 1800kg, and the income loss from 1.25 hectares will be 1800kg x 1.25 = 2250kg. The cost estimate will be 2250 x 0.2023USD = 455.17.

Loss of Coffee Trees and Compensation for loss of income

The permanent loss of coffee plantations to Project RoW will be about 2.5 hectares. The average production from one hectare of coffee is 400 kg for a period of 15 consecutive years. A coffee tree becomes productive in its fourth year of planting. A single coffee tree can survive up to the maximum of 26 years (FDRE Ministry of Agriculture Guidelines). From a given parent tree a total of 4 kg of coffee will be collected per annum. Based on the current market price, 1 kg of coffee can be sold for 15 Birr.

Since the loss of income from the above coffee trees is permanent, its compensation cost is calculated by multiplying 10 times the annual average income preceding the expropriation of the land, which is according to Proclamation No.4005/2005, Part 3; Article 8. (See Appendix 3)

The estimated loss of coffee from the 2.5 hectares of land for one year is about 1000 kg (2.5 x 400kg = 1000kg) and its cost is estimated to be 1000kg x 15 Birr = 15,000 Birr or 1,750 USD. Its total compensation value will be about 17,500 USD.

TABLE 48. COMPENSATION FOR COFFEE, TEFF AND MAIZE FROM PERMANENT LAND LOSS

Crop Type	Hectares Affected	Yield (kg /ha)	Total yield (kg)	Price / kg in USD	Annual Income in USD	Compensation Ten Times Annual Income in USD
Coffee	2.50	400	1000	1.75	1,750.00	17,500
Maize	1.25	1800	2250	0.2023	455.17	45,517
Teff	1.25	800	1000	0.29	2900.00	29,000
Total						**92,017**

Temporary loss of farmland used for crops: The temporary loss of farmland for the RoW or the corridor line is estimated by multiplying the total kilometer distance of the transmission line with the width of the RoW. The size of the RoW for one kilometer is calculated to be 40m x 1000m = 40,000m (or 4 hectares).

The estimated km distance temporarily affected by the transmission line is about 260 km or 71% of the total distance. Hence, the affected size of farmland by the construction of the transmission line is about 260 x 4 = 1040 hectares. Out of the above 1040 hectares of temporarily affected farmland, it is estimated that 50% is used to grow teff and the other 50% is used to grow maize.

Compensation estimate for teff and maize: The average yield for teff from one hectare of land is about 800kg. The market price for one kg of teff is about 2.5 Birr or about 0.29USD. The total estimated annual loss of teff from 520 hectares of land will be 520 x 800kg = 416,000 kg.

The average yield for maize from one hectare of land is about 1800kg. The market price for one kg of maize is about 1.75 Birr or about 0.2023USD. The total estimated annual loss from 520 hectares of land will be about. The price of per kg of maize is estimated to be 0.2023USD. Hence, the total estimated annual loss from 520 hectares of maize is about 520 x 1800kg = 936,000 kg.

TABLE 49. COMPENSATION FOR CROP LOSS FROM TEMPORARY LOSS OF FARMLAND

Crop Type	Hectares Affected	kg/hectare	Total Yield	Price / kg USD	Annual Income USD
Maize	520	1800	936,000	0.2023	189,352
Teff	520	800	416,000	2.9000	1,206,400
Total					**1,395,752**

Compensation for Eucalyptus Trees

A number of Eucalyptus trees may be affected in 200 km stretch between Debre Markos to Chagni. Based on field survey, it is assumed that 50% of the area along the route is planted to Eucalyptus trees; each household having on average 55 Eucalyptus trees that will be affected by the project.

The Environmental Monitoring Unit of Ethiopian Electric and Power Cooperation (EEPCo) has made an assessment of eucalyptus production yields based on prices from different parts of the country to prepare the procedure for compensation of a Eucalyptus tree.

Based on the above survey we use the price for small tree 0.73 USD and 2.46 USD for matured trees. Thus assuming that 50% of the existing trees to be small and 50% matured trees. The total compensation will be calculated as follows:

In the project area, 50% (or 137) of the PAPs have an average of 55 trees. The total number of affected trees will therefore be 137 x 55 = 7535. The total estimated compensation cost will be ({(7535 x 50% x 0.73)} x 10 + {(7535 x 50% x 2.46)} x 10 = USD 120,183.

Summary of Affected Assets

The following table summarizes compensation cost estimates for all affected assets on Option B1.

TABLE 50. SUMMARY OF COMPENSATION FOR AFFECTED ASSETS ON OPTION B1

Item for compensation	Unit	Quantity	Total cost for compensation in USD
Houses (tukul and CIS)	No.	339	291,870.00
Loss of business (relocation, social and psychological trauma)	No	55	43,145.00
Permanent loss of farmland used to grow teff	Ha	1.25	29,000.00
Permanent loss of farmland used to grow maize	Ha	1.25	45,517.00
Permanent loss of farmland used to grow coffee	Ha	2.5	17,500.00
Temporary loss of land used to grow teff	Ha	520	1,206,400.00
Temporary loss of land used to grow maize	Ha	520	189,352.00
Loss of Eucalyptus trees	No.	7535	120,183.00
Sub Total			**1,942,967.00**
Contingency 10%			194,296.00
Grand Total			**2,137,263.00**

13.3 Matrix of Project Impacts for Options C and B: Ethiopia

The following table summarizes permanent and temporary impacts incurred on Options C and B, as well as number of residential households to be lost to the Project.

TABLE 51. MATRIX OF PROJECT IMPACTS: OPTIONS C AND B

Route Option	Line Length (km)	No. of Towers	No. of Permanently Affected Hectares (tower bases)	No of Temporarily Affected Hectares (RoW)	No. of Buildings within Residential Households to be Permanently Relocated	Main area of impact
C	296	603	2.95	532.0	283	Farmlands Houses Eucalytpus trees
B1	366	732	3.50	1024.8	336	Houses Eucalyptus trees Forests
Ttoal	**662**	**1,335**	**6.45**	**1,556.8**	**619**	

TABLE 52. TOTAL COMPENSATION COSTS FOR OPTION C

Route Option	Route Section	Total
Option C	1. Bahir Dar-Gonder (Azezo)	1,033,774
	2. Gonder (Azezo) –Shehedi	68,183*
	3. Shehedi-Metema	18,469
Total		**1,120,426**

* Compensation estimate for adding a second circuit to the Gonder-Shehedi section single circuit line currently under construction by EEPCO.

TABLE 53. TOTAL COMPENSATION COSTS FOR OPTION B

Route Option	Total (USD)
Option B1	2,137,263

13.4 Option A: Ethiopia and Sudan

Description of Affected Assets

Given that there is insufficient survey data for the proposed transmission line for Option A, it is not possible to produce an exact inventory of assets damaged or lost by the Project. A rapid site survey of the route reveals that the transmission line will run through scattered farmlands (predominantly maize, teff, sorghum, coffee and sesame), woodlots (Eucalyptus and black wattle), plantations (Eucalyptus, Black wattle) and communal grazing land. From Assosa, the environment changes into lowland bamboo savannah and deciduous woodland, and inhabitation becomes progressively scattered. In this section of the route, bamboo has a high economic value and is particularly threatened.

A small number of dwellings may be affected by the line – e.g. in the vicinity of the substation at Gedo, and on the periphery of some towns and villages. However, taking the EEPCo single-circuit line (which is in the process of being installed) as the alignment for the proposed transmission line, most towns and villages will be bypassed so as to minimize impact to dwellings, social services and commercial enterprises.

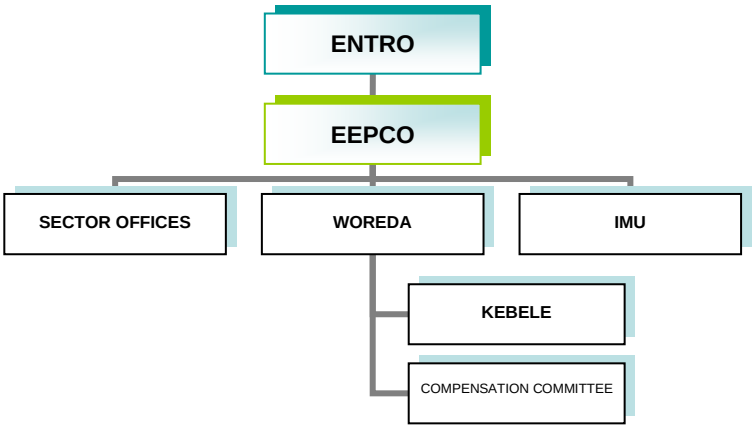
The table below provides an estimate of assets lost by the project for both Ethiopia and Sudan based on a rapid site survey and available vegetation maps.

TABLE 54. SUMMARY OF ASSETS AFFECTED BY THE PROJECT FOR OPTION A

Assets lost	Percentage of Total Route	Total km of Affected Asset from Total of 614 km	Estimate of Affected Area (ha)	
			Permanent	Temporary
Farmlands (teff, maize, sorghum, sesame)	40	245.6	6.02	982.4
Forests/plantations (Eucalyptus, black wattle, bamboo)	15	92.1	368.4	-
Economically valuable trees (mangoes, bananas, citrus, coffee)	5	30.7	122.8	-
Communal grazing land	20	122.8	Not compensated	Not compensated
Dwellings (tukuls + CIS) and social services	0.5	3.07	-	-
Commercial enterprises (kiosks, tea houses)	0.5	3.07	-	-
Indigenous forest	19	116.66	Not compensated	Not compensated
TOTAL	**100**	**614.00**	**-**	**-**

14 Description of Organizational Responsibilities

The Eastern Nile Technical Regional Office (ENTRO) has been vested with the overall responsibility for the coordination, planning and implementation of land acquisition and resettlement activities under the Project. The actual implementation of land acquisition and resettlement work will be carried out by EEPCo and NEC in Ethiopia and Sudan respectively.



Woreda and Municipality Level Compensation and Relocation Committee

The Compensation and Relocation Committee would be responsible for the planning, coordinating and monitoring of compensation and relocation activities. This committee would be responsible for:

- Establishing kebele level implementation committees
- Clarifying policies and operational guidelines of kebele compensation committees
- Coordinating and supervising implementation by kebele compensation committees as stipulated in federal and regional guidelines
- Ensuring that appropriate compensation procedures are followed
- Overseeing Project's requirements related to the social environment

The following organisational framework would apply:

Woreda Compensation (and Resettlement) Committee (Rural)

1. Woreda Administrator (Chairperson)
2. Woreda Rural Development Agency (Deputy Chairperson)
3. Woreda Capacity Building Department
4. Woreda Mobilization Office
5. Representative of EEPCo
6. Representative from local NGO or CBO

Municipality Compensation (and Resettlement) Committee (Urban)

1. Mayor or Town Administrator (Chairperson)
2. Town Engineer/Surveyor
3. Mobilization Officer
4. Capacity Building Department
5. Representative of EEPCo
6. Representative from local NGO or CBO

Local Kebele Compensation and Implementing Committee

The Local Kebele Compensation and Implementing Committees comprise representatives from kebele administration offices, PAPs and sector offices who have the following responsibilities:

- Establish standards for unit rates of affected assets and compensation estimates
- Revalidate inventories of PAPs and affected assets
- Reallocate land to permanently affected households
- Monitor the disbursement of funds
- Guide and monitor the implementation of relocation
- Coordinate activities between the various organizations involved in relocation
- Facilitate conflict resolution and addressing grievances
- Provide support and assistance to vulnerable groups

Kebele Compensation Committee (Rural)

1. Kebele Administrator (Chairperson)
2. Kebele Development Agent (Extension worker)
3. Representatives of PAPs
4. Elders from affected localities
5. Representative of EEPCo
6. Representative from local NGO or CBO

Kebele Compensation Committee (Urban)

1. Kebele Administrator (Chairperson)
2. Municipality Engineer
3. Representative of PAPs
4. Representative of EEPCo
5. Representative from local NGO or CBO

TABLE 55. LIST OF ORGANIZATIONS THAT CAN BE CONSULTED DURING IMPLEMENTATION PROCESS

No	Organizations	Roles and responsibilities
1	Electricity Authority (EEPCo)	Coordination (planning and implementation process); Budget allocation for project; Monitoring and Evaluation
2	Environmental Protection Authority (EPA)	Ensure that the Social and Environmental Policies and guidelines are followed up
3	Regional Government States	Provide Political and Administrative support for the implementation of the project
4	Zonal Administrations	Coordinate the different Woredas affected by the project; coordination of restoration methods for PAPs.
5	Woreda Administrations	Responsible for the implementation of the project activities, establish compensation committees at kebele level, ensure that PAPs are compensated as per the federal and regional guidelines.
6	Woreda Agricultural Office	Establish unit rate for crops and different types of trees.
7	Municipalities	Responsible for the implementation of Project activities in town sections; establish compensation committees at urban kebele level; ensure that PAPs are compensated as per federal and regional guidelines; awareness creation, grievance redress.
8	Kebele Administration (Rural and Urban)	Allocate land for the affected families; Establish kebele level compensation committee; Coordinate day to day activities of the compensation committee; Assist vulnerable PAPs, Facilitate land for land compensation

15 Implementation Schedule

A schedule for implementation of resettlement and compensation activities is included in Appendix 7. The schedule is tied to the implementation schedule for the Project. All compensation and resettlement for each component of the Project must be completed satisfactorily, income restoration measures in place and the construction area free of all encumbrances before commencement of civil works for that component.

