Environmental and Social Management Framework

for the proposed Regional Communications Infrastructure Project

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Acronyms

AWE:	Air Water Earth (AWE) Limited, *(here in the consultant)*
EASSy:	Eastern African Submarine Cable System
ESARCIP:	Eastern and Southern African Regional Communications Infrastructure Project
ESIA:	Environmental & Social Impact Assessment
ESMF:	Environmental and Social Management Framework
EDD:	Environmental Due Diligence
EGI:	e-Government Infrastructure
GEA:	Government Enterprise Architecture
GIS:	Geographic Information Systems
GoU:	Government of Uganda
IaaS:	Infrastructure as a Service
ICT:	Information and Communications Technology
IDA:	International Development Association
IDRC:	International Development Research Centre
IFMS:	Integrated Financial Management System
MAN:	Metropolitan Area Network
M&E:	Monitoring and Evaluation
MDAs:	Ministries, Departments and Agencies
MICT:	Ministry of Information and Communication Technology
MoES:	Ministry of Education and Sports, Science and Technology
MoLG:	Ministry of Local Government
MoWT:	Ministry of Works and Transport
MWE:	Ministry of Water and Environment
NBI:	National Data Transmission Backbone Infrastructure
NEMA:	National Environment Management Authority
NFA:	National Forestry Authority
NITA-U	National Information Technology Authority-Uganda
NSOER:	National State of Environment Report
O&M:	Operation and Management
OP/ BP:	Operational Procedure/ Bank Procedure (of the World Bank)
PaaS:	Platform as a Service
PFT:	Project Facilitation Team
PWDs:	Persons with disabilities
RCIP:	Regional Communications Infrastructure Project
RPF:	Resettlement Policy Framework
SaaS:	Software as a Service
SMCS:	Secure Messaging and Collaboration Platform
TOR:	Terms of Reference
UCC:	Uganda Communications Commission
UNBS:	Uganda National Bureau of Standards
UNRA:	Uganda National Roads Authority
UWA:	Uganda Wildlife Authority
VoIP:	Voice over Internet Protocol
WB:	World Bank
WMD:	Wetlands Management Department

EXECUTIVE SUMMARY

Despite significant recent economic progress, the East and Southern Africa (E&SA) region continues to face a number of development challenges including extreme poverty and hunger (48.5% of the population living with Public Disclosure Copy less than $1.25 per day (PPP) in Sub-Saharan Africa in 2010), HIV/AIDS prevalence (4.5% of the population ages 15-49 infected with HIV in Sub-Saharan Africa in 2013). ICT is one of the key drivers of socio-economic development in so far as it prevalently enhances service delivery, health services, education, governance, information dissemination and trade.

The proposed RCIP-5 Uganda five-year World Bank financed project, will support the Government of Uganda in improving: (i) coverage for IT infrastructure in the country; (ii) the delivery of public services by improving efficiency through government cloud infrastructure (iii) building capacity in management of IT programs and projects; (iv) improve policy and regulatory environment for ICT in country.

All stakeholders consulted expected the project to be of great benefit to governance, health, education and overall national economic development. A summary of stakeholder views is presented in table ES1.

Table ES 1: A summary of stakeholder views

#	Theme	Stakeholder views
1	The status of information and communication technology (ICT) in the district	**In district headquarters:** i) Facilities are available (computers, internet telephones etc) but their use is still basic limited to use of emails and mobile phones to communicate with government agencies and ministries. ii) e-Government applications are almost non-existent. For example e-shortlisting of job applicants was done once after training, but the system is already forgotten. iii) Lack of ICT specialists hinders its use run the district business. Most staff have basic skills in use of computers but not ICT training. Therefore to benefit the district training is essential. iv) Use of the Integrated Financial Management System (IFMS) has improved oversight and enforcement of internal controls, shorter payments processing, improved account reconciliation, and more accurate and reliable financial reporting v) Use of notice boards, where information is printed and pinned or information is printed and put on shelves for users. Majority of heads of department are computer illiterate; Born Before Computer (BBC); vi) Most district officers do not have desktops nor laptops; vii) District administration structure does include ICT department/ personnel; viii) Internet connection is procured on individual basis not by district so currently ICT running costs (such as for airtime) currently are not institutionalized. **In educational institutions:** Very small computer access levels: for example at Bulega Core Primary Teachers College, three computers served 450 students and 25 tutors). Unreliable power supply and slow connections were also an impediment to effective use of ICT in training institutions.
2	Challenges	**In district local governments:** ▪ Use of personal resources to purchase airtime and internet data to use for

#	Theme	Stakeholder views
		official duties strains staff personal resources and that of their families yet these employees are not paid highly. ▪ Transport costs to and from ministries and other meeting places are high and this would be easily solved by e-meetings and tele-conferencing ▪ High cost of accessing internet data; low data transfer rates and unreliability of connection slow down administrative functions. ▪ Absence of ICT experts makes equipment maintenance very expensive. **<u>In Government hospitals (case of Mbarara Regional Referral Hospital):</u>** ▪ Internet use is minimal because it is only connected to the Director's Office and is very costly to pay for. ▪ Intercom systems in down and urgent communication within the hospital is difficult in critical need. ▪ The CTV is also broken-down which poses security risk ▪ Tele-medical facilities were installed but non-functional due to expensive and unreliable internet connection, ▪ The hospital has no ICT staff at the moment. **<u>In educational training institutions hospitals (case of Bulega Core Primary Teachers College - Hoima District):</u>** ▪ Three computers serving population of 450 students and 25 tutors; ▪ Slow data transfer; ▪ Unreliable connection; ▪ High data cost; ▪ Unreliable power supply hinders effective use of ICT
3	e-Waste	▪ The project will add to the rising levels of e-waste in the country; ▪ Ministry of ITC should come up with clear guidelines on e-waste disposal: recycling, reuse.
4	Land take	Any land take during project implementation should be duly compensated. Trenching often damages private property that is neither repaired nor compensated which maligns before the public an otherwise good infrastructural development.
5	Sustainability of the project	The country's greatest e-Governance challenge seems to be dominance of donor-funded ICT initiatives which are associated with sustainability shock once donor support expires, rendering continuity impossible. This seems to explain why, so far, only mobile phone-based e-Governance innovations have tended to be more successful since their platforms (mobile phones) are not reliant on external funding. More dismay is the fact that even where government has tried to finance ICT projects, corruption and poor monitoring have often ruined or stalled these projects.
6	Views of MDA provide din national stakeholder meeting	**Regulations and policies** ▪ MICT hired a consultant to prepare regulations, guidelines and standards for e-waste management in Uganda and these are expected to be in place in August 2015; ▪ MICT and Ministry of Public Service are developing a policy to institutionalise ICT in all ministries, local governments, departments and agencies. This will streamline interagency cooperation and communication.

#	Theme	Stakeholder views
		Financing internet connection in district local governments: ICT services should be centrally paid by the Ministry of Finance, Planning and Economic Development **Effect on ICT infrastructure when roads or reserves change** ▪ The legality and demarcation of road reserves in Uganda is often in dispute, this will cause numerous grievances or legal suits for the project unless compensation is provided in such cases. ▪ It is highly recommended that Government plans for communal ducts for all infrastructure along roads which can be used/ rented by any entity wishing to lay lines along or across roads. This will avoid prevalent and never-ending destruction of roads by different infrastructure developers. ▪ MoLG is suggesting a forum for urban infrastructure services which will require all infrastructure crossing roads to be approved by a committee; **Challenges foreseen:** There are some places in Uganda that are "hard to reach", "hard to work", "hard to live in" and have no internet networks. These may not benefit as much from such a project due to poor/low cellular network strength. **e-Waste:** Response: EU has earmarked Euro 70 million for global management of e-waste and East African states can access this funding as a bloc, to enable development of facilities for proper e-waste management. In Uganda , UCC and MICT are taking lead in development of e-waste regulations and standards, therefore NITA-U should have plan for end-of-life for ICT equipment which certainly will turn to e-waster and requiring proper disposal. Standards on e-waste have been developed by major equipment manufacturers: DELL, HP, MICROSOFT and ones for Uganda just need to bench mark those already developed. However Government through NITA-U, MICT should provide site for collection of e-waste. **Other stakeholders relevant to the project** ▪ Uganda Cleaner Production Center because they were the first to collect data on e-waste; ▪ Uganda Investment Authority and indeed Ministry of Trade, Tourism and Industry (MTTI) aid development of facilitation in e-waste management investment; ▪ Ministry of Works and Transport, MoWT ▪ Ministry of Education and Sports Science and Technology ▪ Public Procurement and Disposal of Public assets Authority, PPDA **Project sustenance after donor financing** ▪ Government should plan for project continuity beyond donor funding. It

#	Theme	Stakeholder views
		is common for projects important for national economic development to die-off when donor financing ends.

The five-year project will have immense positive socio-economic benefits but some adverse impacts will also ensure upon its implementation, as discussed below.

Table ES 2: Summary of generic positive environmental impacts

Impact / issue	Description of Potential Impact/ Issue	Significance
Construction Phase		
No positive environmental impact is envisaged during the construction phase.		
Operation Phase		
Reduction in human movement	Use of ICT will reduce the need for movement of people from one location to another for: ▪ Meetings (because video/ teleconference is possible) ▪ Bid collection and submission (because electronic submissions are possible) ▪ Collection of examination results from schools (because they can automatically be sent as a short message to a student's cellular phone) ▪ Document pick up (because can be emailed) Reduced movement minimizes traffic-borne air and noise emissions.	Major
Dematerialization	This refers to replacement of physical production and distribution of music, video, books, and software, etc. by the delivery of digital information over the network. Dematerialization reduces resource consumption and waste generation.	Major
Enhanced environmental training	Enhancement of environmental awareness and environmental education in schools	Major
Reduction of resource needs in records storage	Storage of records in electronic form will reduce paper needs and building space in all beneficiary entities, mainly school, hospitals and government agencies.	Major
Decommissioning		
Proper e-waste management	If decommissioning undertakes proper e-waste management (storage, treatment and disposal), no adverse environmental impacts would arise.	Major

Table ES 3: Summary of generic potential negative environmental impacts

Impact / issue	Description of potential Impact/ Issue	Impact significance	Impact management /mitigation measures
CONSTRUCTION PHASE			
Impacts on protected/ sensitive areas	The laying of the fibre optic cables through wetland, forest	Moderate	All works through protected areas should be approved