The main objective in implementing this schedule is to ensure that compensation for land acquisition and lost assets is disbursed in time to enable affected households to construct dwellings and to restore livelihoods, and for affected public services to be fully reinstated prior to the commencement of the Project. A minimum of 3 months and a maximum of 5 months will be required.[1]

The programme also makes provision for a series of activities before commencement of construction to ensure the participation and consultation of PAPs, namely:

- The establishment of Compensation and Relocation committees;
- Dissemination of relocation information and details of land acquisition activities
- Negotiation between PAPs and the Compensation and Relocation representatives regarding acquisition boundaries and the type and measurement of structures and land parcels;
- Holding village meetings to decide upon the location of new house sites,
- Compensation arrangements and income restoration measures.

The timing of these activities is designed to allow the executing agency time to respond to practical and useful suggestions made by PAPs and to respond to, and resolve, grievances.

[1] Discussions with PAPs and local leaders indicate that should the necessary materials be available, a new house in a rural area will not take more than 3 months to build.

16 Description of Provisions for Redress and Grievances

In order to ensure that PAP grievances and complaints on any aspect of the land acquisition, compensation, and resettlement are addressed in a timely and satisfactory manner, and that all possible avenues are available to PAPs to air their grievances, a well defined grievance redress mechanism will be established by the Project.

16.1 Grievance Redress

In the initial instance, grievances will be dealt with by the infrastructure instituted by the Compensation and Relocation Committees (see Organizational Framework in Section 14).

These committees comprise:

- Local Authority Resettlement Sub-Committees
- Representative of Land Use and Land Administration Authority
- Local leaders in affected villages/local areas
- Representatives of PAPs
- Local NGOs and CBOs.

16.2 Grievance Redress Mechanism

Where disputes arise between principle parties and PAPs, the initially preferred means of settling grievances is by arbitration. Grievances will be initially addressed at the level of the Local Compensation and Implementing Committee. Should an agreement not be reached at this level, the complaint may be taken to the Local Authority level Compensation and Relocation Committee. If the complaint is not resolved at this level, the aggrieved party has the right to appeal to a court of law.

17 Framework for Monitoring and Evaluation

17.1 Internal Monitoring

It is the responsibility of the proponent to conduct regular internal monitoring of the resettlement performance of the operation. The monitoring should be a systematic evaluation of the activities of the operation in relation to the specified criteria of the condition of approval.

In Ethiopia, EEPCO will be responsible for implementing resettlement and compensation activities for the section of the Project from Bahir Dar to Metema (up to the Ethiopia/Sudanese border) and it will therefore be their responsibility to undertake regular internal monitoring of the process.

The objective of internal monitoring and supervision will be:

- To verify that the valuation of assets lost or damaged, and the provision of compensation, resettlement and other rehabilitation entitlements, has been carried out in accordance with the resettlement policies provided by the Ethiopian and Sudanese Governments and the World Bank;
- To oversee that the RAP is implemented as designed and approved;
- To verify that funds for implementation of the RAP are provided by the Project authorities in a timely manner and in amounts sufficient for their purposes, and that such funds are used in accordance with the provisions of the RAP.

17.1.1 Internal monitoring Indicators

The main indicators that will be monitored regularly:

- That the World Bank's entitlements are in accordance with the approved policy and that the assessment of compensation is carried out in accordance with agreed procedures
- Payment of compensation to the PAPs in the various categories is made in accordance with the level of compensation described in the RAP
- Public information and public consultation and grievance procedures are followed as described in the RAP
- Relocation and payment of subsistence and shifting allowances are made in a timely manner
- Restoration of affected public facilities and infrastructure are completed prior to construction

17.2 External Monitoring and Evaluation

The Consultant recommends that an independent monitoring unit (IMU) be established to evaluate implementation of compensation and resettlement.

The IMU shall be appointed to monitor the resettlement and compensation process and implementation of requirements to verify that compensation, resettlement and rehabilitation have been implemented in accordance with the agreed RAP. The IMU will also be involved in the complaints and grievance procedures to ensure concerns raised by PAPs are addressed.

More specifically, the IMU will carry out the following:

- review the results of the internal monitoring and review overall compliance with the RAP
- assess whether relocation objectives have been met especially with regard to housing, living standards, compensation levels, etc.

- assess general efficiency of relocation and formulate lessons for future guidance
- determine overall adequacy of entitlements to meet the objectives.

The Consultant recommends that ENTRO establishes an IMU that draws on personnel with resettlement and social development experience. The Consultant further recommends that relevant representatives from the World Bank and the implementing agencies, EEPCo (Environmental Monitoring Unit) and NEC, be included in this unit. Project Affected Persons should be represented through relevant NGOs. The objective of this unit will also be to provide a forum for skills-sharing and to develop institutional capacity.

It is important that the Unit is able to maintain a strong independent position and provide constructive feedback to the project to ensure the objectives are met. This could be facilited through inclusion of an expert from a highly regarded University (drawing on Departments of Sociology and Anthropology, Environmental Studies, Geography and related disciplines).

17.2.1 Outcome Indicators for Monitoring and Evaluation

Outcome indicators include the delivery of compensation and other mitigation to avoid economic and physical displacement caused by the Project.

A key objective of the RAP is that resettlement actions and mitigatory measures should lead to sustainable restoration or enhancement of affected people's pre-Project living standards and income levels. Outcome indicators measure whether compensation is paid and received, whether the affected populations were able to use compensation payment for investments that would give them sustained income.

Outcome indicators will include:

- Restoration of agricultural production and overall income levels
- Successfully negotiated land agreements
- Satisfaction with reinstatement activities
- Changes in community attitude towards the project
- Types of compensation payments for income generating investments

18 Recommendations

The World Bank Operational Policy for Resettlement encourages the avoidance of involuntary resettlement wherever feasible or to minimize it by exploring alternative project designs and sites. The following preliminary recommendations are put forward according to these Directives.

18.1 Summary of Study

This RAP study focused on three alternative power system interconnections between Ethiopia and Sudan. Methodologies applied to the respective route appraisals were determined by available cadastral surveys undertaken by the relevant Power Utilities (EEPCo in Ethiopia). Impact analyses ranged from 100% census and household survey (Bahir Dar-Metema, Option C), to general socio-economic overviews (Option A) that were drawn from route descriptions, aerial surveys and secondary literature.

From a Resettlement perspective, Option C (Bhir Dar-Gedaref) was found to be the preferred route. This is consistent with conclusions drawn by the ESIA, as well as the technical findings as outlined by the Feasibility Update (2005). Following workshops held with EEPCo, it has been agreed that consideration will be given to Options B and A for future power interconnections.

18.2 Preferred Option

It is the opinion of the Consultant that Option C is the preferable route for the following reasons:

- Option C is considered the most cost-effective of the three route options;
- Option C is located in regions of Ethiopia where there is scattered inhabitation and where there will be nominal impact on PAPs. A total of 283 households are estimated to require relocation within their same land or in the vicinity;
- No major resettlement will have to take place; households affected by the route will be shifted either to a different section of a property or within the vicinity, thus minimizing disruption to social and economic networks that are relied upon by families and individuals;
- Fewer female-headed (vulnerable) households will be affected on Option C than on the other routes;
- The route traverses through sparsely cultivated regions of Ethiopia. The total impact on farmlands or economically valuable trees is minimal relative to that of the other two routes;
- No social services will be disrupted. The Consultant recommends that the line be re-routed to avoid possible threat to any social services;
- Given the detailed socio-economic profiles presented in this report which explicitly profile the Project affected communities as severely under-serviced, it is evident that the provision of benefits to local communities by this Project needs to be considered as a priority:

  In Ethiopia, the transmission line will be linked to local electricity infrastructure that will provide separate, but complementary tangible Project benefits to PAPS;

- The line runs generally parallel to an all-weather road system;

- Given the above conditions, the transmission line will build upon a similar roads and local electricity infrastructure in Ethiopia, thus supporting the notion of an inclusive Project profile, built upon transboundary partnerships and exchange.

Recommendations with regard to Options B and A

Route Options B and A are more circuitous than Option C. For the majority of the Ethiopian section of Option B1, the line traverses through highly cultivated regions which are particularly reliant on Eucalyptus cultivation. These trees carry a particularly high economic value, and compensation for permanent removal of the trees will amount to an extremely high financial outlay for the Project (see compensation costs for Option B above). Permanent damage to households is also far higher than on Option C.

The Consultant is concerned by the lack of supporting infrastructure on Options B and A with respect to roads. The lack of all-weather roads on these routes will challenge both construction and future upkeep of the transmission line:

Option B in Ethiopia follows a good road system to Chagni, whereupon the roads deteriorate into dry-weather roads only. Although the road from Ghedo to Assosa in Ethiopia (Option A) is in the process of being upgraded (completion earmarked for 2008), its present state is unviable.

One of greatest concerns of the Consultant is how to achieve local support for Options B and A when no local Project benefits in the form of local electrification can be demonstrated. Discussion groups held with Sector offices and PAPs on the Ethiopian routes have indicated that communities will support the inter-State initiative as long as adequate financial compensation is provided. This is not the case in Sudan.

18.3 Mitigation Measures

The following mitigation procedures are recommended by the Consultant:

- Where feasible, to consider re-routing of the transmission line to avoid resettlement. This is of particular significance for homesteads located on subsistence farms where loss of land may not be compensated under a land-for-land agreement (e.g. Option C, Ethiopia). Where such re-routing may not be feasible, consideration should be given to shifting a homestead out of the transmission line RoW thus avoiding major resettlement;

- Where feasible, to consider re-routing of the transmission line to avoid impact to social services (schools, clinics) or cultural properties (water well). As the transmission line will, for the most part, pass through remote areas where the infrastructure for social services are at best fragile, the Project should consider all alternatives rather than jeopardize continuous access to schooling, health services and other amenities;

- To select the route Option where the construction of the transmission line may build upon existing infrastructure – i.e. road upgrading or the construction of a single electricity line - so that further impact by the Project to PAPs may be substantially minimized;

- The Consultant recommends that all major construction be undertaken during the dry season (i.e. November - June). This is a period when lands are not being cultivated and crops will thus not be affected by construction activities;

- The Consultant recommends that compensation for dwellings be based on the replacement cost of affected assets;

- The Consultant recommends that financial compensation be reinforced by education on financial management provided through the kebele local administrative structure;

- The Consultant recommends that special assistance and support be given to vulnerable groups such as female-, elderly or disabled-headed households;

- The Consultant recommends that provision be made for local tangible benefits to PAPs in the form of local electricity supply. This may be achieved through coordinating Project efforts with local the Electricity Authorities so that the transmission line may build upon an existing or proposed single-circuit infrastructure, as with the Gonder (Azezo)-Shehedi supply line on Option C.

- The Consultant strongly recommends that unskilled labour be drawn from local communities;

- The Consultant recommends that skills training be provided to PAPs so that employment opportunities for local villagers may be prioritized;

- The Consultant recommends that income generating opportunities for women be considered during Project construction in the form of food preparation and sale to work camps, as well as in the form of domestic service (cleaning, washing etc.);

- The Consultant recommends that training or other appropriate assistance be given to those PAPs who have lost their businesses so as to ensure that they are not permanently disadvantaged by the loss of their enterprises;

- The Consultant recommends that adequate health and safety guides be disseminated prior to Project construction, either in the form of posters or pamphlets to schools and social service centres, or, in places of high impact, (e.g. School in Ginti, Option C, Ethiopia) through a more interactive programme such as through lectures by personnel from the respective Electricity Authorities, local radio, or by way of teacher education. Of particular concern will be the effects of electro-magnetic radiation and the climbing of towers by children;

- In the event that farmlands are affected by the construction of access routes or work camps, the Consultant recommends that upon completion of construction, that this land be restored to its original state to enable the restoration of cultivation activities in the ensuing season;

- The Consultant recommends that health training be provided to immigrant skilled workers regarding communicable diseases (HIV/AIDs in particular) so as to mitigate against the spread of infections during the Project construction period;

- The Consultant recommends that work camps be positioned away from village sites in order to minimize the spread of communicable diseases and so that immigrant workers do not draw on village supplies (e.g. water, sanitation facilities, natural resources etc.).

- The Consultant recommends that ENTRO establishes an independent monitoring unit that draws on personnel with resettlement and social development experience. The Consultant further recommends that relevant representatives from the World Bank and the implementing agencies, EEPCo (Environmental Monitoring Unit) and NEC, be included in this unit. Project Affected Persons should be represented through relevant NGOs. The objective of this unit will also be to provide a forum for skills-sharing and to develop institutional capacity.

18.4 Poverty Alleviation

Ethiopia has one of the lowest levels of electricity generation per capita in the world. In Ethiopia, only 13% of the population has access to electricity (Ethiopia: Sustainable Development and Poverty Reduction Program, 2002). Electricity is thus essential to the development of agro-processing industries, commercial enterprises and irrigation facilities in the rural areas.

The Consultant believes that by providing local electricity to PAPs (either directly through the financing of local distribution lines, or indirectly, by reinvesting a proportion of the economic benefits of the Project into rural electrification), the Project will be enhancing overall poverty reduction and rural development efforts in the two affected countries.

Electricity supplied to rural towns would replace/reduce the consumption of woody biomass and petroleum products used for cooking, lighting, and motive power. It would support development in the agricultural sector (irrigation pumps, poultry, animal husbandry, preservation of products); in the commercial sector (shops, bars, and restaurants); to small and medium industries (flour mills, rural water supply installations, tanneries, and coffee processing plants), to the residential sector (lighting, heating, and cooking), to education (kindergarten, elementary schools, junior secondary schools, secondary schools and technical colleges), and to the health sector (pharmacies, clinics, health centers and hospitals). In brief, the Project would assist in the facilitation of economic growth in Project affected areas and create long-term employment opportunities for the poor, including women, thereby increasing income levels and reducing poverty.

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APPENDIX 1 : Maps of Project Affected Areas

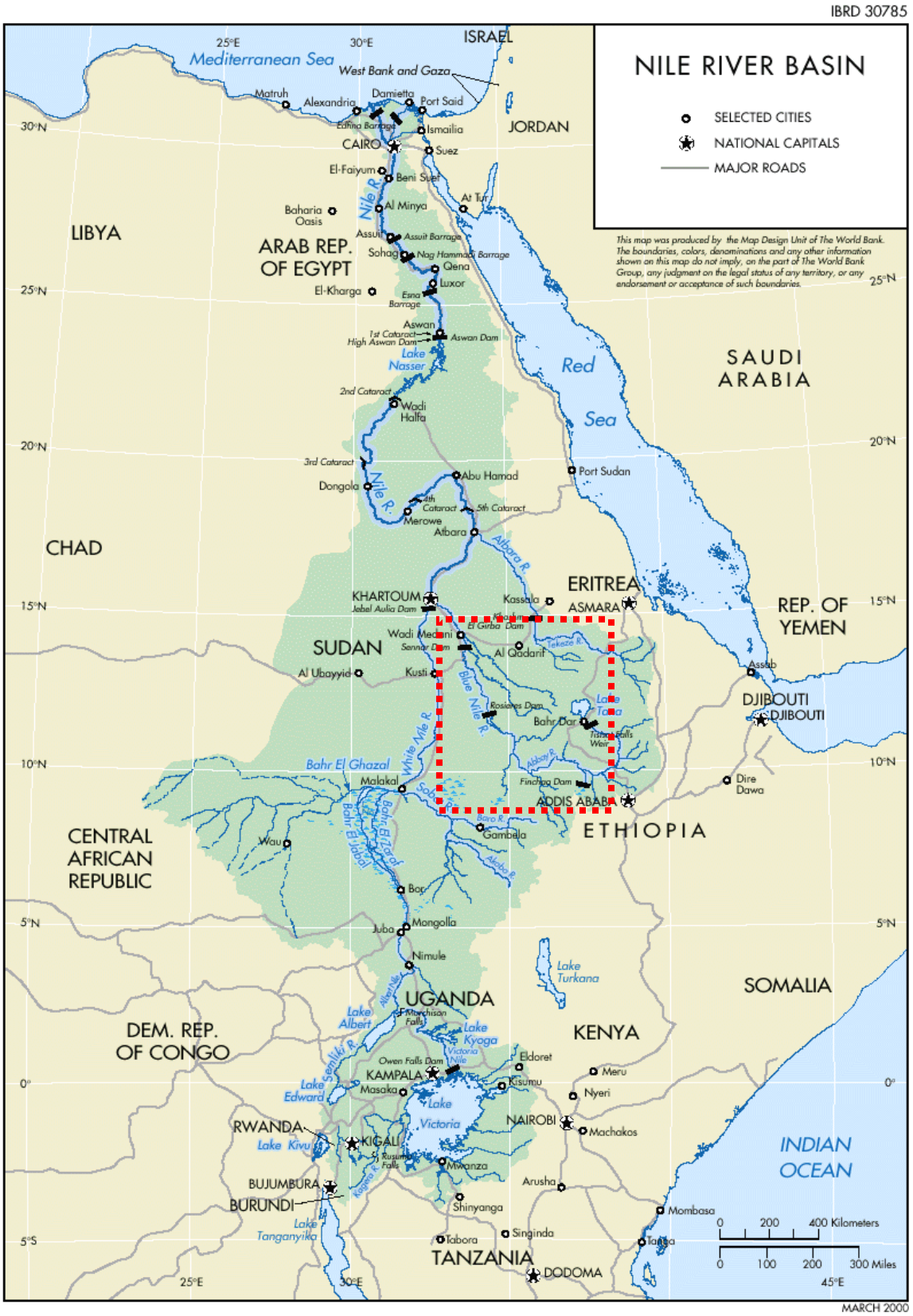

Figure 1. Regional Location of the Ethiopia-Sudan Power System Interconnection Project

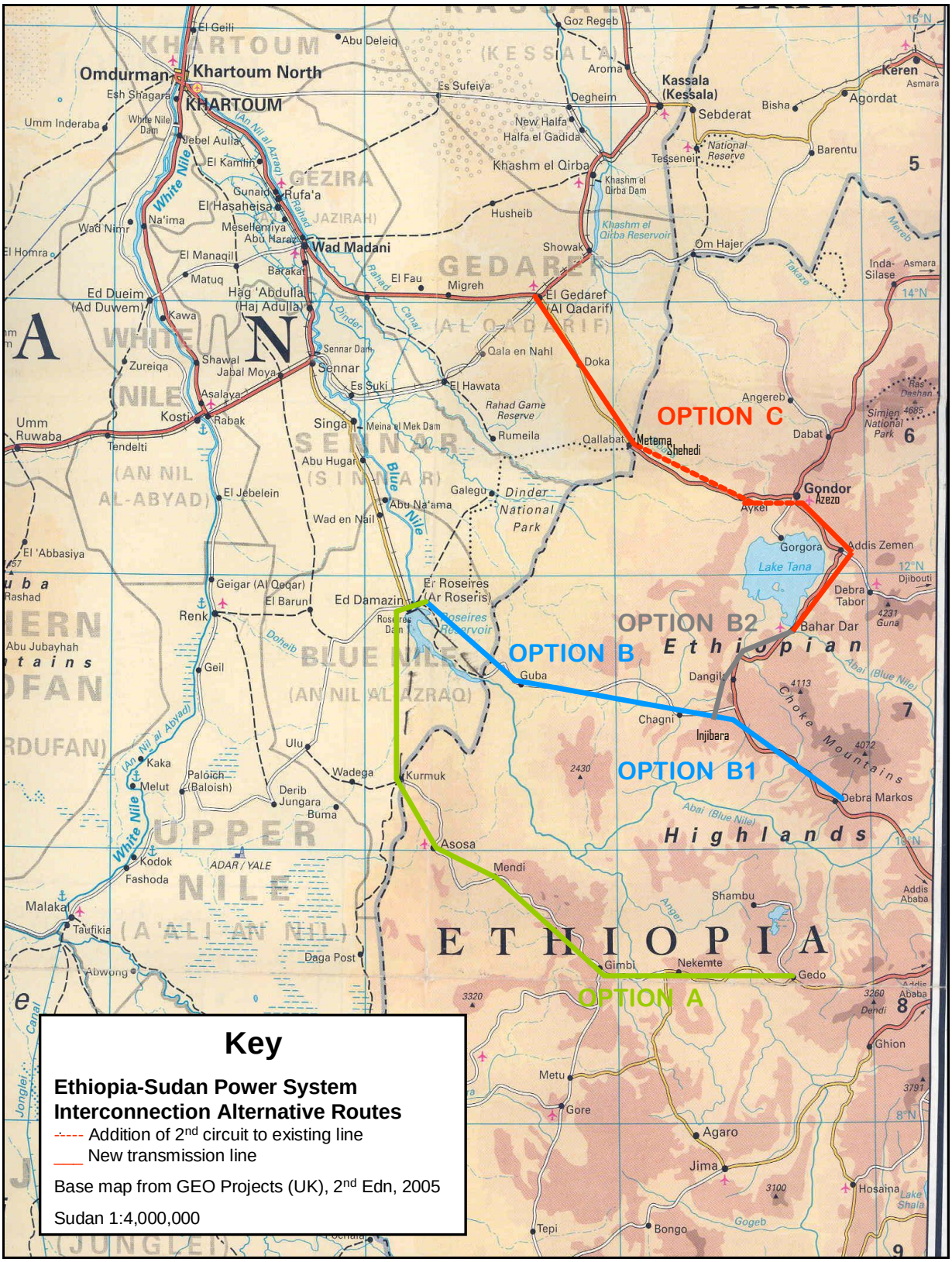

Figure 2. Location of proposed transmission line routes between Ethiopia and Sudan

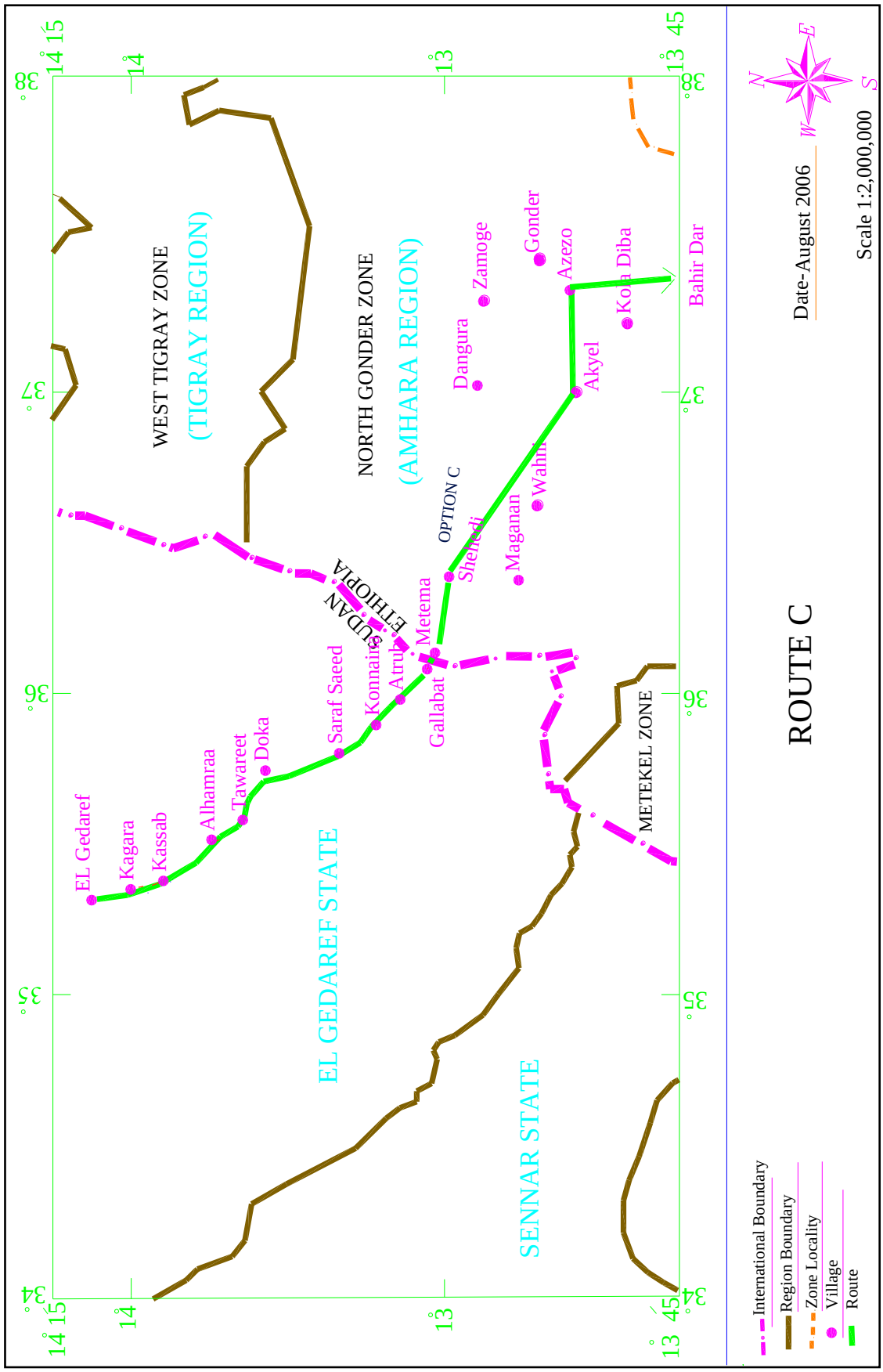

Figure 3. Route Option C)