Impact / issue	Description of potential Impact/ Issue	Impact significance	Impact management /mitigation measures
	ecosystems and protected areas, will likely affect them. In addition, disposal of waste (oil, grease, plastics etc.) will pollute and possibly destroy some of the natural resources. It is noted that construction will be limited to existing road reserve, hence moderate impact significance.		and guided by UWA (for Wildlife), NFA (for forests) and Wetlands Management Department (for Wetlands). Where these agencies require full impact assessment done for project activities, it should be done.
Soil erosion and landslide	Excessive vegetation clearing, excavation coupled with poor drainage can result in soil erosion and landslides on steep slopes. This may be likely in south-western Uganda regions.	Minor to moderate	▪ Restore trenched sites as soon as possible to avoid disturbed areas triggering erosion ▪ Install silt traps on erosion prone sites when trenching for fibre optic cables.
Vibration and noise	Use of earth-moving equipment and heavy vehicles will generate noise and vibration. Excessive noise can be a nuisance to local residents and businesses. Noise and vibration may generate unacceptable disturbance to wildlife where fibre optic cables are to be laid through wildlife parks and game reserves. Vibration from compacting trenches can crack walls of structures adjoining work sites.	Moderate	▪ NITA should ensure that contractors use equipment of good mechanical condition. ▪ Noise and vibration in wildlife should be minimized as guided by UWA. ▪ Any damage to adjoining structures arising from compaction should be immediately compensated by the contractors.
Water contamination	During site preparation and construction, removal of vegetation will create exposed sites. Sediment-laden runoff from cleared areas could impact water quality of downstream watercourses.	Moderate	Sediment traps should be installed at work sites adjoining watercourses.
Improper construction waste management	Site preparation and installation at various sites will generate construction (solid, electronic and fuel/oil waste) which may contaminate the natural environment.	Minor to moderate	▪ The contractor should have a waste management plan for proper management of construction waste. Waste minimization should be a key tenet of such a plan. ▪ NITA should ensure contractors dump waste in areas designated by local authorities.

Impact / issue	Description of potential Impact/ Issue	Impact significance	Impact management /mitigation measures
			▪ Uncontaminated, non-hazardous waste e.g. wood pallets, paper waste may be given to communities for reuse.
Air emissions	It is expected that project vehicular traffic will emit exhaust emissions, chiefly oxides of sulphur (SOx), nitrogen (NOx) and those of carbon (CO_2 and carbonmonoxide- CO). Others are particulates, unburned fuel (VOC) and ground-level ozone. Emissions quantities generated will depend on volume of traffic, travel distances, type and age of vehicles/ equipment, fuel type and quantities, and type of road. Impact on air quality will be short-term only manifesting during the construction phase.	Negligible to minor	NITA should require contractors to submit equipment service schedules/ records as means to ensure that all machinery used is properly maintained, efficient and emits low levels of emissions.
Impact on physical-cultural resources (chance finds)	Trenching for fibre optic cables might encounter chance finds which need preservation. This impact is of low likelihood since trenching will be along reserves of already existing roads.	Minor	Use Chance Finds Procedure provided in Section 7.3.2.5
OPERATION PHASE			
Improper e-waste management	Project operation activities of repair and maintenance will generate e-waste. Currently Uganda has no facilities and has only limited technical expertise to manage electronic waste. NITA-U should be aware of need for environmental standards/guidelines and legislation for e-waste management. Therefore long-term arrangements for management of e-waste that the project may generate should be included in this project.	Moderate	National policy on e-Waste should be followed in managing this waste stream. NEMA, Ministry of ICT and NITA should collaborate to formulate national regulations for proper management of e-Waste and propose incentives to stimulate public-private sector investment in e-Waste recycling, treatment and disposal.
DECOMMISSIONING			
Improper e-waste management	Decommissioning will generate e-waste that will need to be disposed of properly	Minor to moderate	Same as above

A summary of socio-environmental impacts of the ICT project is provided in table below.

Table ES 4: Social benefits of each phase of the proposed project

	Summary of project component	Socio-economic benefit
1	**COMPONENT 1: Enabling Environment**	
	This component will finance the following activities: (i) gap analysis of the existing policy and regulatory framework; (ii) revision of outdated and development of missing ICT polices and sector strategies; and (iii) development and/or revision of ICT legislation, regulatory frameworks, and technical standards. This includes, but is not limited to, development of standards for ICT infrastructure, legislation and regulation to enable use of electronic services and applications, and establishing security requirements for integration and rationalization of all government IT systems. The component will also support change management and capacity building activities such as (i) conducting an ICT skills gap assessment for Government and development of a capacity building program to address deficiencies; and (ii) execution of the skills development program including training and certification for officials at all levels of the Government including critical IT staff.	Initiatives under this component the socio-economic benefits will be: i) Creation of a conducive ICT regulatory environment: Conducive regulatory environment will translate into increased investment in ICT sector leading to: ▪ Creation of job opportunities ▪ Efficient government service delivery, ▪ Improved productivity in all sectors ▪ Better governance. ii) National economic development: The overall effect of all above benefits is nation-wide economic development.
2	**COMPONENT 2: Connectivity**	
	This component will finance: (i) pre-purchase of international bandwidth for Government and priority target user groups; (ii) implementation of missing links to improve regional connectivity and the reach, availability and resiliency of NBI; and (iii) extension of the Government Network (GovNet), providing broadband connectivity to Ministries, Departments and Agencies (MDAs), schools, hospitals, universities, research institutions, and NGOs. This component will also finance technical assistance related to implementation of these sub-components, including looking into possible PPP options for GovNet, and implementation of recommendations stemming from the relevant safeguard studies. Where possible, existing infrastructure will be utilized and direct public financing will only be employed to the extent necessary to reach areas where private sector interest is not sufficient to provide connectivity without additional intervention or incentives.	Socio-economic benefits of this component will be: ▪ Construction jobs during laying optical fibre cables ▪ Secondary benefits such as income to material suppliers and traders along routes where the optical fibres will be laid. ▪ Full utilisation of the national optical fiber backbone which is currently underutilised due to lack of links to neighbouring countries. ▪ Boosting use of ICTs in rural areas will connect agricultural producers to markets with key benefits being able to sell produce at prices comparable to prevalent market conditions. It will be easy for farmers to know produce prices in urban areas and use these to negotiate for better farm-gate prices with traders/

	Summary of project component	Socio-economic benefit
		middlemen. ▪ Connectivity provided to Government offices will improve efficiency in information sharing, dissemination to the public, quicken decision making, streamline procurement processes and lower expenditure in local government (e.g. stationery). Saved revenue would be spent on improving local infrastructure (e.g. roads, markets, water systems) and services (e.g. healthcare). ▪ Connectivity to ministries would lower cost of doing business and Government expenditure. ▪ Connectivity with neighbouring countries will improve trade and regional security. ▪ Broadband connectivity to schools, hospitals, Universities, Research Institutions and NGOs will: ▪ Improve healthcare services delivery ▪ Enhance university education and research ▪ Enable NGOs have a stronger scope and wider spatial coverage of developmental undertakings in communities. ▪ Construction jobs during laying optical fibre cables Full utilization of the national optical fiber backbone
3	**COMPONENT 3: e-Government applications**	
	This component will finance the following activities: (i) development of ICT standards and frameworks; (ii) a cloud based national datacenter (Infrastructure as a Service); (iii) a shared platform to improve Government ability to deploy e-Services (Platform as a Service); (iv) Information Security as a Service; (v) a whole-of-Government data integration and sharing program; (vi) shared IT services to improve Government efficiency (Software as a Service); (vii) e-Procurement; and (viii) citizen centric e-Services. The project will finance the required hardware and software as well as technical assistance and consulting services related to the implementation of these sub-components. It is also noted that the project will provide solar-battery system for reliable power supply	Socio-economic benefits will be: i) Transformation and enhancement of public service delivery using ICT, by reducing cost and increasing speed of doing government business. ii) With "Whole-of-Government Data Integration and Sharing Programs", all Ministries and Departments will have cheaper ICT services, improved information sharing/ flow and faster delivery of public services. iii) "Quick Wins" program will support innovative pilots with visible impacts on Ugandans' socio-economic conditions, demonstrate

	Summary of project component	Socio-economic benefit
	at twenty sites to be on property of government institutions.	cost-effectiveness and value of using ICT in public service delivery.
4	**COMPONENT 4: Project Management**	
	This component will finance project management related costs including project coordination, procurement, financial management, monitoring & evaluation, and environmental and social safeguards. This will include funding for consultancy support for the successful implementation of the project, logistics, consumables, office equipment, as well as incremental operating costs and audits. This component will also fund technical assistance (TA) to support monitoring and evaluation (M&E).	Socio-economic benefits will be short-term contract/ job opportunities for skilled professionals in areas of procurement, monitoring and evaluation, environmental and social safeguards.

Conclusion:

If the proposed project is not implemented, development of the country will continue to be constrained by lack of fast internet and telecommunications capacity, especially in the sectors of data transfer, banking and education. The demand for capacity will continue to grow along with economic growth. The project will improve health, education, trade and the speed at which government transacts administrative functions.

The one highly significant impact during project operation will be management of e-Waste in light of the fact that Uganda currently neither has national regulations nor facilities for disposal of this waste stream. It is incumbent on Ministry of ICT collaborating with UCC, NEMA and NITA to develop these guidelines and incentives to stimulate public-private sector investment in e-Waste recycling facilities in order to ensure proper e-waste management.

Construction-phase impacts will be of low significance and easily be managed by following national EIA guidelines, guidance of UWA, NFA or other conservation agencies such as Wetlands Management Department and responsible construction practices associated with erosion control, waste management, site reinstatement and compensation for any inadvertent damages occasioned by construction activities.

1. INTRODUCTION

1.1. The proposed RCIP 5 Project

Under the Regional Communications Infrastructure Project (RCIP 5), Government of Uganda will borrow USD 75 million from International Development Association (IDA)[1] and spend it over a five year period to: (i) improve coverage for IT infrastructure in the country; (ii) improve the delivery of public services by improving efficiency through government cloud infrastructure; (iii) building capacity in management of IT programs and projects; and (iv) improve policy and regulatory environment for ICT in country. The project will also entail a technical assistance component to finance advisory, technical and project management support in order to achieve project objectives.

As part of the preparation for implementation of the RCIP UG, National Information Technology Authority Uganda (NITA-U) has commissioned an Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) to guide identification, assessment, mitigation, implementation, monitoring and reporting environmental and social aspects of the project. The RPF and ESMF have been prepared as stand-alone documents.