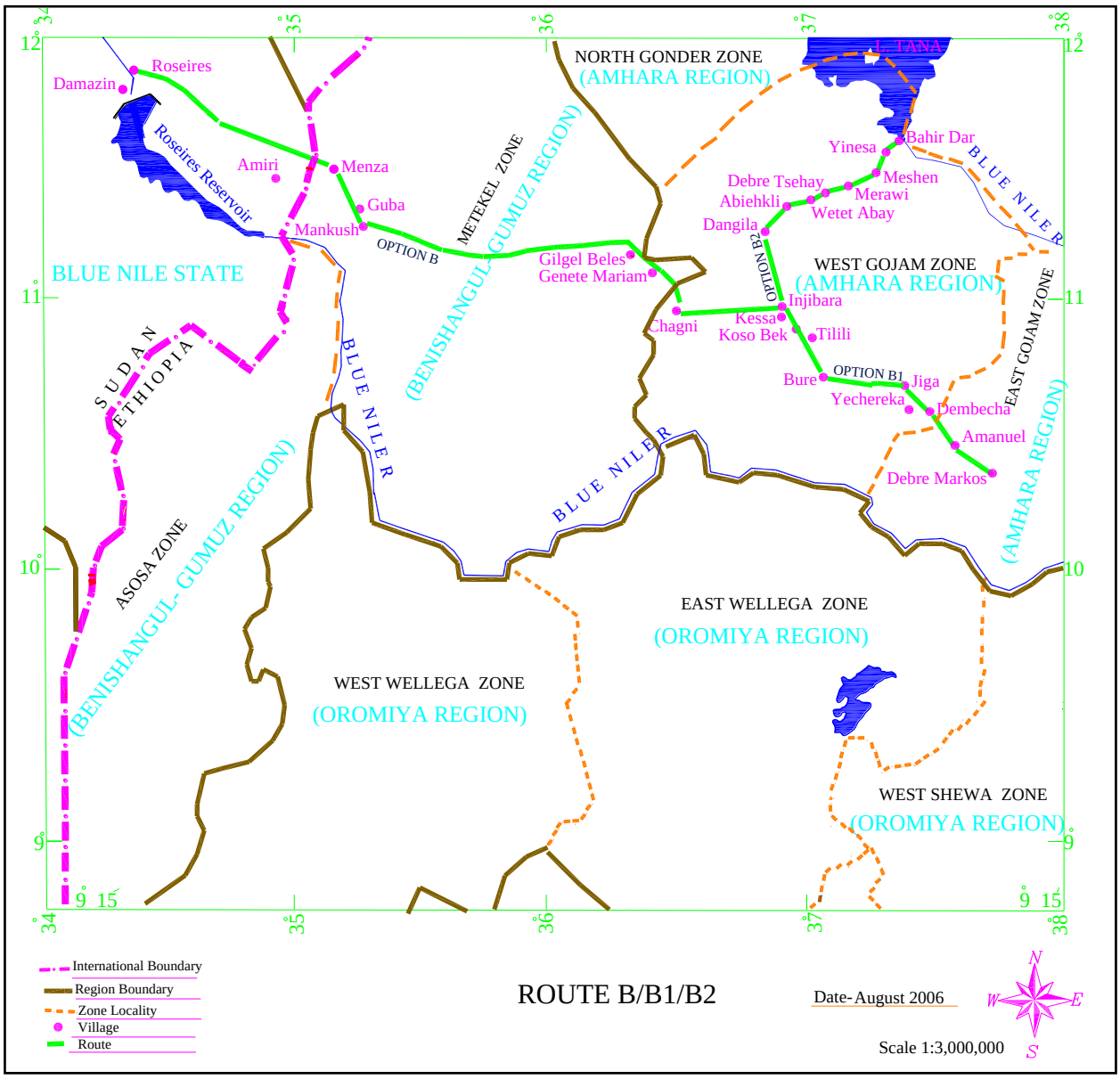

Figure 4. Route Option B1 and B2

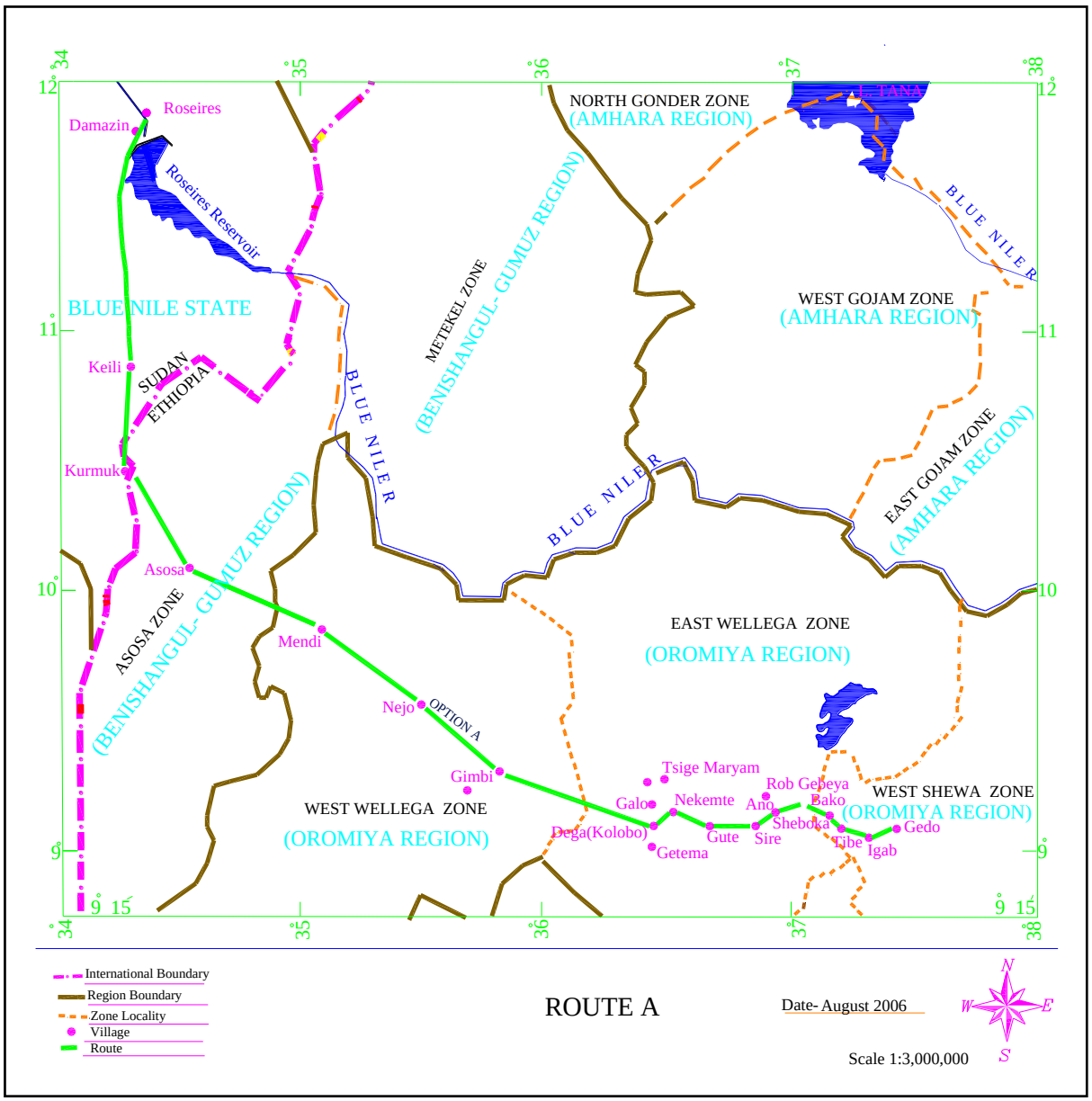

Figure 5. Route Option A

APPENDIX 2 : Photographs

Photo 1: Typical ‘tukul’ house with Eucalyptus woodlot, Option B.

Photo 2: Transport corridor provided by the road from Gonder to Metema, Option C

Photo 3: Gumuz shifting agriculturalists, Ethiopia-Sudan border, Option B.

Photo 4: Household survey, Option B (Ethiopia).

APPENDIX 3 : FDRE Government Proclamation: Expropriation of Landholdings for Public Purposes and Payment of Compensation No. 455/2005

Federal Negarit Gazeta of the Federal Democratic Republic of Ethiopia
11th Year No. 43. Addis Ababa July, 2005.

Proclamation no. 455/2005
A Proclamation to provide for the Expropriation of Land Holdings for Public Purposes and Payment of Compensation.

WHEREAS, the government needs to use land for development works it carries out for public services;

WHEREAS, urban centres of the country have, from time to time, been growing and the number of urban dwellers had been increasing and thereby lad redevelopment for the construction of dwellings houses, infrastructure, investments and other services has become necessary in accordance with their respective plans as well as preparation and provision of land for development works in rural areas has become necessary;

WHEREAS, it has become necessary to define the basic principles that have to be taken into consideration in determining compensation to a person whose landholding had been expropriated;

WHEREAS, it has become necessary to define organs that shall have the power to determine and the responsibility to pay the compensation;

WHEREAS, Article 51(5) of the Constitution empowers the Federal Government to enact laws regarding the utilization of land and it is deemed necessary to regulate in detail, based on the requirement of advance payment of compensation for private property expropriated for public purpose as provided for under Article 40(8) of the Constitution.

NOW THEREFORE, in accordance with Article 55(1) of the Constitution, it is hereby proclaimed as follows:

PART ONE: GENERAL

1. Short Title

This Proclamation may be cited as the "Expropriation of Landholdings for Public Purposes and Payment of Compensation no. 455/2005."

2. Definitions

In the Proclamation, unless the context requires otherwise:

1/ "compensation" means payment to be made in cash or in kind or in both to a person for his property situated on his expropriated landholding;
2/ "region" means any region referred to in Article 47 of the Constitution and includes Addis Ababa and Dire Dawa city administrations;
3/ "landholder" means an individual, government or private organization or any other organ which has legal personality and has lawful possession over the land to be expropriated and owns property situated thereon;

4/ “urban administration” means an organ to which urban administrative powers and duties have been given by law or delegated by the concerned government body to exercise such powers and duties;

5/ “public purpose” means the use of land defined as such by the decision of the appropriate body in conformity with urban structure plan or development plan in order to ensure the interest of the peoples to acquire direct or indirect benefits from the use of the land and to consolidate sustainable socio-economic development;

6/ “utility line” means water, sewage, electric or telephone line existing on or under a land to be expropriated for public purpose;

7/ “implementing agency” means a government agency or public enterprise undertaking or causing to be undertaken development works with its own force of through contractors.

PART TWO: EXPROPRIATION OF LANDHOLDING

3. Power to Expropriate Landholdings

1/ A Woreda or an urban administration shall, upon payment in advance of compensation in accordance with the Proclamation, have the power to expropriate rural or urban landholdings for public purpose where it believes that it should be useful for a better development project to be carried out by public entities, private investors, cooperative societies or other organs, or where such expropriation has been decided by the appropriate higher regional of federal government organ for the same purpose.

2/ Notwithstanding the provision of Sub-Article (1) of this Article, no land lease holding may be expropriated unless the lessee has failed to honor the obligations he assumed under the Lease Proclamation and Regulations of the land is required for development workd to be undertaken by government.