1.2. ICT Infrastructure Development

1.2.1 Current Status

The National Information Technology Authority Uganda (NITA-U) is implementing the National Data Transmission Backbone Infrastructure and e-Government Infrastructure Project (NBI/EGI) whose major aims are to connect all major towns within the country onto an Optical Fibre Cable based Network and to connect Ministries and Government Departments onto the e-Government Network[2]. The NBI/EGI is composed of two components, the National Data Transmission Backbone Infrastructure (NBI) and e-Government Infrastructure (EGI). The NBI component is designed to connect all major towns onto the National Backbone by optical fibre cables.

A Metropolitan Area Network (MAN) consisting of 1400 km of optical fibre cables connecting Jinja, Mukono, Bombo and Entebbe to Kampala linking to the border with Kenya and extending up to Kabale in the south west; 27 main line Government Ministries and Departments and Agencies (MDAs); and the Primary Data Center has been developed. In addition, twenty two district headquarters across the country have so far been connected (see Figure 1). The infrastructure in place is supporting Uganda's Integrated Financial Management System (IFMS), Video Conferencing Services, Voice over Internet Protocol (VoIP) and the Secure Messaging and Collaboration Platform (SMCS). The SMCS platform has been successfully piloted in three sites namely: State House, Ministry of ICT and NITA – U.

1.2.2 Future Plans

NBI Phase III will connect the following districts and border points: Kabale, Katuna, Malaba, Masaka and Mutukula. Phase III will also avail an alternative route to undersea cables at Mutukula through mainland Tanzania to the East African Submarine cables and will also connect Uganda to Rwandan border. All other districts will be reached using the last-mile connectivity programme using other connectivity technologies like WiMax. The proposed Regional Communications Infrastructure Project for Uganda (RCIP UG) will be implemented within the context of NITA-U. The RCIP UG will complement existing country ICT and e-government Infrastructure initiatives and help fill the financing and technical gaps. RCIP will support Government of Uganda in improving: (i) coverage for IT infrastructure in the country; (ii) the delivery of public

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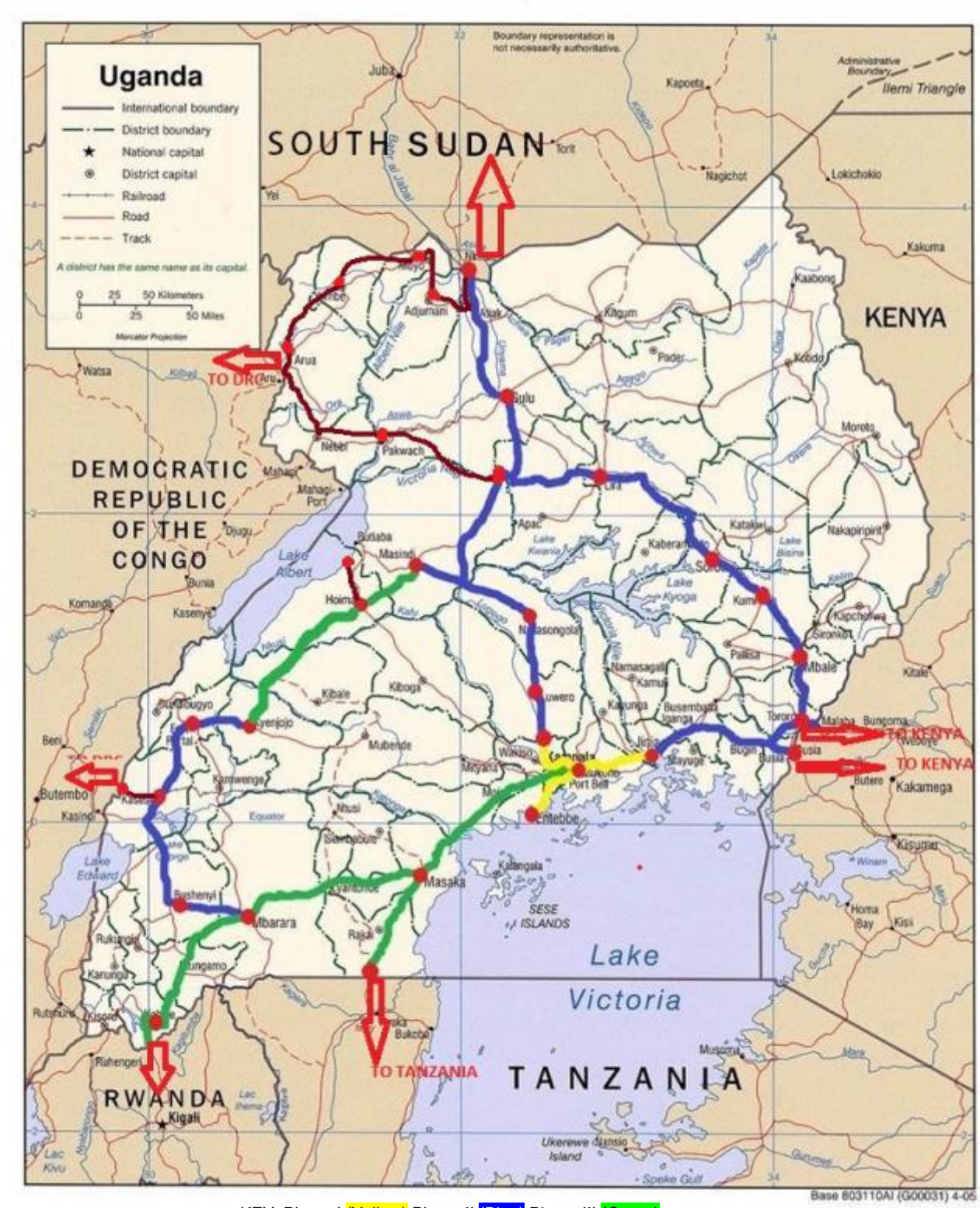
[1] IDA is that arm of the World Bank that helps the world's poorest countries with aim to reduce poverty by providing loans (called "credits") and grants for programs that boost economic growth, reduce inequalities, and improve people's living conditions.

[2] http://www.nita.go.ug/projects/nbiegi-project

services by improving efficiency through government cloud infrastructure (iii) building capacity in management of IT programs and projects; (iv) improve policy and regulatory environment for ICT in country.



KEY: Phase I (Yellow) Phase II (Blue) Phase III (Green).

Figure 1: ICT Infrastructure Development Phases

2. PROJECT DESCRIPTION

The Government of Uganda recognizes the importance of ICT for National development and transformation into an electronic economy and has put emphasis on transforming the delivery of Government services through the use of Information Technology. RCIP project aims to promote the use of technology as an enabler in achieving development goals as outlined in the government vision 2040. There is huge opportunity in the country today provided by the growing information age society and the demand for electronic services delivery that creates the need for government to improve its IT infrastructure, service delivery processes and capacity building in government using ICT as enabler.

The proposed RCIP-5 Uganda five-year World Bank financed project, will support the Government of Uganda in improving: (i) coverage for IT infrastructure in the country; (ii) the delivery of public services by improving efficiency through government cloud infrastructure (iii) building capacity in management of IT programs and projects; (iv) improve policy and regulatory environment for ICT in country.

The development objectives of the proposed RCIP Uganda Programme are to: (i) lower prices for international capacity and extend the geographic reach of broadband networks (the connectivity development objective); and (ii) improve the Government's efficiency and transparency in delivery of services to its citizens through e-Government applications (the transparency development objective).

Through RCIP, transformation of public service and governance is expected by using modern ICT platforms and enhancing connectivity. The impact will be realized through creating an environment for citizens and private sector to interact with government through use of ICT technologies for efficiency, providing the legal and regulatory framework and changing the mindsets of public servants and citizens through awareness activities and capacity building in government. The proposed RCIP-U project would consist of the following four components:

- enabling Environment;
- Connectivity;
- e-Government Application; and
- Project Management Support.

2.1. Component 1: Enabling Environment

While the Government of Uganda has taken positive steps in recent years toward improving the enabling environment for the ICT sector, substantial work remains if the sector is to thrive. A conducive enabling environment would translate into increased sector investment and competitiveness, and improved access to and quality of ICT services for citizens, businesses, and government. This in turn would enable job creation and improved productivity and service delivery across all sectors, both public and private. The benefits of a conducive enabling environment will also spillover to neighboring countries which rely on Uganda for competitive, reliable and high quality international data transit.

This component aims to support the capacity of NITA-U (implementation agency), the Ministry of ICT and other stakeholders to review, develop and implement relevant ICT policies, strategies, laws and technical regulatory frameworks to support a modern and vibrant ICT sector. The objectives include maximizing the coverage, quality, affordability, and security of ICT infrastructure and enabling the delivery of e-Services by both Government and the private sector. It will also seek to promote alignment of Uganda with regional regulatory and policy harmonization efforts among the countries of the East African Community (EAC) and the findings and recommendations of the forthcoming EAC Digital Agenda[3].

[3] The World Bank in collaboration with TradeMark East Africa and EAC is currently carrying out analytical work and technical assistance in support of establishing a "Digital Agenda." The agenda will serve as a roadmap for removing the

Specifically, this component will finance the following activities: (i) gap analysis of the existing policy and regulatory framework; (ii) revision of outdated and development of missing ICT polices and sector strategies; and (iii) development and/or revision of ICT legislation, regulatory frameworks, and technical standards. This includes, but is not limited to, development of standards for ICT infrastructure, legislation and regulation to enable use of electronic services and applications, and establishing security requirements for integration and rationalization of all government IT systems. The component will also support change management and capacity building activities such as (i) conducting an ICT skills gap assessment for Government and development of a capacity building program to address deficiencies; and (ii) execution of the skills development program including training and certification for officials at all levels of the Government including critical IT staff. Finally, the component will support the development and execution of robust awareness and partnerships building programs and communication strategies.

2.2. Component 2 - Connectivity

In addition to improving the enabling environment, complimentary infrastructure investments are also needed to ensure greater access to affordable, high quality ICT services, both within Uganda and in neighboring countries. Recognizing this, the Government of Uganda has already developed the first two phases of a national fiber optic backbone network – the National Backbone Infrastructure (NBI). However, its capacity is currently underutilized due to a lack of links to neighboring countries other than Kenya and South Sudan (the latter with no complimentary fiber yet in place), limiting the diversity of routes for connection to undersea cables and curbing potential growth of regional traffic. In addition, there are significant challenges in terms of quality and reliability due to the fact that many of the branches of the network are not part of self-healing loops[4]. Moreover, significant portions of the country, particularly in rural areas, currently have no access to fiber optic connectivity, either through NBI or the networks of the private operators.

To address these challenges, the Government of Uganda intends to connect major regions of the country to NBI and create additional links to neighboring countries, which is expected to improve the reliability and capacity utilization of NBI and ensure improved connectivity to neighboring countries and in a region as a whole. The extension of NBI will help to boost the use of ICTs, enable connectivity to Government offices and public institutions in the regions, and lower the cost of international bandwidth by ensuring a diversity of options for access to submarine cables. The cost of international bandwidth will be further lowered by pre-purchasing bandwidth in bulk for Government and priority target user groups to achieve greater economies of scale.

Specifically, this component will finance the following activities: (i) pre-purchase of international bandwidth for Government and priority target user groups; (ii) implementation of missing links to improve regional connectivity and the reach, availability and resiliency of NBI; and (iii) extension of the Government Network (GovNet), providing broadband connectivity to Ministries, Departments and Agencies (MDAs), schools, hospitals, universities, research institutions, and NGOs. This component will also finance technical assistance related to implementation of these sub-components, including looking into possible PPP options for GovNet, and implementation of recommendations stemming from the relevant safeguard studies. Where possible, existing infrastructure will be utilized and direct public financing will only be employed to the extent necessary to reach areas where private sector interest is not sufficient to provide connectivity without additional intervention or incentives.

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bottlenecks to developing a coordinated digital ecosystem and single digital market in the sub-region, with the aim of driving the growth of ICT and ICT Enabled sectors, promoting innovation and leveraging ICTs to promote citizen welfare.

[4] Best practice requires fiber optic networks to be deployed in loops, whereby if a line is cut traffic is not disrupted as it can flow in either direction around the loop.

2.3. Component 3: e-Government Applications

A key goal of this component is increased access to affordable, high quality connectivity and a conducive enabling environment offer the opportunity to transform public service delivery through use of ICTs to improve the lives of ordinary Ugandans. To achieve this goal, the Government intends to install a range of enabling e-Government foundations, i.e., shared infrastructure and services, in order to simplify implementation of sector specific e-Services by MDAs. The establishment of a *Shared Public Service Delivery Platform* can significantly reduce the cost and time taken by key sectors to develop and maintain new electronic services. For example, a Ministry wishing to offer a service electronically could significantly speed up the deployment and cut costs by leveraging the shared platform for data storage and hosting, security, data sharing with other MDAs, citizen authentication mechanisms, payment services, etc., and focus on sector specific aspects of the service and the specific citizen interface. This would be a relatively light and inexpensive undertaking in comparison to developing a stand-alone service and providing ongoing management and operations support. With the Shared Public Service Delivery Platform in place, all MDAs in Uganda would be well positioned to accelerate the rollout of e-Services and to increase overall efficiency and transparency. While this component will primarily focus on the implementation of the Shared Public Service Delivery Platform, selected citizen centric e-Services from pre-identified priority sectors will be implemented to demonstrate the effectiveness of this approach and impact on service delivery to ordinary citizens.

Specifically, this component will finance the following activities: (i) development of ICT standards and frameworks; (ii) a cloud based national datacenter (Infrastructure as a Service); (iii) a shared platform to improve Government ability to deploy e-Services (Platform as a Service); (iv) Information Security as a Service; (v) a whole-of-Government data integration and sharing program; (vi) shared IT services to improve Government efficiency (Software as a Service); (vii) e-Procurement; and (viii) citizen centric e-Services. The project will finance the required hardware and software as well as technical assistance and consulting services related to the implementation of these sub-components.

It is also noted that the project will provide solar-battery system for reliable power supply at twenty sites to be on property of government institutions.

2.4. Component 4: Project Management

This component will finance project management related costs including project coordination, procurement, financial management, monitoring & evaluation, and environmental and social safeguards. This will include funding for consultancy support for the successful implementation of the project, logistics, consumables, office equipment, as well as incremental operating costs and audits. This component will also fund technical assistance (TA) to support monitoring and evaluation (M&E).

2.5. Project Areas

The project location is national-wide involving all:

- Districts of Uganda,
- Government Ministries, Departments and Agencies (MDAs),
- Targeted User Groups (hospitals, Schools, Universities and research Institutes)

3. METHODOLOGY USED TO PREPARE THE ESMF

3.1. Objectives and Scope of ESMF

The objective of this Environmental and Social Management Framework (ESMF) is to ensure that implementation of RCIP UG is carried out in an environmentally and socially responsible manner.

The ESMF has pointed out the national and World Bank environmental and social safeguard policy requirements that were triggered by the RCIP UG projects, the national legal and institutional arrangements, environmental screening and assessment guidance, monitoring and reporting formats and capacity requirements for its effective operationalization which is all geared towards ensuring that, the proposed projects will take an environmentally and socially sustainable path.

Therefore, the ESMF aims to provide clear guidelines and process for determining level of required environmental assessment and where necessary development of mitigation measures, so as to avoid, manage or minimize potentially negative environmental and social impacts associated with RCIP program activities, specifically to:

i) Establish clear methodology for screening sub-project activities and determine level of required environmental and social assessment;
ii) Where necessary Identify and assess the potential social and environmental impact of the proposed Project on different livelihood sources;
iii) Identify and review national, regional and international laws, policies and regulations relevant to RCIP UG implementation;
iv) Review and present bio-physical and socio-economics environments of the project location;
v) Specify appropriate roles and responsibilities of government departments and lead agencies, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to the project subcomponents
vi) Assess the NITA-U capacity, training and technical assistance needs to implement the provisions of the ESMF;
vii) Provide criteria for selection of sites for the construction activities of the projects under the program and for the design of environmental and social impact mitigation measures;
viii) Establish the projects funding required to implement the ESMF requirements and to provide practical information resources for implementing the ESMF;
ix) Provide generic Environmental and Social Management Plan (ESMP) and report forms under the projects to ensure that environmental and social issues will be managed effectively;
x) Undertake stakeholder consultations, document issues that are raised, and propose process of handling such concerns;
xi) Develop a Chance Finds Procedure to cater for any Physical Cultural Resources that may be found/ discovered as a result of the project civil works;
xii) Develop a Grievance Redress Mechanism to guide handling of any complaints that may arise during project implementation; and
xiii) Develop draft TORs for development of ESIA/ Project Brief that may be required during project implementation.

3.2. Rationale for the ESMF

According to the proposed project components, implementation of some sub-projects activities especially the laying of optical cable infrastructure will pose some environmental and social impacts and thus trigger some of World Bank's safeguards policies and country requirements for environmental assessment. Hence, implementation of some sub-project components may require Project Briefs and ESIAs to be developed to address specific environmental and social impacts.

NITA-U will need a tool for screening and guidelines to identify, assess and mitigate potential negative environmental and social impacts at the conception, planning, implementation and monitoring stages of

investment activities. Thus ESMF is intended to be used as a practical tool for screening all undertakings for their potential impacts and streamline all the necessary procedures to follow in mitigating and minimizing environmental and social impacts arising from their implementation including project formulation, design, implementation, monitoring site restoration and ecological preservation. It also provides guidance and process for EIA preparation in cases where the screening results indicate that a separate Environmental Impact Assessment (EIA) is required.

As part of the World Bank requirement for safeguarding the risks and impact of the program to the environment, Environmental and Social Management Framework (ESMF) are required to provide a process, clear guidelines and methodologies to assess the potential environmental and social impacts RCIP. Therefore, this project requires preparation of this ESMF that will provide the environmental and social screening process, environmental and Social Management Plan (ESMP) and Environmental Monitoring Plan (EMP) outlined in this ESMF. This ESMF will guide and allow NITA-U to identify, assess and mitigate potential negative environmental and social impacts at the project phases of investment activities, and, if necessary, carry out separate EIAs for sub-projects should the screening results indicate the need for such.

3.3. Preparation of the ESMF

Preparation of this ESMF utilized interviews, visit to districts in the four regions of Uganda, observations and review of available documents. Specifically, the following was done:

3.3.1. Document Review

Review of the existing baseline information was undertaken to obtain understanding of the proposed project. A desk review of the Ugandan legal framework and policies was done to analyze national legislation and policy framework relevant to the project. Among the documents that were reviewed in order to collect baseline information included:

- State of the Environment Report in Uganda, 2014;
- National Information and Communication Technology Policy, 2003;
- National Policy on Disability in Uganda, 2006
- e-Waste Policy (Uganda), 2012
- National Development Plan 2010/11- 2014/15;
- The National Environment Act 1995;
- World Bank Safeguard Policies.

The key legislation reviewed included the following:

- The Constitution of the Republic of Uganda, 1995;
- The Electronic Signatures Act, 2011
- Computer Misuse Act, 2011
- The Information and Communication Technologies Act 2001
- Copyright Act 1997
- Child Protection Act 1995
- The National Environment Act, Cap 153;
- The Public Health Act, 1964
- The Land Act, Cap 227;
- Local Governments Act, Cap 243
- Employment Act, 2006
- The Physical Planning Act 2010
- The Water Act, Cap 152;
- The Uganda Wildlife Act, Cap 200;
- National Policy for Older Persons, 2009
- The Occupational Safety and Health Act, 2006;

- Historical Monument Act, 1967;
- The National Forestry and Tree Planting Act, 2003;
- The National Environment (Environment Impact Assessment) Regulations; 1998
- National Environment (Noise Standards and Control) Regulations, 2003
- The National Environment (Audit) Regulations, 2006 (12/2006);and
- The National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations, 2000
- The National Environment (Waste Management) Regulations, 1999.
- The Roads Act, 1949

International conventions below to which Uganda is a signatory were reviewed:

- The African Convention on the Conservation of Nature (1968)
- The Ramsar Convention (1971) on wetlands of International Importance
- The Protection of World and Cultural Heritage convention (1972)
- The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES, 1973)
- Convention on Biological Diversity- (CBD 1992)

RCIP UG also triggers the following World Bank Safeguard policies below which were equally reviewed in the study as summarised below as follows:

- OP 4.01 Environment Assessment
- OP 4.04 Natural Habitat
- OP 4.11 Physical Cultural Resources
- OP 4.10 Indigenous Peoples
- OP 4.12 Involuntary Resettlement
- OP 4.36 Forests

3.3.2. Field Visits

As part of the consultation process, field visits were done in districts of Mbarara, Hoima, Gulu, Nakasongola, Jinja, Bugiri and Wakiso where district local governments, educational institutions, roadside businesses and Government hospital administrators were met, project information disclosed and their views collected.