4. Notification of Expropriation Order

1/ Where a Woreda or an urban administration decides to expropriate a landholding in accordance with Article 3 of this Proclamation, it shall notify the landholder, in writing, indicating the time when the land has to be vacated and the amount of compensation to be paid.

2/ The period of notification to be given in accordance with Sub-Article (1) of this Article shall be determined by directives; provided however, that it may not, in any way, be less than 90 days.

3/ Any landholder who has been served with an expropriation order in accordance with Sub-Article (1) of this Article, shall hand over the land to the Woreda or urban administration within 90 days from the date of payment or compensation or, if he refuses to receive the payment, from the date of deposit of the compensation in a blocked bank account in the name of the Woreda or urban administration as may be appropriate.

4/ Notwithstanding Sub-Article (3) of this Article, where there is no crop, perennial crop or other property or the expropriated land the holder shall hand over the land to the Woreda or urban administration within 30 days from the date of receipt of the expropriation order.

5/ Where a landholder who has been served with an expropriation order refuses to hand over the land within the period specified in Sub-Article (3) of (4) of this Article, the Woreda or urban administration may use police force to take over the land.

5. Responsibilities of the Implementing Agency

The implementing agency shall have responsibilities to:

1/ prepare detail data pertaining to the land needed for its works and send same, at least one year before the commencement of the works, to the organ empowered to expropriate land in accordance with this Proclamation and obtain permission from then; and

2/ pay compensation in accordance with this Proclamation to landholders whose holdings have been expropriated.

6. Procedures for Removal of Utility Lines

1/ Where land over and under which utility lines, owned by a federal or regional government office or public enterprise, pass is to be expropriated, the body repairing the land shall submit, in writing, its request to the owner by indicating the exact location of the lines to be removed.

2/ The body which has received a request under Sub-Article (1) of this Article shall, within 30 days from receipts of such request, determine a fair compensation required to replace the lines to be removed and send details of its valuation to the requesting body.

3/ The body which requested the removal of utility lines, shall pay compensation to the owner within 30 days from the date of receipt of the valuation under Sub-Article (2) of this Article. The owner shall also remove the utility lines and vacate the land within 60 days from the date of receipt of compensation.

PART THREE: DETERMINATION OF COMPENSATION

7. Basis and Amount of Compensation

1/ A Landholder whose holding has been expropriated shall be entitled to payment of compensation for his property situated on the land and for permanent improvements he made to such land.

2/ The amount of compensation for property situated on the expropriated land shall be determined on the basis of replacement cost of the property.

3/ Where the compensation referred to under Sub-Article (2) of this Article is payable to an urban dweller, it may not, in any way, be less that the current cost of constructing a single room low cost house in accordance with the standard set by the concerned region.

4/ Compensation for permanent improvement to land shall be equal to the value of capital and labour expended on the land.

5/The cost of removal, transportation and erection shall be paid as compensation for a property that could be relocated and continue its service as before.

6/ Valuation formula for determining compensation for various properties and detail prescriptions applicable there to shall be provided by the regulations.

8. Displacement Compensation

1/ A rural landholder whose landholding has been permanently expropriated shall, in addition to the compensation payable under Article 7 of this Proclamation, be paid displacement compensation which shall be equivalent to ten times the average annual income be secured during the five years preceding the expropriated land.

2/ A rural landholder or holders of common land whose landholding had been provisionally expropriated shall, in addition to the compensation payable under Article 7 of this Proclamation, be paid until repossession of the land, compensation for lost income based on the average annual income secured during the five years preceding the expropriation of the land; provided, however, that such payment shall not exceed the amount of compensation payable under Sub-Article (1) of this Article.

3/ Where the Woreda administration confirms that a substitute land which can be easily ploughed and generate comparable income is available for the land holder, the compensation to be paid under Sub-Article (1) and (2) of this Article shall only be equivalent to the average annual income secured during the five years preceding the expropriation of the land.

4/ An urban landholder whose landholding had been expropriated under this Proclamation shall:

a/ be provided with a plot of urban land, the size of which shall be determined by the urban administration, to be used for the construction of a dwelling house, and

b/ be paid a displacement compensation equivalent to the estimated annual rent of the demolished dwelling house to be allowed to reside, force of charge, for on years in a comparable dwelling house owned by the urban administration.

5/ Where the house demolished is a business house, the provisions of Sub-Article (4) of this Article shall, mutatis mutandis apply.

6/ When an urban land lease holding is expropriated prior to its expiry date, the lease holder shall, in addition to the compensation referred to under Article 7 of this proclamation and this Article, be provided with a similar plat of land to use it for the remaining lease period., the leaseholder shall also be allowed to use the new plot of land for a longer period if its rent is less than the former land, of the holding did not want take the Land he can take the remaining rent payment.

7/ The detail prescriptions applicable to compensation payable under the Article shall be provided for by regulations.

9. Valuation of Property

1/ The valuation of property situated on land to be expropriated shall be carried out by certified private or public institutions or individual consultants on the basis of valuation formula adopted at the national level.

2/ Until such time that the ministry of Federal Affairs, in consultation with the appropriate federal and regional government organs, ascertains the creation of the required capacity to make valuation of this property as specified under Sub-Article (1) of this Article, such valuation shall be carried out by committees to be established in accordance with Article (10) of this Proclamation and owners of utility lines in accordance with Article (6) of this Proclamation.

10. Property Valuation Committees

1/ Where the land to be expropriated is located in a rural area, the property situated thereon shall be valued by a committee of not more than five experts having the relevant qualification and to be designated by the Woreda administration.

2/ Where the land to be expropriated is located in an urban centre, the property situated thereon shall be valued by the committee of experts having the relevant qualification and to be designated by the urban administration.

3/ Where the property situated on a land to be expropriated requires specialized knowledge and experience, it shall be valued by a separate committee of experts to be designated by the Woreda or the urban administration.

4/ The working procedures for the committees established in accordance with this Article shall be determined by directives.

11. Complaints and Appeals in Relation to Compensation

1/ In rural areas and in an urban centre where an administrative organ to hear grievances related to urban landholding is not yet established, a complain relating to the amount of compensation shall be submitted to the regular court having jurisdiction.

2/ Where the holder of an expropriated urban landholding is dissatisfied with the amount of compensation, he may lodge his complaints to the administrative organ established by the urban administration to hear grievances related to urban landholdings.

3/ The organ referred to in Sub-Article (2) of this Article shall examine the complaint and give its decision within such short period as specified by directives issued by the region and communicate its decision to the parties in writing.

4/ A party dissatisfied with a decision rendered in accordance with Sun-Article (1) and (3) of this Article may appeal, as may be appropriate, to the regular appellate court or municipal appellate court within 30 days form the date of decision, the decision of the court shall be final.

5/ The period specified in Sub-Article (4) of this Article for submitting an appeal shall not include the time taken to provide the appellant with a copy of the decision.

6/ An appeal submitted, pursuant to Sub-Article (4) of this Article, by any landholder served with an expropriation order may be admitted only if it is accompanied with a document that proofs the hand over the land to the urban or Woreda administration.

7/ The execution of an expropriation order may not be delayed due to a complaint regarding the amount of compensation.

PART FOUR: MISCELLANEOUS PROVISIONS

12. Powers and Duties of the Ministry of Federal Affairs

With respect t the implementation of this Proclamation, the Ministry of Federal Affairs shall have the power and duties to:

1/ Follow up and ensure that the provisions of this Proclamation are complied with in all regions;
2/ Give technical and capacity building support to regions so that they will be able to implement this Proclamation;
3/ Prepare, in collaboration with other relevant organs of the Federal Government, national valuation formula for the determination of compensation payable under this Proclamation and submit same to the Council of Ministers for approval.

13. Responsibilities of Woreda and Urban Administrations

With respect to the implementation of this Proclamation Woreda and urban administrations shall have responsibilities and duties to:

1/ Pay or cause the payment of compensation to holders of expropriated land in accordance with this Proclamation, and provide them with rehabilitation support to the extent possible.
2/ Maintain data of properties removed from expropriated landholdings. Particulars and conditions of maintaining such data shall be prescribed by directives.

14. Power to Issue Regulations and Directives

1/ The Council of Ministers may issue regulations necessary for the proper implementation of the Proclamation.
2/ Regions may issue directives necessary for the proper implementation fo tis Proclamation and regulations issued hereunder.

15. Repelled and Inapplicable Laws.

1/ The Appropriation of Land for Government Works and Payment of Compensation for Property Proclamation No 410/2004 is hereby repealed.
2/ No law, regulation, directive or practice shall, in so far as it is inconsistent with this Proclamation, be applicable with respect to matters provided for by this Proclamation,

16. Effective Date

The Proclamation shall enter into force on the 15th day of July, 2005.

APPENDIX 4 : Valuation Method of Assets for Compensation

Affected Farmland

In determining the replacement cost for affected farmlands, the following considerations are taken into account:

- Measure the actual size of the affected area/plot and count all assets/ property found on the same plot.
- Calculate the unit rate/cost for the affected assets/property according to the current market price
- Calculate average production/income that is obtained from the land and reach a consensus with PAPs on the amount of the average production or income.
- Calculate annual income in relation to annual bank interest rates in order to assess income from savings
- 10% compensation value could be calculated for the psychological and social inconveniences created due to the relocation. This is calculated by taking the amount of production on the measured plot of land and by summing up the annual income obtained from the above plot.
- Total compensation cost is derived by (or it is the sum of) calculating annual income, the compensation value affected property, and social and psychological inconveniencies.

Construction works on farmlands have to be carried out according to the environmental regulations and procedures of the country. However, these activities have to be planned in a way not to displace the local population and to minimize impact on farmlands and settlements.

Affected Houses

In determining the replacement cost for affected houses, the following considerations are taken into account:

- The current construction cost for replacement (with no allowance for deprecation);
- Depreciation of assets and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the Project deducted from the valuation of affected assets;
- Houses that are partially affected are assumed to be entirely affected and compensated accordingly;
- The compensation rate is estimated on the basis of the type of the house affected. The cost of each house that will be replaced is estimated on the basis of specifications and bill of quantities agreed upon by PAPs;
- Families who will lose their houses to the Project will receive full replacement cost plus the compensation value for all unforeseen costs. The compensation value is the family's expenses and loss in income in making the transition is duly recognized and accounted and compensated for to cover the loss of established business, and for any social disruptions and inconveniencies. With this compensation value, the affected people might be able to cover any expenses associated with their relocation/re-housing including access to social and public services.

Crop Loss

Compensation for crop loss is made on the assumption that only the land affected on the tower sites will result in permanent loss. The remainder of the land will be affected for a maximum period of two years only while construction of the tower sites is underway. Compensation will be based on the productivity of the land and on current market prices of the crops.

Based on the availability of the farm land on the project area where PAPs reside, permanent cultivated land loss will be compensated on a land-for-land basis. If there is shortage of land, however (as is generally the case in Ethiopia), loss of cultivated land will be compensated in cash at a rate equivalent to 10 times of Average Annual Output Value (AAOV) of previous three years. Individuals or entities legally using affected plots will be compensated in terms of a land-for-land mechanism through redistribution of land within the village territory.

Loss of Eucalyptus and Other Economically Valuable Trees

The main type of plantation in the Ethiopian Project area is Eucalyptus. The following valuation is based on a compensation method developed by the Environmental Monitoring Unit of Ethiopian Electric and Power Cooperation (EPPCo). Their assessment of eucalyptus production and the market prices are based on averages collected from different Eucalyptus plantation regions in the country.

Eucalytpus yields and prices are based on age, height and diameter of trees, and their functions (e.g. house construction, electricity poles, fuel wood etc).

Trees are classesified into three major classes:

1. Small
2. Medium and
3. Large (Pole)

Prices are 0.7 USD, 2.4 USD and 31.8 USD for small, medium and large trees respectively.

Compensation is valued at quivalent to ten X average annual income.

The Table below indicates the estimated values of compensation for a single tree.

Compensation Equivalent			
	Price USD	**Annual Income Loss***	**Compensation Equivalent of 10 Years (USD)**
Small	0.7	0.73	7.3
Medium	2.4	2.46	24.6
Large (Pole)	31.8	32.38	323.8

* Transportation costsnare 0.03 USD, 0.06 USD and 0.58 USD for small, medium and large trees respectively.

Other types of trees are compensated for one cutting only, as it is assumed that they will be taken to market only once they have reached maturity, at which stage they have no regenerative capacity.

Damage to Cultural Properties and Community-owned Facilities

Cultural significance is a concept in estimating the value of a site. It includes aesthetic, historic, scientific (research), social or economic value and the concept of amenity value. Sites which are likely to be significant are those that help our understanding of the past, or enrich the present, and that will be of value to future generations. Significance assessment is the basis for determining any action to protect cultural sites and is part of a site management plan.