The field visits considered the following to initiate the baseline:

- Physical-cultural and historical sites;
- Wildlife habitats, feeding, and crossing areas;
- Land tenure system;
- Electricity grid coverage;

The Socio-economic aspects captured during the baseline survey included:

- General population data and settlement patterns/ Living patterns;
- Community level of wealth/ level of income/ economic activities;
- Education (Schools and Vocational institutions);
- Presence of resource personnel;
- Gender issues and community setting.

3.3.3. Stakeholder Consultations

Consistent with best practice in developing ESMFs, consultations have been done with relevant stakeholders to collect their views.

A list of stakeholders consulted is provided in Box 3.1 below.
Box 3.1: A list of stakeholders consulted

Category		Stakeholder consulted
District local governments		
	1	Jinja District Local Government
	2	Bugiri District Local Government
	3	Mbarara District Local Government
	4	Nakasongola District Local Government
	5	Gulu District Local Government
Regional Referral Hospitals		
	1	Entebbe Hospital
	2	Jinja Regional Referral Hospital
	3	Hoima Regional Referral Hospital (Hoima District)
	4	Mbarara Regional Referral Hospital
	5	Gulu Regional Referral Hospital
Educational institutions		
	1	Hoima School of Nursing and Midwifery
	2	Bishop Stuart College Kibingo In Mbarara District
	3	Bulega Core Primary Teachers College (Hoima District)
	4	Mbarara University Of Science & Technology (MUST)
	5	Gulu Core Primary Teachers College
	6	Gulu University
Government Ministries, Departments and Agencies		
	1	National Information Technology Authority, NITA
	2	Ministry of Water & Environment, MWE
	3	Uganda National Bureau of Standards, UNBS
	4	Ministry of Local Government, MoLG
	5	National Forestry Authority, NFA
	6	Ministry of Information and Communications Technology, MICT
	7	Uganda National Roads Authority, UNRA
	8	Uganda Wildlife Authority, UWA
	9	Ministry of Education, Sports, Science and Technology

Institutions that were invited to the National Stakeholders meeting but did not attend and sent apologies include: National Environment Management Authority (NEMA), Ministry of Health (MoH), Uganda Communications Commission (UCC) and Ministry of Works and Transport (MoWT). These institutions shall be further consulted and involved in the project during implementation.

A record of stakeholder consultation is provided in Annex 5 and key issues from stakeholders are summarized in Chapter 10.

4. UGANDA'S BIOPHYSICAL AND SOCIO-ECONOMIC ENVIRONMENT

Existing environmental and socio-economic conditions in Uganda are discussed in sections below and will, in many cases, provide a basis for predicting impacts of the project.

4.1. Location and Size

Uganda (located in East Africa) has an area of 241,500 km² and is bordered by Sudan to the North, the Democratic Republic of the Congo to the west, Tanzania and Rwanda to the South and Kenya to the East. 15.3% of its land area is covered by water. Uganda contains and shares some of the world's most important eco-systems with its neighbours and beyond and notably Lakes Victoria, Albert, Edward, the Nile Basin, its mountain systems such as the Rwenzori, Elgon and Virunga series as well as several parks. It has a crucial role to play in the conservation of biodiversity in the sub-region and the world at large administratively; Uganda is divided into 132 districts located in four regions of Northern, Central, Eastern and Western.

4.2. Climate

Climatic conditions in Uganda are discussed below.

a) Uganda is characterized by equatorial climate with plenty of rain and sunshine moderated by the relatively high altitude. In most parts of the country, the mean annual temperatures range from 16^0C to 30^0C. Nevertheless, the Northern and Eastern regions sometimes experience relatively high temperatures exceeding 30^0C and the South Western region sometimes has temperatures below 16^0C. The Central, Western and Eastern regions have two rainy seasons, from March to May for the first rains, and the second rains from September to November. The Northern region receives one rainy season from April to October, and the period from November to March has minimal rain. Most of the country receives between 750 mm and 2100 mm of rain annually.

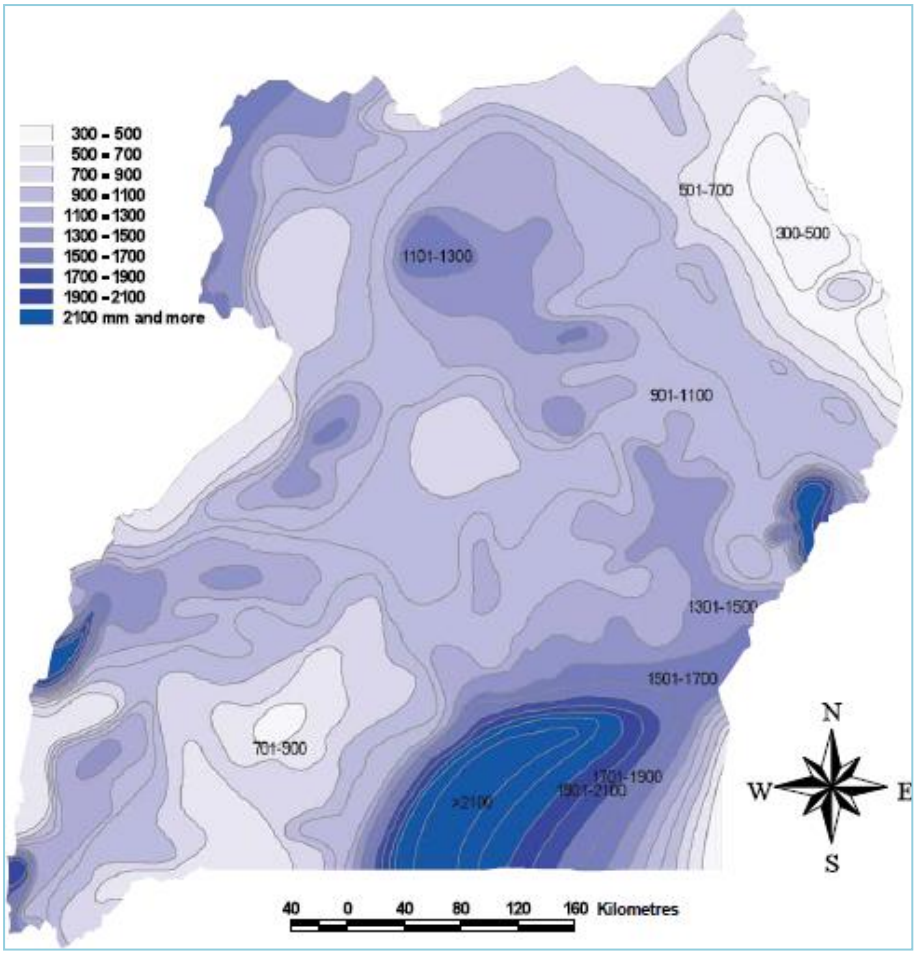
b) Uganda's climate is naturally variable and susceptible to flood and drought events which have had negative socio-economic impacts in the past. Human induced climate change is likely to increase average temperatures in Uganda by up to 1.5 ºC in the next 20 years and by up to 4.3 ºC by the 2080s. Such rates of increase are unprecedented. Changes in rainfall patterns and total annual rainfall amounts are also expected but these are less certain than changes in temperature.

c) The Inter-Tropical Convergence Zone (ITCZ) and the air currents such as the southeast and northeast monsoons influence the climate in Uganda. In most parts of the country, the seasons are fairly well marked- as rainy and dry seasons. Depending on the elevation and landscape, the mean temperature over the whole country show great variations. However, in areas adjacent to water bodies such as Lake Victoria, maritime conditions tend to modify the temperatures. The variation in mean monthly and annual evaporation rates are much smaller than corresponding variations in rainfall, which respectively, are 10-20% and 20-40% in the southern and northern parts of the country. The movement of the ITCZ is to a great extent responsible for the variations in meteorological factors that determine evaporation.

Source: UBOS, 2012

Figure 2: Regions in Uganda

d) Uganda may become wetter on average and the increase in rainfall may be unevenly distributed and occur as more extreme or more frequent periods of intense rainfall. Regardless of changes in rainfall, changes in temperature are likely to have significant implications for water resources, food security, natural resource management, human health, settlements and infrastructure. In Uganda, as for the rest of the world, there are likely to be changes in the frequency or severity of extreme climate events, such as heat waves, droughts and floods.



Source: NEMA, 2009

Figure 3: Uganda rainfall map

e) Uganda's economy and wellbeing of its people are tightly bound to climate hence are highly vulnerable to climate change and variability. In particular, climate change is likely to mean increased food insecurity, rising trends in spread of diseases like malaria, soil erosion and land degradation, flood damage to infrastructure and settlements and shifts in the productivity of agricultural and natural resources. It will be the poor and vulnerable who feel these impacts the hardest, and the likely implication scenario is increasingly higher chances for businesses failing to seek means of survival.

Relation to the project: *Climatic conditions can influence rain received in a given project area, sunshine hours, flood levels and winds all of which could affect, in various ways, the proposed project such as construction schedules, or inability to deliver project equipment to sites when, for example, roads are cut off by floods.*

4.3. People and Population Dynamics in Uganda

4.3.1. The People

Between 2002 and 2014, the population increased from 24.2 million to 34.9 million. This gives an average annual growth rate of 3.03 percent. At this rate of growth, the population of Uganda is projected to increase to 35.0 million in 2015 and further to 47.4 million in the year 2025 [5].

[5] *National Population and Housing Census, 2014*

The Uganda constitution 1995 recognizes 46 tribes (GoU 1995) with varying production and consumption patterns. Modes of production and the rural livelihood coping strategies range from mainly cultivators (e.g. Baganda, Bakiga, Bagisu and Basoga) to pastoralists (e.g. the Karamojong and the Bahima) the rest of the people derive their livelihoods from a mix of livestock keeping and cultivation or agro- pastoralism. In addition, Uganda has been and still is, home to several thousand refugees from neighbouring countries. There are also other non-citizens residing in Uganda as a preferred place for home or where they are engaged in various economic activities. This mosaic provides Uganda with a rich cultural base and opportunities for modernization. However, there are also challenges the people of Uganda face, among others are: (i) rapid population growth and the ensuing pressures on the country's natural capital; (ii) inadequate provision of, and demand for, social services and infrastructure; and (iii) poor environmental conditions.

Relation to the project: *Infrastructure, income and literacy levels and proximity to urban centres have a significant influence on information technology acceptance and utilization. The project will increase investment in ICT sector leading to jobs creation and efficient government service delivery, improved productivity in all sectors and better governance. These will be long-term benefits to the Uganda people.*

4.3.2. Population Dynamics

In Uganda, the 20th century marked an unprecedented population growth and economic development as well as environmental change. The Census report of 2002 put the country's population at 24.7 million people in 2003. The current growth rate of 3.4% per year is higher than the 2.9% that was envisaged for the period 1991 – 2002. Currently standing at 34.9 million, population of Uganda is likely to hit 50 million by 2025. Population is a key determinant of economic and social wellbeing and environmental degradation.

Considering the size of Uganda and comparing this with cities such as Mexico and Lagos whose populations are in excess of 20 and 13 million people respectively, it can easily be concluded that Uganda does not have a problem with its population size. While absolute numbers may suggest Uganda is relatively under-populated, the concern is the inability to provide for these relatively few people. In the absence of adequate social services, even a small population becomes a constraint. In addition, a poor population however small, needs attending to otherwise its people may engage in activities detrimental to the environment especially where alternative livelihood options are limited.

The urban population in Uganda has increased rapidly from less than 0.8 million persons in 1980 to 6.64 million persons in 2014, an 8-fold increase in 34 years. This increase is mainly attributed to the creation of new urban administrative units, natural growth, demographic factors (excess of fertility over mortality) and Rural-Urban Migration (UBOS, 2012). Kampala City has by far the highest population density. The population growth rate of Kampala City is above the national average even though the population growth rate of Central region, in which Kampala City is located, is the lowest among the four regions (North, Eastern, Western and Central) in the country. The lowest population density by region is 65 people per square kilometers for the Northern region.

Table 4-1: Population characteristics of Uganda

Region	1991 population	2002 population	2014 population
Central	4,843,594	6,575,425	
Eastern	4,128,469	6,204,915	
Northern	3,151,955	5,363,669	
Western	4,547,687	6,298,075	
Total	**16,671,705**	**20,442,084**	**34,856,813**

Source: UBOS, 2014 Census Results

Figure 4 below shows population distribution in Uganda.

Relation to the project: *The high rate of population growth may affect Uganda's efforts to provide and sustain timely basic services, information and employment opportunities. However ICT will stimulate entrepreneurship creating job opportunities in internet services, cellular telephony, information security, storage and management. In addition the project will enhance administrative functions improving governance and service delivery.*

4.4. Morphology, Relief and Drainage

4.4.1. Morphology and Relief

Most of Uganda forms part of the interior plateau of the African continent and its landforms are characterized by flat-topped hills in the central, western and eastern parts of the country. The rise of the plateau in the eastern and western part of the country is represented by spectacular mountain topography located along the borders as, for example, the Rwenzori Mountains and Mufumbira volcanoes in the west and Mt. Elgon, Mt. Moroto, Mt. Murungole and Mt. Timu and Mt. Kadam in the East (NEMA 2002).

4.4.2. Drainage

Most of the rivers in the southern part of the country drain into Lake Victoria. Waters flows out of the lake along Victoria Nile into Lake Kyoga into Lake Albert (Lake Albert also receives water from DRC mainly through river Semliki), the Albert Nile or White Nile in Sudan, down to the Mediterranean Sea through Egypt. The lakes in Uganda cover almost one-fifth of the total area of the country. Lake Victoria, shared with Kenya and Tanzania is the biggest tropical fresh water body and the second largest fresh water lake in the world. Other lakes of interest are the crater lakes on the western part of the country associated with the western rift valley. It is not likely that any lakes or major rivers will be affected by this project.

4.4.3. Geology and Soils

The geological formations of Uganda indicate rocks formed between 3,000 and 6,000 million years ago (pre-Cambrian era) which makes them very old. The younger rocks are either sediments or of volcanic origin, formed from about 135 million years ago (Cretaceous period) to the present. Hence there is a gap in the geological history of Uganda of about 460 million years. The soils of Uganda are defined by a number of parameters including parent rock, age of soil and climate (NEMA 2008). The most dominant soil type is ferralitic soil which accounts for about two-thirds of the soils found in the country. Based on studies carried out in the past (NEMA 1996), Uganda's soils are divided into six categories according to productivity: (a) very high to high productivity, (b) moderate productivity, (c) fair productivity, (e) low productivity (e) negligible productivity and (f) zero productivity. The high productivity soils cover only 8% of the area of Uganda[6]. Considering the country's size, this is indeed a small area and it may therefore be most likely to encounter short-term arrangements, especially in urban areas, where almost every inch of land is developed either for residence and commercial purpose. Conversion of such land for project facilities would call for some sort of compensation.

Relation to the project: *At locations where RCIP facilities will be constructed, landform is an important aspect to consider since it influences access, site drainage, erosion (or foundation damage/ undercutting) and risk of landslides. For example soils influence safety and speed of trenching when laying fiber optic cables.*

4.5. Natural Resources

4.5.1. Climatic variability

In Ugandan climate change and climate variability impose adverse impacts on livelihoods, especially of the rural poor. The country is a net sink for greenhouse gases but global climate has no physical borders, hence Uganda

[6] http://www.fao.org/ag/agp/AGPC/doc/Counprof/Uganda/uganda.htm

is also impacted by increase and fluctuation in the earth's temperature. Increased frequencies of floods and droughts are manifestations of climate change.

Relation to the project: *Climate change effects are associated with flooding and landslides. These have in the recent past caused immense destruction to infrastructure especially in Eastern and South-Western Uganda, as exemplified by Bududa landslides and flooding in Teso and Kasese. In such incidents, ICT infrastructure, power lines poles and roads are either damaged or washed away by flood and landslides.*

4.5.2. Terrestrial Resources and relation to the project

a) Land resources

Availability and access to land is increasingly becoming difficult in Uganda, especially for the poor. This is an increasingly big challenge for infrastructure development due to rising compensation costs when acquiring right of way. While optical cables will, to extent possible, be laid in road reserves, there could be instances where project infrastructure requires new land or damage private property hence necessitating compensation.

b) Forestry Resources

As earlier noted, project infrastructure will be built in road reserves and therefore no forests will be affected by this project. Therefore forestry resources are here discussed only for the reason that timber and poles (scaffoldings) would be necessary for construction of station sites in this project.

Generally due to tightened controls, loss of forest cover in protected forests has been reducing and total cover is stabilizing. Unfortunately, forests in protected areas make up only 30% of the national forest cover. The remaining 70% are on private and customary land where deforestation rates are high as a result of conversion of forest areas into agricultural and pastoral land. Furthermore, the country's harvestable timber resources are almost exhausted. Hence, to increase forest cover and ensure increased supply of timber, the Sawlog Production Grant Scheme (SPGS) and other licensing measures including charging economic rents for timber were introduced. SPGS funded by European Union supports private sector development of large forest plantations.

c) Rangeland resources and livestock production

Rangelands, mostly found in the 'cattle corridor' occupy 107,000 km^2 or 44% of the country's land area. In some places, the conditions of the rangelands are deplorably over- grazed or, and through wind and soil erosion, bare. The rangelands are also located in arid and semi-arid areas, themselves fragile ecosystems. In the extreme, pasture and water scarcities are contributing to frequent conflicts between cultivators and pastoralist in the first place, and among pastoralists themselves. The number of cattle, goats and sheep is on the increase and hence there is need to pay attention to the carrying capacity of Uganda's rangelands.

d) Wildlife resources

There cases where ICT infrastructure may be laid or erected in Protected Areas either to serve these locations or because they are along way routes of the infrastructure. Wildlife constitutes an important resource base for the country as a source of recreation/ tourism revenue, nature studies and scientific research. By 1994, wildlife populations whether inside or outside protected areas represented a small fraction of what they were in the 1960s, with some species such as both the black and the white rhino becoming extinct. By 2004, the populations of wildlife in protected areas had stabilized, and some even increased, although marginally. Outside protected areas, the decline in wildlife population continues as a result of increased hunting, blocking migratory routes and habitat conversions, among others. The Uganda Wildlife Authority is piloting the conservation of wildlife populations outside protected areas through measures such as the operationalization of the different classes of wildlife use right provided for in the Wildlife Act.