APPENDIX 5 : Record of Consultation

Consultation with Affected People

As part of social assessment, extensive public consultations were carried out in the study area. A range of concerned stakeholders, including representatives of the local communities, local authorities and representatives of different sector bureaus and offices were consulted. The objective of the consultations was to:

- Disseminate information among potentially affected communities about the intended Project;
- Identify attitudes of communities towards the Project;
- Identify the degree of community participation in the Project;
- Identify anticipated Project impacts on the socio-cultural life of communities; and
- Identify stakeholders and their role in Project activities.

Although, the surveys were conducted during the rainy seasons of 2005 and 2006 – this is a period when roads are impassable, and when farmers migrate for seasonal work - consultations were held with those stakeholders who were available.

Consultation with Community Representatives

Project consultants facilitated the group discussions focusing on the following issues:

- Briefing about the Project;
- Assessment of the attitudes of the local communities towards the proposed Project;
- Anticipated positive and adverse impacts of the Project pertaining to the socio-economic life of the community;
- Mechanisms to avoid and/or mitigate anticipated adverse impacts of the proposed Project;
- Compensation preferences.

Most communities were aware of the Project and appreciated the social and economic benefits likely to be accrued from it. However, the most important issue for which all project affected people indicated concern were:

- Fair compensation for affected assets
- Minimization of land acquisition
- Ensuring adequate land allocation and livelihood restoration.

Consultation with Local Administration

All the local administrators consulted reflected the interest of their respective communities in the Project. Consultations were held with

- Metema Woreda Adminstration Office
- Chilga Woreda Administration Office
- Woreta Adminstration Office
- Bardarzuria Woreda Office
- Maksegit Woreda Office

All the local administrations have indicated that they would play an active role during the construction and operation period of the Project. This would include:

- Co-ordination of the local communities to participate as required;
- Involvement in the land acquisition process to facilitate the implementation of appropriate mitigation measures;

- Provision of land for the Contractor's camps;
- Dissemination of information to the local community;
- Represent their constituencies in Grievances Committees;
- Assist in the disbursal of compensation funds.

Record of Consultations

Date	Name	Title/Organization	Contact Details
ETHIOPIA, Addis Ababa			
3 August 2005	Ato Mekuria Tafesse	Executive Director, ENTRO	Tel: (251 1) 2515660 Fax: (251 1) 2515681
3 August 2005	Dr Ahmed Khalid Eldaw	Senior Regional Projects Coordinator, ENTRO	Tel: (251 1) 461130 Fax: (251 1) 459407
3 August 2005	Dr Salah Eldin El Shazali	Regional Social Development Officer, ENTRO	Tel: (251 1) 461130 Fax: (251 1) 459407
3 August 2005	Dr Fatma Moustafa	PCU Manager, ENTRO	Tel: (251 1) 461130 Fax: (251 1) 459407
12 August 2005	Ato Tesfaye Batu	Project Manager, Ethiopia-Sudan Power System Interconnection Project	EEPCO Mob: (09) 254408 Tel: (01) 517169 Fax: (01) 517198
17 August 2005	Ato Solomon Giorgis	Manager, Survey Division	EEPCO Mobile: 09/229810
18 August 2005	Ato Yusuf Haji Ali	Power Engineer	World Bank Tel: (01) 176089/627700 Fax: (01) 627717
18 August 2005	Ato Negede Lewi	Engineer Transport Sector	World Bank Tel: (01) 176089 Fax: (01) 627717
19 August 2005	Ato Solomon Desta	Project Manager Gonder (Azezo)-Metema Transmission Line	EEPCO, Mobile: 09/678276 Office: 526522
19 August 2005	Ato Girma Mekunia	Division Manager, Power System Design Division	EEPCO
19 August 2005	Ato Fekade	Agent	ENERGO INVEST
Gonder (Azezo)			
21 August 2005	Ato Mamush Walelegn	Soil Investigation Technician	EEPCO
21 August 2005	Ato Worku Taffere	Supervisor	ENERGO INVEST (Contractor)
23 August 2005	Ato Sisay Yehuala	Environmental Protection and Land Administration and Use Expert	Gonder (Azezo) Woreda Agricultural Bureau Mobile: 09-442135
Chilga			
23 August 2005	Ato Engida Work Gezahagu	Information Officer	Chilga Woreda Information Bureau Tel: 08-330054
Bahir Dar		Regional Office for Agriculture and Rural Development Department	
23 August 2005	Ato Belayneh Ayele	Environmental Expert	Mobile: 09-442135
23 August 2005	Ato Tekul Damte	Ecologist	Tel: 08-207235
23 August 2005	Ato Hunegaw Sharew	Legal Advisor	
23 August 2005	Ato Getahun Alemneh Bidar Metema	Land Administration Expert Kebele	Tel: 08-207234
22 August 2005	Ato Nega Abdukadir	Representative	
Debre Markos			
25 August 2005	Ato Zezalem Kassa	Operator Debre Markos Substation	EEPCO Tel: (08) 7111138
ETHIOPIA			

4 Oct 2005	Ato Reynold Duncan	Lead Power Engineer, Finance, Private Sector & Infrastructure Group Middle East & North Africa Region World Bank	(+1 202) 458 4609
Benishangul-Gumuz			
5 Oct 2005	Mekonnen Kifle	Gedo Substation Technician, EEPCO	
7 Oct 2005	Ato Kinde Haile	Rural Development Advisor to the President of Benishangul-Gumuz Regional State	
7 Oct 2005	Ato Berhanu Garno	Head, Bureau of Finance & Economic Development, Benishangul-Gumuz Regional State	(+251 11) 275 0211
7 Oct 2005	Ato Mesfin Kebede	Manager, EPA, Benishangul-Gumuz Regional State	(+251 57) 775 1292
7 Oct 2005	Ato Teshale Tesfaye	Team Leader, Food Security & Resettlement, Benishangul-Gumuz Regional State	
8 Oct 2005	Ato Kabachi Yousif	Administrator, Kurmuk Woreda	
9 Oct 2005	Ato Asfau Kena'a	Ethiopian Evangelical Church, Mendi	(+251 57) 776 0821
10 Oct 2005	Ato Kelil Shifa	Administrator, East Wollega Zone, Nekemte	(+251 57) 661 1157
10 Oct 2005	Ato Assfau Guye	Expert for Forest Protection & Development, Guto Wayu Woreda, Nekemte	
18 Oct 2005	Ato Girma Demissie	Manager, Environmental Monitoring Unit, EEPCO	(+251 11) 155 6605
18 Oct 2005	Ato Yohannes Yoseph	Forester, EMU EEPCO	(+251 11) 156 2050
18 Oct 2005	Ato Kidane Gizaw	Environmentalist, EMU EEPCO	(+251 11) 156 2050
Bahir Dar-Gonder (Azezo)			
8 February 2006	Ato Tesfaye Batu	Project Coordinator	
10 February 2006	Ato Tsfaye G/ Meskel	EEPCO Senior Surveyor	
10 February 2006	Ato Minase Merawi	EEPCO Senior Surveyor	
10 February 2006	Ato Aynalem Bekele	EEPCO Senior Surveyor	
10 February 2006	Ato Girma Mekuria	EEPCO Power System Design Division	
13 February 2006	Ato Admasu Mola Fetene	Bahir Dar EPA, ASIA Department Head	
13 February 2006	Ato Workineh Andarge	Bahir Dar EPA,Environmental and EIA Team Leader	
13 February 2006	Ato Bayeh Tiruneh	Bahir Dar , EPA Land Use Department Head	
13 February 2006	Ato Gashaw Zewdu	Bairdar Zone, Development and agriculture office	
13 February 2006	Getachew Nigatu	Bahir Dar Zone, Rural Development and Agriculture office	
13 February 2006	Ato Workineh Mulu	Bahir Dar Zone, Rural Development and Agriculture office	
14 February 2006	Ato Tsfaye Kebede	South Gonder (Azezo), Woreta, Planning and Finance Department	

14 February 2006	Ato Osman Issa	South Gonder (Azezo), Woreta, Planning and Finance Department
15 February 2006	Ato Birhanu Temesgen	South Gonder (Azezo), Maksegnit woreda Rural Development and Agriculture
15 February 2006	Ato Merkeb Eshete	South Gonder (Azezo), Maksegnit woreda Rural Development and Agriculture
15 February 2006	Ato Getnet Abe	South Gonder (Azezo) Health Bureau
15 February 2006	Ato Aye Zerihun Etsub	South Gonder (Azezo), Rural Development and Agriculture
15 February 2006	W/T Askale Girmaye	South Gonder (Azezo), Rural Development and Agriculture Bureau
15 February 2006	Ato Dareskedar	North Gonder (Azezo), Libokemkem woreda, Rural Development and Agriculture
15 February 2006	Ato Fisiya Fikadu	North Gonder (Azezo), Libo Kemkem woreda Health Bureau

APPENDIX 6 : Letters from Woreda Offices, Ethiopia

15/10/98

የኢትዮጵያ ሱዳን የመብራት ኃይል የመዘርጋት ኘሮጀክትን በተመለከተ፡ በፎገራ ወረዳ የተደረገ የስብሰባ ቃለ-ጉባኤ

የስብሰባው አጀንዳ፡-

1. ኘሮጀክቱ በሚያደርሰው ተፅዕኖ ላይ /ጥቅምና ጉዳት/
2. በኘሮጀክቱ ምክንያት የእርሻ ቦታና የመኖሪያ ቤት እንዲሁም የግል ጥቅም በሚነካባቸው ግለሰቦች የካሣ አከፋፈል ወረዳው ያለው ልምድ
3. በኘሮጀክቱ ምክንያት በሚጎዱ ሰዎች ሊደርስ የሚችለውን የካሣ መጠን አወሳሰን አከፋፈልና አዲት
4. በኘሮጀክቱ ምክንያት የሚፈርስ መፈናቀል ካለ ወረዳው ሊያስተናግድ የሚችልበት አቅም ካለ፤

የውይይቱ ቦታ፡- ፎገራ ወረዳ አስተዳደር
የውይይቱ ቀን : 15/10/98
በውይይቱ ወቅት የነበሩ፡-

* ከወረዳው መስተዳደር 1. አቶ ክብረት መ/ሐመድ ም/አስተዳዳሪ ----------
2. አቶ ጀንበር ጓዴ አስ/ፀ/ጉ/ኃላፊ ----------
3. አቶ ላቀው መሠለ አስ/ጽ/ቤት ኃላፊ ----------

* ከአማካሪው ድርጅት አቶ አብዱላኒ መሐመድ

ከላይ በተጠቀሱት አጀንዳዎች ላይ ሰፊ ውይይት የተደረገ መሆኑንና ከዚህ በታች የተገለፁት ጉዳዩች ላይ ስምምነት ተደርሷል።

1. ኘሮጀክቱ በሚያልፍባቸው ቦታዎች የተወሠነ አሉታዊ ተፅዕኖ የሚያሳድር ነገር ለያዮም የሚችል ቢሆንም የሚያስገኘው ጥቅም የሚበልጥ በመሆኑ፤
2. የእርሻ ቦታ የሚነካባቸውን በተመለከተ የኘሮጀክቱ ሥራ በሚጀመርበት ጊዜ ወረዳው የካሣ ኮሚቴ በማቋቋምና የአካባቢውን ህ/ሰብ በማሣተፉ ያለውን ልምድ በማካተት ለመሥራት ስምምነት ላይ ተደርሷል።
3. ኘሮጀክቱ በሚነካቸው የግለሰብ ሃብቶች የካሣ ቀመርና መጠን በተመለከተ ወደፊት ከሚቋቋመው ኮሚቴ ጋር እንደሚሠራና አንድ የአሠራር ደንብ እንደሚኖረው በማመን፤
4. በወረዳው በኘሮጀክቱ ምክንያት ሊደርስ የሚችል መፈናቀል ስለማይኖር ሆኖም ግን የቦታ ሽግሽግ ለሚያጋጥማቸው ሰዎች አስፈላጊውን እገዛና ትብብር እንደሚያደርግ ስምምነት ተደርሷል።

ቀን 15/10/98

የኢትዮጵያ ሱዳን የመብራት ኃይል የመዘርጋት ፕሮጀክትን በተመለከተ የተደረገ
የስብሠባ ቃለ ጉባዔ

- የወይይቱ ቦታ - የጎንደር ዙሪያ ወዳ አስተዳዳር ጽ/ቤት
- ውይይቱ የተደረገበት ቀን- በ15/10/98 ዓ/ም

በውይይቱ ወቅት የነበሩ ተሰብሣቢዎች

1. አቶ አዳነ አዱኛ - - - - - - - - የጎ/ዙ/ወረዳ ም/አስተዳዳሪ
2. .. ደረሰ ያለው - - - - - - - - .. .. ወባስ ጽ/ቤት ኃላፊ
3. .. ደባሱ ባይለየኝ- - - - - - - - .. .. ገንዘብና ኘላን ጽ/ቤት ኃላፊ