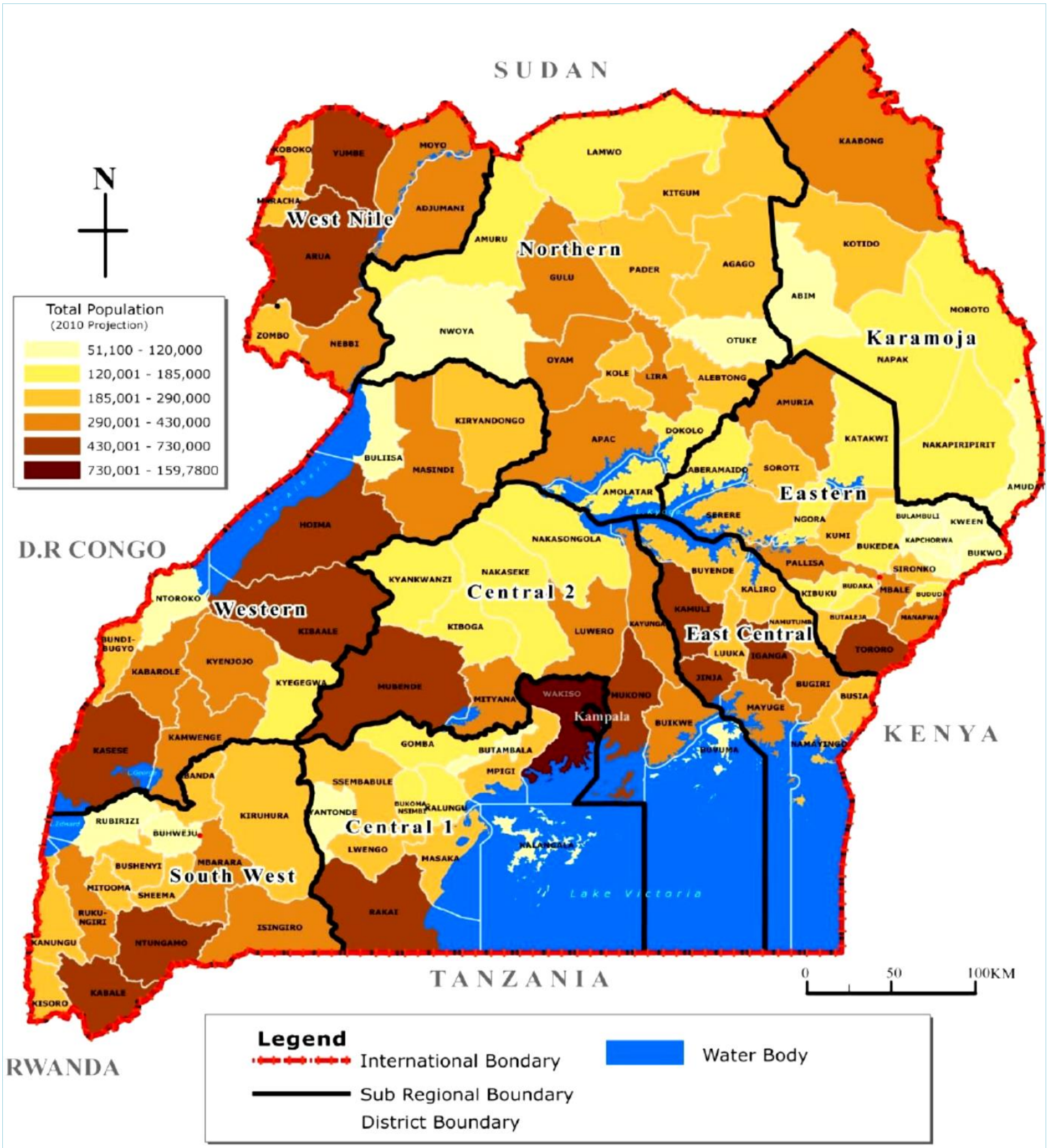


Figure 4: Population distribution in Uganda

4.5.3. Aquatic Resources

a) Wetlands

Wetlands cover about 13% of the area of Uganda and provide direct and indirect values. Up to late 1980s, wetlands were generally considered 'wastelands' to be reclaimed for agriculture in rural areas, 'drained' as anti-malaria measures or industrial areas in urban settings. By 1994, the need for conservation was realized and the process of formulating an appropriate policy on wetlands was initiated. By 2001, wetlands came to be regarded as 'granaries of water'. From being a program in 1994, wetlands had by 2005 obtained an institutional home within government structure. Wetlands are now better known with detailed information up to the district level. The 56 districts then existing by 2004 all had District Wetland Action Plans and some communities in a few districts have gone ahead and prepared Community Wetlands Action Plans. Despite such an impressive achievement, the implementation of the various action plans is constrained by lack of resources. Furthermore, despite a wide array of achievements, wetlands, degradation is still evident- some for basic survival needs of the poor, others as a saving measure where land purchase prices are high, and yet others are the result of ignorance about ownership and legal boundaries of wetlands.

There are presently 12 sites designated as Wetlands of International Importance, with a surface area of 454,303 ha (Table 4-2). Much as the sites are well known for their bird life, they are also vital habitat for other threatened plants and animals. Construction through such sites cold temporary affect visitor experience of tourists.

Table 4-2: Ramsar Sites in Uganda

Ramsar site name	Major features
Lake Bisina wetland system	This wetland is an important Bird area, located in Kumi, Katakwi and Soroti districts. The wetland is a shallow freshwater lake with a thin strip of fringing papyrus swamp. The shallow areas are dominated by water lilies which is important for its diversity of macrophytes. It is used as a feeding ground by wading birds, including the globally vulnerable Shoebill (*Balaeniceps rex*). The system is also important as a refuge for fish species that have gone extinct in the main Ugandan lakes. The lake is very important for the surrounding communities in terms of fishing, transport, and supply of water for domestic use and livestock.
Lake Mburo Nakivali wetland system	This is a system of open and wooded savanna, seasonal and permanent wetlands, and five lakes, of which Lake Mburo is a part. It is a unique habitat, lying at the convergence of two biological zones, giving it very high biodiversity. It supports globally threatened species of birds such as the Papyrus Yellow Warbler and Shoebill, and provides refuge to 22 species of Palaearctic and Afrotropical migrant birds during adverse conditions. It supports two of the endangered cichlid fish species which have gone extinct in the main lakes, and it is the only area in Uganda in which the Impala is found.
Lake Nakuwa wetland system	A permanent wetland associated with a number of satellite lakes and a swamp system dominated by dense papyrus, broken in parts by pools of water forming sudds (clumps of floating papyrus). In addition to supporting the Sitatunga and the Nile Crocodile, the system and its satellite lakes contain the most diverse cichlid species assemblage and are a haven for a number of noncichlid species no longer found in the large lakes of Kyoga and Victoria. The wetland also plays an important role in flood prevention, water purification and groundwater recharge. It is probably one of the remaining pristine wetland areas in Uganda due to its remoteness and sparse population in the immediate catchment, and it offers employment to a number of fishermen.
Lake Opeta wetland system	This Ramsar site is found in eastern Uganda, It is an important bird area and one of the remaining intact and probably most important wetland marshes in Uganda. It is predominantly an extensive swamp of Vossia cuspidata to the east and south graduating into dry Hyparrhenia grassland savannas. The wetland is of great importance for the conservation of birds, and Fox's weaver, Uganda's only endemic bird has been recorded in the swamp breeding. The site is also important as a refuge

Ramsar site name	Major features
	for fish species that have gone extinct in the main lakes, including Lakes Victoria and Kyoga.
Lutembe Bay wetland system	Lutembe Bay is an Important Bird Area. Situated at the mouth of Lake Victoria's Murchison Bay, this shallow area is almost completely cut off from the main body of Lake Victoria by a *C.papyrus* island. The site supports globally threatened species of birds, endangered Cichlid fish, and over 100 butterfly species, including three rare ones. It is a breeding ground for Clarias and lungfish, and regularly supports more than 52% of the Whitewinged Black Terns (*Chlidonias leucopterus*) population.
Mabamba Bay wetland system	Mabamba is an extensive marsh stretching through a narrow and long bay fringed with papyrus towards the main body of Lake Victoria the only swamp close to Kampala where one can easily find the globally threatened Shoebill (*Balaeniceps rex*). The site supports an average of close to 190,000 birds and is part of the wetland system which hosts approximately 38% of the global population of the Blue Swallow (*Hirundo atrocaerulea*), as well as the globally threatened Papyrus Yellow Warbler and other birds of global conservation concern.
Murchison Falls Albert Delta wetland system	The site stretches from the top of Murchison Falls, where the River Nile flows through a rock cleft some 6m wide, to the delta at its confluence with Lake Albert. The convergence between Lake Albert and the delta forms a shallow area that is important for water birds, especially the Shoebill, Pelicans, Darters and various heron species. The delta is an important spawning and breeding ground for Lake Albert fisheries, containing indigenous fish species; the rest of the site is dominated by rolling savannas and tall grass with increasingly thick bush, woodlands and forest patches in the higher and wetter areas to the south and east. It forms a feeding and watering refuge for wildlife in the Murchison falls National Park during dry seasons.
Nabajjuzi wetland system	Nabajjuzi is a long narrow stretch of swamp from the periphery of Masaka to Katonga River system. It provides a spawning ground for mudfish and lungfish, and supports globally threatened bird species and the endangered Sitatunga. The site lies in traditional Buddu county of Buganda Kingdom, and some of the flora and fauna are closely associated with cultural norms and traditions, especially the totems. There is thus considerable cultural attachment of the surrounding areas to the wetland, which also plays an important role in stabilizing the banks of River Nabajjuzi, groundwater recharge, and flood control and as a natural filter for silt and sediments in the runoff.
Sango Bay Musambwa Island Kagera wetland system (SAMUKA)	A mosaic of wetland types including the biggest tract of swamp forest in Uganda, papyrus swamps, herbaceous swamps interspersed with palms and seasonally flooded grasslands, sandy, rocky and forest shores, and three rocky islets about 3 km offshore in the Sango Bay. The area lies in the transition between the East and West African vegetation zones and this bio-geographical ecotone makes it biodiversity rich. The system supports huge congregations of waterbirds, hosting an average of 16.5% of the population of Grey headed Gulls (Larus cirrocephalus), and hosts globally endangered mammals such as Elephant, Black and White Colobus Monkey and a subspecies of the Blue Monkey.
Rwenzori Mountains Ramsar Site	This site covers 99,500 ha; and it is Within Mt. Rwenzori protected area which is World Heritage Site. The entire Afro-alpine ecosystem (between 1,600 and 5,100 masl) is unique with the contribution of high rainfall and the melting of snow from the peaks, various wetland types are present such as peatlands, freshwater lakes, and tundra, amongst others. The mountains are known to support 21 species of small mammals, including the endemic and vulnerable Rwenzori Shrew. Other species of global conservation concern include L'Hoest's monkey, Horseshoe bat, and Rockefeller's Sunbird. With the distribution of fish varying with altitude, several indigenous fish species are found within the site, with the most common Cyprinid species including Varicorhinus rwenzorii.
Lake George	This site has a complex of river systems emanating from the Rwenzori Mountains

Ramsar site name	Major features
	supplying a system of permanent swamps located on Lake George, in the Rift Valley. Vegetation consists of grassland, woodland, and three major swamp types. The site supports large mammals, including elephants, hippopotamus, and antelope, and is important for numerous species of wintering Palearctic water birds and various notable resident birds.
Lake Nabugabo wetland system	The site is located in Masaka district and it is approximately 22,000 ha. It is shallow freshwater lake 8.2km long by 5km wide, with three smaller lakes, separated from Lake Victoria by a sand bar. The lakes are an important migratory stopover-destination for migratory bird species - at times during the year, the site (listed as an Important Bird Area) holds more than 15% of the world's population of the Blue Swallow and support five globally threatened and near-threatened birds: Blue Swallow Hirundo atrocaerulea, Shoe Bill *Balaeniceps rex*, Great Snipe Gallinago media, Pallied Harrier Circus macrourus, and the Papyrus Gonolek Laniarius mufumbi. The system supports a high diversity of plant species, including insectivores of the family Droseraceae.

It was noted from stakeholder consultations that Wetlands management Department (WMD) has developed a policy that required infrastructure to be erected on bridges to avoid filling swamps wherever such infrastructure is to be constructed across a wetland.

b) Water

Water is life, and Uganda has significant quantities of the resource. From both hydrological and social water scarcity considerations at the moment, Uganda is not water stressed. However, by 2025, indications are that there will be reason to worry as a result of increasing demands for human, livestock, wildlife, irrigation and industrial water. Uganda is ranked in a group of countries that must plan to secure more than twice the amount of water they used in 1998 in order to meet reasonable future requirements. The quality of the water from available sources is another area of concern principally as a result of pollution – residential, industrial and agricultural land discharges into the open water bodies. To some extent the buffering capacity of wetlands is making a contribution towards reductions in pollution, but this will continue only if the integrity of the wetlands can be sustained.