ከአማካሪው ድርጅት - አቶ አብድላሂ መሃመድ ሆነን ተሰብስበናል

የስብሠባው አጀንዳ

1. ፕሮጀክቱ በሚያደረሰው የአካባቢ ተፅእኖ ላይ /ጉዳትና ጥቅም/ በተመለከተ
2. የእርሻ ቦታና የመኖሪያ ቤት በሚነካባቸው ግለሰቦች የካሣ አከፋፈል የወረዳ ልምድ
3. በፕሮጀክቱ የሚጎዱ ሰዎች ሊደርስ የሚችለውን የካሣ መጠን አወሣሰንና አከፋፈል ሂደትን በተመለከተ
4. በፕሮጀክቱ ምክንያት የሚደርስ መፈናቀል ካለ ከወረዳው ሊያስተናግድ የሚችለበት አቅም ካለ ከዚህ በላይ በቅደም ተከተል በተዘረዘሩት አጀንዳዎች ላይ በተሰበሣቢዎች በኩል ሰፊ ውይይት ከተደረገ በኃላ ከዚህ በታች በተገለፁ ጉዳዩች ላይ ስምምነት ተደርሷል

1. ፕሮጀክቱ የሚያደርሰውን ጉዳት በተመለተ በወረዳው የሚደርሰው ጉዳት አለመኖሩን /የሌለ/ከመሆኑም በላይ ጥቅሙ ግን የሚበልጥ መሆኑን ተረጋግጧል
2. የእርሻ ቦታ የማነካባቸውን አርሶ አደሮች በተመለከተ ፕሮጀክቱ ሥራውን በሚጀምርበት ጊዜ ወረዳው የካሣ ኮሚቴ በማቋቋምና የአካባቢውን ንዋሪ ህብረተሰብ እንዲሣተፍ በማድረግ ያለውን ተሞክሮ /ልምድ/ በማካተት ለመሥራት ስምምነት ላይ ተደርሷል፡፡
3. የካሣ መጠንና ቀመርን በተመለከተ ወደፊት ከሚቋቋመው የኮሚቴ አባል ጋር በመሆን ሥራው እንደሚሠራና አንድ የአሠራር ደንብ ሊኖረው እንደሚችል በመተማመን
4. ወረዳው በፕሮጀክቱ ምክንያት ሊደርስ የሚችል መፈናቀል ስለማይኖርና ሊኖርም ስለማይችል ነገር ግን አንድ አንድ የቦታ ሽግሽግ ለሚያጋጥማቸው ግለሰቦች አስፈላጊውን እገዛና ትብብር ሁሉ እንደሚደረግ ስምምነት ላይ በመድረስ ስብሠባው ተፈፅሞል

1. ____________ የወረዳው ም/አስተዳዳሪ
2. ____________ .. ወባስ ጽ/ቤት ኃላፊ
3. ____________ .. ገንዘብና ኘላን ጽ/ቤት ኃላፊ
4. ____________ ከአማካሪው ድርጅት

በአማራ ብሔራዊ ክልላዊ መንግሥት
በምዕራብ ጎጃም ...
የባሕር ዳር ዙሪያ ወረዳ መስተዳድር
ምክር ቤት

ቁጥር [illegible]
ቀን 15/10/98

ለኢትዬ - ሱዳን ትራንስሚሽን ኢንተር ኮኔክሽን ኘሮጀክት

ከባህርዳር ሰብስቴሽን ተነስቶ ወደ ሱዳን ለሚሄደው የሐይድሮ ኤሌክትሪክ ፓወር ኬብል መዘርጋት ስራ የኘሮጀክት አማካሪ የሆነው SMEC የወረዳውን አስተዳደር አስተያየት እንዲሰጥበት በቀን 16/10/2006 እ.ኤ.አ ተገልጾልናል ።በዚህም መሠረት የኬብሉ መዘርጋት

1/ በአካባቢው ኅብረተሰብ በአጭር ወይም በረጅም ጊዜ የ24 ሰዓት የሐይድሮ ኤሌክትሪክ ተጠቃሚ የመሆን እድል ሊያገኝ ከመቻሉ በተጨማሪ urbanization ስለሚስፋፋ ስራ የገበያ እድል ሊፈጠር ይችላል የሚል እምነት አለን።

2/ የወረዳችን የካሣ አከፋፈል ልምድን በተመለከተ ከአሁን በፊት የተለያዩ መንግሥታዊና መንግሥታዊ ያልሆኑ ድርጅቶች በወረዳችን በርካታ ስራዎች በሚሰሩበት ወቅት ለአርሶ አደሮች ግምት ወይ ካሣ ሲከፍሉ ቆይተዋል ይህም አከፋፈል የሚወሰነው አንደኛ በ1992 ዓ.ም. በወጣው የመሬት አስተዳደር እና አካባቢ ጥበቃ አዋጅ መሠረት ሲሆን ይህም የራሱ የሆነ የአከፋፈል ስታንደርድ ያለው ነው ሁለተኛው የካሣ አከፋፈል ግምት ደግሞ ተጐጂውን ግለሰብ እና ድርጅቱን በመግባባት የሚያደርጉት የካሣ አከፋፈል ነው ስለዚህ በእነዚህ የአከፋፈል ሂደቶች እስከአሁን ያጋጠመ ችግር የለም ።

3/ ኬብሉ በሚዘረጋ ጊዜ ተፈናቃዬች ቢኖሩ ወረዳው ግለሰቦችን ማሸጋሸግ ይችላል ማለትም የእርሻ መሬት አቀማመጡ የተበታተነ ስለሆነ መስመሩ የሚያልፍበትን ቦታ ለእርሻ መጠቀሚያ በማድረግ መኖሪያቸውን ወደ ሌላው የእርሻ ቦታ ማሸጋሸግ ይቻላል።

ስለዚህ መስመሩ ቢዘረጋ ወረዳችን ከላይ የተገለጹትን እድሎች ተጠቅሞ ሁኔታዎችን ማመቻቸት የሚችል መሆኑን እንገልፃለን።//

ከሠላምታ ጋር

ፀሐይ ተፈራ እንዳለው
የፅ/ቤት ኃላፊ

የኢትዮጵያ ሱዳን የመብራት ኃይል የመዘርጋት ፕሮጀክትን በተመለከተ በጭልጋ ወረዳ የተደረገ ስብሰባ ቃለ ጉባኤ

የስብሰባው አጀንዳ፣

1. ፕሮጀክቱ በሚያደርሰው የአካባቢ ተፅዕኖ ላይ/ጉዳትና ጥቅም፣
2. የእርሻ ቦታና የመኖሪያ ቤት በሚነሱባቸው ግለሰቦች የካሣ አከፋፈል የወረዳ ልምድ
3. በፕሮጀክቱ በሚጎዱ ሰዎች ሊደርስ የሚችለውን የካሣ መጠን አወሳሰን አከፋፈል ሂደት
4. በፕሮጀክቱ ምክንያት የሚደርስ መፈናቀል ካለ ወረዳው ሊያስተናግድ የሚችልበት አቅም ካለ።

የውይይቱ ቦታ ጭልጋ ወረዳ አስተዳደር
የውይይቱ ቀን፡- 01/02/1998

በውይይቱ ወቅት የነበሩ፡-
ከወረዳው መስተዳድር፣

አቶ ሞላሁን መኳንንት ዋና አስተዳዳሪ
" እንግዳወርቅ ገዛኸኝ ማስታወቂያ ጽ/ቤት ኃላፊ
" አበበ ተፈራ ግብርና/ጽ/ቤት ኃላፊ

ከአማካሪው ድርጅት አቶ አብደላሂ መሐመድ

ከላይ በተጠቀሱ አጀንዳዎች ላይ ሰፊ ውይይት የተደረገ መሆኑንና ከዚህ በታች የተገለጹት ጉዳዮች ላይ ስምምነት ተደርሷል።

1. ፕሮጀክቱ የሚያደርሰው ጉዳትን በተመለከተ ወረዳው የሚያደርሰው ጉዳት የለለ መሆኑንና ጥቅሙ የሚበልጥ መሆኑን አረጋግጧል።
2. የእርሻ ቦታ የሚነሱባቸውን በተመለከተ ፕሮጀክቱ ሥራ በሚጀምርበት ጊዜ ወረዳው የካሣ ክፍያ በማቀናጀትና የአካባቢውን ሕብረተሰብ በማሳተፍ ያለውን ልምድ በማካተት ለመሥራት ስምምነት ላይ ተደርሷል።
3. የካሣ መጠንና ቀመር በተመለከተ ወደፊት ከሚቋቋመው ኮሚቴ ጋር እንደሚሰራና አንድ የአሠራር ደንብ እንደሚኖረው
4. ወረዳው በፕሮጀክቱ ግንባታ ምክንያት ሊደርስ የሚችል ጊዜያዊ የሰብል ጉዳት/የአንድ አመት ሰብል/ ሊኖር አስፈላጊውን የካሣ ግምት ለመስጠት ከሚቋቋመው የካሣ ኮሚቴ ጋር በመስራት እገዛ እንደሚሰጥ ስምምነት ላይ ተደርሷል።

በኢትዮጵያ [illegible] ሪፐብሊክ
በአማራ ብሔራዊ ክልላዊ መንግሥት
የመተማ ወረዳ አስተዳደር ጽ/ቤት

ቁጥር [illegible] 1920-98
ቀን 25-2-98

ለኢትዮጵያ ኤሌክትሪክ ኃይል ኮርፖሬሽን
አዲስ አበባ

ጉዳዩ፡- በመተማ ወረዳ ስለሚተከለው የኤሌክትሪክ ምሰሶ ማሳወቅ ይመለከታል!

ከላይ በርዕሱ እንደተጠቀሰው በመተማ ወረዳ በድርጅታችሁ አማካኝነት ስለሚተከለው የኤሌክትሪክ ምሰሶ በተመለከተ የተዘጋጀውን 1 ገጽ ቃለ ጉባኤ በዚህ ሸኚ ደብዳቤ አማካኝነት የላክን መሆኑን እናሳስባለን።

ከሰላምታ ጋር

[illegible]

[illegible]

የኢትዮጵያ ሱዳን የመብራት ኃይል የመዘርጋት ፕሮጀክትን በተመለከተ በመተማ ወረዳ የተደረገ ስብሰባ ቃለ ጉባኤ

የስብሰባው አጀንዳ፦

1. ፕሮጀክቱ በሚያደርሰው የአካባቢ ተፅዕኖ ላይ (ጉዳትና ጥቅም)
2. የእርሻ ቦታና የመኖሪያ ቤት በሚነካባቸው ግለሰቦች የካሣ አከፋፈል የወረዳ ልምድ
3. በፕሮጀክቱ በሚነኩ ሰዎች ሊደርስ የሚችለውን የካሳ መጠን አወሳሰንና አከፋፈል ሂደት
4. በፕሮጀክቱ ምክንያት የሚደርስ መፈናቀል ካለ ወረዳው ሊያስተናግድ የሚችልበት አቅም ካለ፡፡

የውይይቱ ቦታ፦ መተማ ወረዳ አስተዳደር

የውይይቱ ቀን፦ 30/01/1998

በውይይቱ ወቅት የነበሩ፦

ከወረዳው መስተዳድር፣ አቶ መብራቱ ደጉ ወረዳ ም/አስተዳዳሪ

አቶ [illegible]

አቶ [illegible]

ከአማካሪው ድርጅት፣ አቶ አብደላሂ መሐመድ

ከላይ በተጠቀሱ አጀንዳዎች ላይ ሰፊ ውይይት የተደረገ መሆኑንና ከዚህ በታች የተገለጹት ጉዳዮች ላይ ስምምነት ተደርሷል፡፡

1. ፕሮጀክቱ የሚያደርሰው ጉዳትን በተመለከተ ወረዳው የሚያደርሰው ጉዳት የሌለ መሆኑንና ጥቅሙ የሚበልጥ መሆኑን አረጋግጧል፡፡
2. የእርሻ ቦታ የሚነካባቸውን በተመለከተ ፕሮጀክቱ ሥራ በሚጀምርበት ጊዜ ወረዳው የካሣ ኮሚቴ በማቋቋምና የአካባቢውን ሕብረተሰብ በማሳተፍ ያለውን ልምድ በማካተት ለመሥራት ስምምነት ላይ ተደርሷል፡፡
3. የካሣ መጠንና ቁመር በተመለከተ ወደፊት ከሚቋቋመው ኮሚቴ ጋር እንደሚሰራና አገሪ የፌዴራል ደንብ እንደሚኖረው
4. ወረዳው በፕሮጀክቱ ምክንያት ሊደርስ የሚችል መፈናቀል ስለማይኖር ካለ ግን የቦታ ሽግሽግ ለሚያጋጥማቸው ሰዎች አስፈላጊውን እገዛና ትብብር እንደሚያደርግ ስምምነት ላይ ተደርሷል፡፡

Translation of Letters

1. Administration: Fogera Woreda Administration

Date: June 24, 2006

Confirmation of Cooperation by the community during the Project

Participants: 1. Ato Kibret Mohammed: V/ Administrator
2. Ato Jenber Gade: Security Desk Head
3. Ato Lakew Messele: Administration Office Head
4. Abdulahi Momammed (SMEC International)

Agenda:

1. Project impacts
2. Experience of the woreda regarding compensation on involuntary displacement
3. Woreda norms on compensation of assets
4. The capacity of the woreda to assist displacement

Minutes of Meeting:

1. Regarding the impact of the Project, the woreda believes that the positive impact is higher than the negative impacts;
2. The woreda confirms that any impact on the farm land the woreda will cooperate to provide the necessary assistance. The woreda will establish a compensation committee that will consist of Project-affected people;
3. The woreda will work out compensation rates with the committee according to a particular procedure.
4. The woreda administration believes that there will not be any resettlement due to the Project, but will assist any impact on farm land damage.

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2. Administration: Gonder (Azezo) Zuria Administration

Date: June 23, 2006

Confirmation of Cooperation by the Community during the Project

Participants: 1. Ato Adane Adugna Vice/ Administrator
2. Ato Deres Yalew Youth and Culture Desk Head
3. Ato Debasu Bayilegn Finance and planning Head
4. Abdulahi Momammed (SMEC International)

Agenda:

1. Project impacts
2. Woreda policies re. compensation payment and involuntary displacement
3. Woreda standards re. rates for different assets
4. The capacity of the woreda to provide assistance for displacement

Minutes of meeting:

After having the brief discussion of the above-mentioned issues, the woreda offers the following suggestions:

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1. Regarding the impact of the Project, the woreda believes that the positive impact is higher than the negative impacts;
2. The woreda confirms that it will assist with any impact on the farm lands by establishing a compensation committee consisting of Project affected people;
3. The compensation committee will develop appropriate procedures regarding rates of compensation;
4. The woreda administration believes that no resettlement will result from the Project, but will offer assistance with any impact on farm land damage.

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3. Administration: Western Gojam (Bahir Dar, Zuria Woreda)

Date: June 23, 2006

Confirmation of Cooperation by the Community during the Project

SMEC International has requested our cooperation during the Power System Interconnection Project. We are asked about our attitude towards both negative and positive impacts of the Project, and our attitudes towards compensation.

In this regard:

1. We believe that the construction of the project will provide opportunities for local electricity supply, which will enhance urbanization and the expansion of market opportunities;
2. Regarding preferred compensation methods: the woreda is experienced in the disbursal of compensation payments, using as its method, the Regional Land Use and Land Administration Decree of the 2001. We operate through a compensation committee which consists of Project affected persons and the local administration;
3. If any displacement occurs, the woreda will assist the community by giving appropriate support.

Tsehay Tefera Endalew
Head of the Office

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4. Administration: Chilga Woreda

Agenda:

1. Environmental and social impact of the Project (positive and negative)
2. Experience of the Woreda on compensation for project affected farm land and homesteads.
3. Procedure for payment of compensation and basis of compensation rate.
4. The absorptive capacity of the Woreda Administration to accommodate Project Affected People if resettlement is required.

Meeting Location:	Chilga Woreda Administration Offices
Date:	October 10, 2005
Meeting Participants:	Ato Tilahun Mekanint, Administrator
	Ato Engidawork Gezahang, Information Desk Head
	Ato Abebe Tefera
	Ato Abdulahi Mohammed, SMEC Consultant

After discussing the above agenda, the following agreements have been made:

1. The Woreda believed and confirmed that, though there are minor social and environmental negative impacts, the Project positive benefits are high compared to the negative ones.
2. The Woreda Administration agreed that any impact on private farm land and compensation will be handled by the existing procedure. The Woreda also tries to use the experience it has from other projects in establishing a compensation committee to follow this issue.
3. Regarding the compensation rate and payment procedure for this Project, it will be undertaken by a compensation committee which will be established in the future.
4. If there is any temporary annual crop failure (one year crop), it is agreed upon to pay and do any possible assistance in conjunction with the compensation committee.

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5. Administration: Metema Woreda

TO: EEPCO
Addis Ababa

Subject: Transmission Towers to be Constructed in Metema Woreda

As referred above on the subject of transmission towers to be constructed in the Woreda we attach the minutes of discussion herewith.

Demelash Sinishow Tefera
A/C Vice Administrator
Date: 4/11/2005

Minutes of Discussion

Agenda:

1. Environmental and social impact of the Project (positive and negative)
2. Experience of the Woreda on compensation for project affected farm land and homesteads.
3. Procedure for payment of compensation and basis of compensation rate.
4. The absorptive capacity of the Woreda Administration to accommodate Project Affected People if resettlement is required.

Meeting Location:	Metema Woreda Administration Offices
Date:	October 9, 2005
Meeting Participants:	Ato Mebratu Degu, Vice Administrator
	Ato Demelash Sinishow, A/C Vice Administrator
	Ato Abdulahi Mohammed, SMEC Consultant

After discussing the above agenda, the following agreements have been made:

1. The Woreda believed and confirmed that, regarding the impact of the Project, The Project's positive benefit is high as compared to the negative, though there are minor social and environmental impacts.
2. The Woreda Administration agreed that, any impact on private farm land and compensation will be handled by the existing procedure and experience the Woreda has from other projects and establishing a compensation committee to follow these issues.
3. Regarding the compensation rate and payment procedure for this Project, it will be undertaken by a Compensation Committee.
4. It is agreed upon that there is no resettlement due to the Project within the Woreda, however, the Woreda will assist with other impacts wherever possible.

APPENDIX 7 : Implementation Schedule

No	TASK	Months											
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
1	**Project Preparation**												
1.1	*Disclosure/Awareness creation* *Electricity education – schools, clinics etc.*												
1.2	*Project appraisal*												
2	**Land Acquisition and Resettlement: Preparation**												
2.1	*Establish Resettlement Committee*												
2.2	*Mark Right of Way*												
2.3	*Conduct Detailed Measurement Survey* *Revalidate inventories of PAPs*												
2.4	*Fix Compensation Rates and Options through Committee Meetings*												
3.	**Land Acquisition and Resettlement: Implementation**												
3.1	*Pay Compensation to Land Holding Groups and PAPs*												
3.2	*Construction of New Houses and finalize relocation*												
3.3	*Income Restoration* *Training for PAPs*												
4	**Consultation**												
5	**Monitoring**												

APPENDIX 8 : List of Workshop Participants

ETHIOPIA-SUDAN POWER SYSTEM INTERCONNECTION ESIA WORKSHOP, NOVEMBER 23, 2005, HILTON HOTEL, ADDIS ABABA

No.	Name	Title	Organization	Telephone no.	Fax no.	E-mail
EGYPT						
1	Dr. Eng. Elham Mohamoud	Undersecretary of state for Research, Planning and International Cooperation	Ministry of Electricity & Energy	202 2639814	202 2616523	eelhamma@yahoo.com
2	Eng. Ivone Fahim	General Management for Network study & interconnection	Ministry of Electricity	202 2616531	202 4011630	
3	Eng. Bothina Abd El Momeim	Director of the Environmental Studies EEHC	Egypian Electricity Holding Company			
ETHIOPIA						
4	H.E. Ato Alemayehu Tegenu	Minister	Ministry of Mines and Energy			
5	Mr. Mohammed Con	Representative	Embassy of Egypt			
6	Ato Tegenegn Aymeku		Ministry of Trade	11530063		tegenegn@yahoo.com
7	Gebreselassie G/Egziabbher	1st secretary	Ministry of Foreign Affairs	536736/0911 683014	514300	melese8@yahoo.com

ETHIOPIA-SUDAN POWER SYSTEM INTERCONNECTION ESIA WORKSHOP, NOVEMBER 23, 2005, HILTON HOTEL, ADDIS ABABA

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10	Ato Alem Haileselasse		Ethiopian Electricity Agency	011 5536925	011 55037734	alem_hsqm@yahoo.com
11	Ato Mengesha Shiferaw	National Project Coordinator, Power	EEPCO	0911 225631/ 509940	514256	mcwpad@ethionet.et
12	Ato Gosaye Mengiste	Power Expert	Ministry of Mines and Energy	011 646 3362		gosayem@yahoo.com
13	Ato Teferra Beyene	ENSAPT Chairman, Ethiopia	Ministry of Water Resources	651 3389		teferrbye@yahoo.com
14	Mr. Yusuf Haji Ali	Power Enginner	World Bank	011 5176089		yali@worldbank.org
15	Ato Tesfaye Batu	Power Coordinator	EEPCO	0911 254408	011 5517198	tesfayebatu@yahoo.com
16	Fikirte Kebede		EEPCO	091 1180204		
17	Tioum Meaza		EEPCO	011 5562050		
18	Ato Tesfaye Delessa		EEPCO	011 5526987		
19	Ato Girma Demissie	EMU Manager	EEPCO	011 562050		

ETHIOPIA-SUDAN POWER SYSTEM INTERCONNECTION ESIA WORKSHOP, NOVEMBER 23, 2005, HILTON HOTEL, ADDIS ABABA

No.	Name	Title	Organization	Telephone no.	Fax no.	E-mail
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23	Ato Kidane Gizaw	EMU	EEPCO	011 156 2050		
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25	Ato Gelachew Ephrem		ESEE	0911 244839		esee_97@yahoo.com
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26	Eng. Mobark Sayed Ahmed Mohamed Osman Eldosh	Sudan Country Power Project Coordination	Ministry of Electricity	00249 183 783074	00249 183 773680	m_edoosh@hotmail.com
27	Eng. Ali El Nour	Sudan Country Power Project Coordination	National Electric Corporation	00249 912640697	00249 91260837	alielnour12@yahoo.co.uk
28	Mr. Mohammed Elmin Suleiman	Sudan Country Power Project Coordination	National Electric Corporation	912309533		mohamed7@necsudan.com
NBI						
29	Yesuf Abdella		NTEAP/EPA	0911 682235	011 6464876	ymohammed@nilebasin.org
CONSULTANTS						
30	Mr. Abdulahi Mohammed Yemam	Environmental Economist	SMEC		0911 693379	

ETHIOPIA-SUDAN POWER SYSTEM INTERCONNECTION ESIA WORKSHOP, NOVEMBER 23, 2005, HILTON HOTEL, ADDIS ABABA

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33	W/t Mekedes Getachew	Secretary	SMEC			
34	Mr. Juhani Antikainen	Managing Director	Hifab	358 50 5460348 (mob)	358 9 54065555	juhani.antikainen@hifab.fi
35	Mr Jouko Vehi	Project Manager	Hifab	358 954065554	358 9 54065555	jouko.vehi@hifab.fi
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36	Ato Mekuria Tafesse	Executive Director	ENTRO	251 (011) 646 1130		
37	Dr. Ahmed Khalid	Senior Regional Project Coordinator	ENTRO	251 (011) 646 1130		
38	Dr. Solomon Abate	Regional Project Coordinator	ENTRO	251 (011) 646 1130		
39	Dr. Abdulkarim S. Husien	Regional Project Coordinator	ENTRO	251 (011) 646 1130		
40	Dr. Fatma Moustafa	Regional Project Coordinator	ENTRO - PCU	251 (011) 552 2023		
41	Mr. Hani Fouad Salama	Finance and Administration Head	ENTRO	251 (011) 646 1130		
42	Ato Jelal Shafi	Power Economist	ENTRO-PCU	0911 242651		
43	W/ro Selam Haile	Secretary	ENTRO-PCU	251 (011) 552 2023		
44	Selome Belay	Senior Secretary	ENTRO	251 (011) 646 1130		

ETHIOPIA-SUDAN POWER SYSTEM INTERCONNECTION ESIA WORKSHOP, NOVEMBER 23, 2005, HILTON HOTEL, ADDIS ABABA

No.	Name	Title	Organization	Telephone no.	Fax no.	E-mail
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