Water resources are under increasing threat of degradation as exhibited in reduced quality and quantity in the major freshwater bodies. Soil erosion and industrial pollution have reduced surface water quality. Watershed degradation and climate change also reduce surface and ground water quantities. The major drivers of reduced water quality and quantity are encroachment on water catchments, increased water abstraction for domestic, industrial, infrastructure development and production, discharge of effluent into the environment and inadequate sanitation facilities especially among fishing communities (NEMA, 2012).

Relation to the project: *While the proposed ICT infrastructure such as optical fibre cables will be mainly along road reserves, it may pass through or along natural resources such as forests, swamps and wildlife conservation areas. Construction of the infrastructure could therefore pose impacts on these resources in absence of control measures. Construction of project facilities is expected to take small quantities of water and for only the short duration of construction activities.*

4.5.4. Cross-Sectoral Resources

a) Energy

The dominant source of energy in Uganda is biomass and this is expected to remain so in the foreseeable future in spite of plans to increase hydropower energy production. However, the share of clean energy in total consumption is gradually increasing, in part as a result of programs like the Energy for Rural Transformation. Production of energy is being liberalized, attracting an increasing interest among private

investors. The adverse environmental effects of clean production are mitigated through the EIA guidelines for Uganda 1997 and the EIA guidelines for the Energy Sector.

Energy is an essential resource for every economy. The Human Development Report (UNDP 2011) considers energy as central to a range of services supporting human development, ranging from modern medical care, transportation, information and communications, to lighting, heating, cooking and mechanical power for agriculture[7]. At a grid electrification rate of 15%, Uganda has one of the lowest electrification rates in Sub-Saharan Africa. Inadequate access to electricity is a big deterrent to development. It hinders the startup of certain poverty alleviating activities, makes it hard for students to study at night, limits the services health centres can offer, to mention but a few[8].

Grid coverage is important factor determining access to electricity. Grid densification/extension projects, under Rural Electrification Agency, are ongoing in the districts of Masaka, Kiboga, Apac and Soroti, connecting communities and individual institutions on a cost sharing basis. The Rural Electrification component mainly supports institutions and communities located close to high voltage electricity grids.

This low coverage and slow advancement of the national electricity grid can be attributed to, among others, high costs of grid extension, sparse settlement in some areas, low ability of potential consumers to pay and remoteness of most rural villages. There are some efforts to promote clean energy sources such as solar and biogas. Another estimated 1 % of the population uses fuel gensets, car batteries and solar PV systems to achieve a minimum level of electricity supply. Unfortunately, capital investment required is not yet afforded by the rural poor.

Relation to the project: While availability and reliability of power supply will not be a critical need during implementation of the RCIP project, it will be essential for operation of the installed ICT systems.

b) Biodiversity

Uganda is endowed with a very rich and varied biodiversity due to its bio geographical setting, varied altitudinal range and extensive drainage systems. This biodiversity is a national asset supporting rural livelihoods and contributing to commercial economic activities. The contribution of Uganda's biodiversity resources, organisms or parts there-of, population or other biotic components of ecosystems with actual or potential value for humanity has been estimated at $1000 million per year, balanced against economic costs of $ 202 million plus loses to other economic activities of about US$49 million per year. While Uganda continues to lose some of its rich biodiversity, the rate of loss has been reduced somewhat. Reflected in terms of living Uganda's Index, the country out-performs Planet Earth as a whole when Living Planet Index is considered. The loss of biodiversity in protected areas has to a great extent been stopped and the trend reversed between 1990 and 2005. Outside protected areas biodiversity loss was still continuing as of 2005. The loss of biodiversity is largely the result of habitat conversion and introduction of exotic species. Current knowledge of the species present is confined to the more known taxa such as birds, mammals, butterflies, higher plants, reptiles, amphibians and fish because of their relative conspicuousness and economic importance. Table 4-3 shows numbers of species known so far and how much they cover on the global scale.

Table 4-3: Species known to occur in Uganda

Taxon	No. of species	% of global species	No. of globally threatened species
Amphibians	86	1.7	10
Birds	1,012	10.2	15
Butterflies	1,242	6.8	-
Dragon flies	249	4.6	-
Ferns	389	3.2	-
Fish	501	2.0	49

[7] http://www.mbendi.com/indy/powr/af/ug/p0005.htm
[8] http://www.energyprogramme.or.ug/powering-villages/

Flowering plants	4,500	1.1	40
Fungi	420	16	-
Liverworts	275	46	-
Mammals	345	7.5	25
Mollusca	257	0.6	10
Mosses	445	3.5	-
Reptiles	142	1.9	1
Termites	93	3.4	-
Other invertebrates	-	-	17

Source: NEMA 2009

Issues:

Several Ugandan species have qualified to be included on the IUCN Red Data list due to threats such as:

i) **Habitat destruction** as a result of conversion of forests to agriculture land, expansion of urban and industrial centres, and fragmentation;
ii) **Encroachment** on wetlands, forests and water body shores and banks driven by industrial expansion and infrastructure development; and
iii) **Pollution** from the use of agrochemicals, polythene bags, and release of municipal and industrial effluents.

c) Tourism

According to Uganda Tourism Board (UTB), Uganda's tourism earnings have doubled in the last five years from US$440m to $800 m in 2012. Uganda is now ranked top in tourism industry growth in Africa. According to the 2011 tourism review in Africa, Uganda's tourism sector grew by 25% in 2011 while that of South Africa and Tanzania realized growth of 21% and 13.4% respectively. Uganda's tourism growth is attributed to its top tourist destination hubs like Murchison Falls National Park, Queen Elizabeth national park, Bwindi Impenetrable Forest renowned for its Mountain Gorilla Safari activities. Laying optical fibre cables along major tourist roads could disrupt tourist traffic if proper controls are not incorporated in constitution plans.

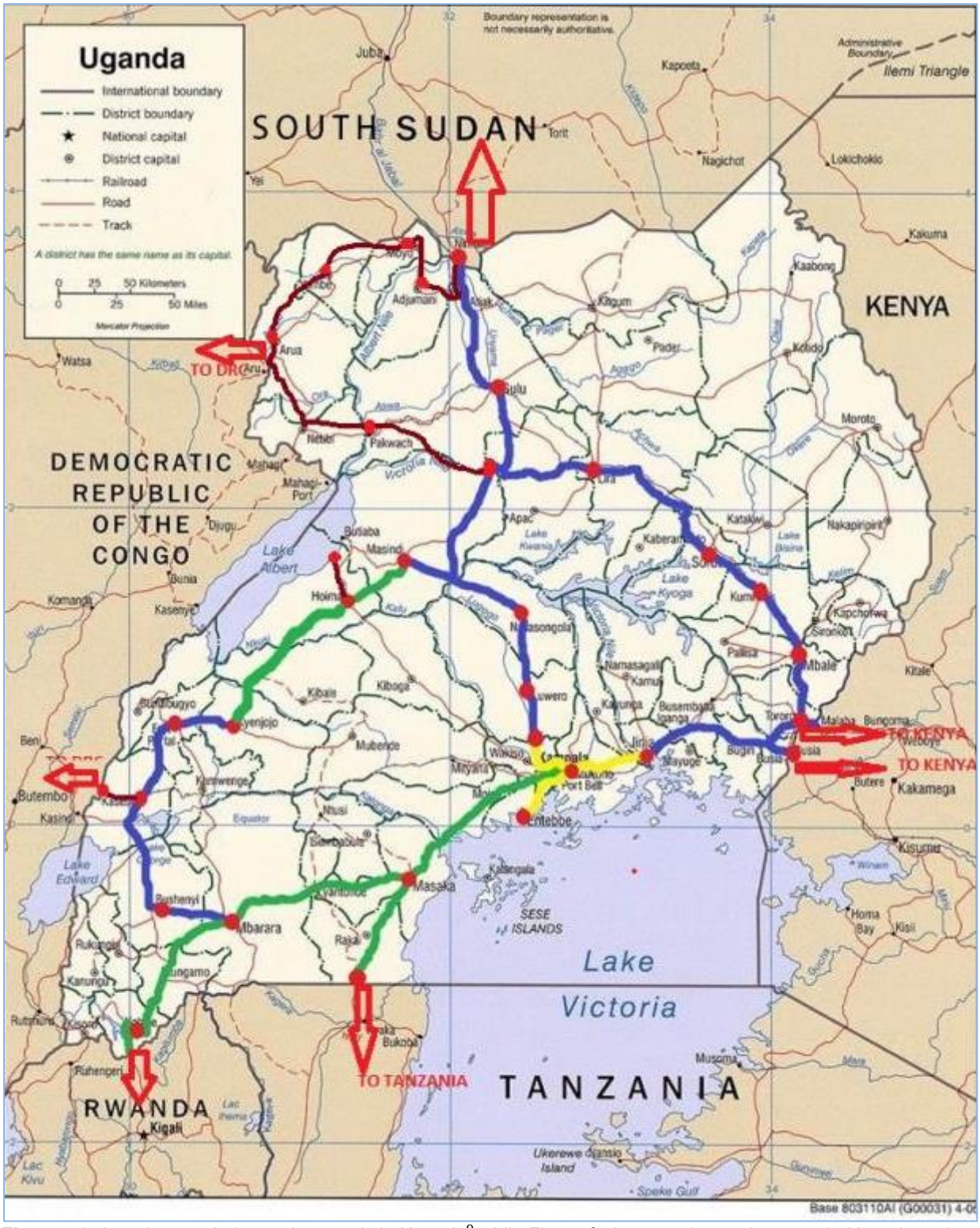


Figure 5 below shows priority tourism roads in Uganda[9] while Figure 6 shows major tourist areas in Uganda and key connecting highways. It is the proposed project infrastructure will be constructed along some of these priority tourism roads.

***Relation to the project**: Biodiversity aspects would apply to the project only in rare situations that optical fibre cables are constructed in or near ecologically-sensitive areas in a way that damages them or endangers wildlife*

[9] World Bank, 2012: Uganda Tourism Sector Situational Assessment.

therein. These include forest reserves, wildlife conservation areas and wetlands (some of which may be Ramsar sites). Construction along major tourist roads could disrupt tourist traffic if proper road safety controls are not instituted.

Figure 5 shows ICT infrastructure will be developed along the following main tourism roads:

- Kampala-Masaka-Mbarara
- Mbarara-Kabale
- Kampala-Masindi
- Masindi-Pakwach (through Murchison Falls National Park)
- Kampala- Jinja
- Masindi-Hoima-Kyenjojo-Fort Portal-Kasese

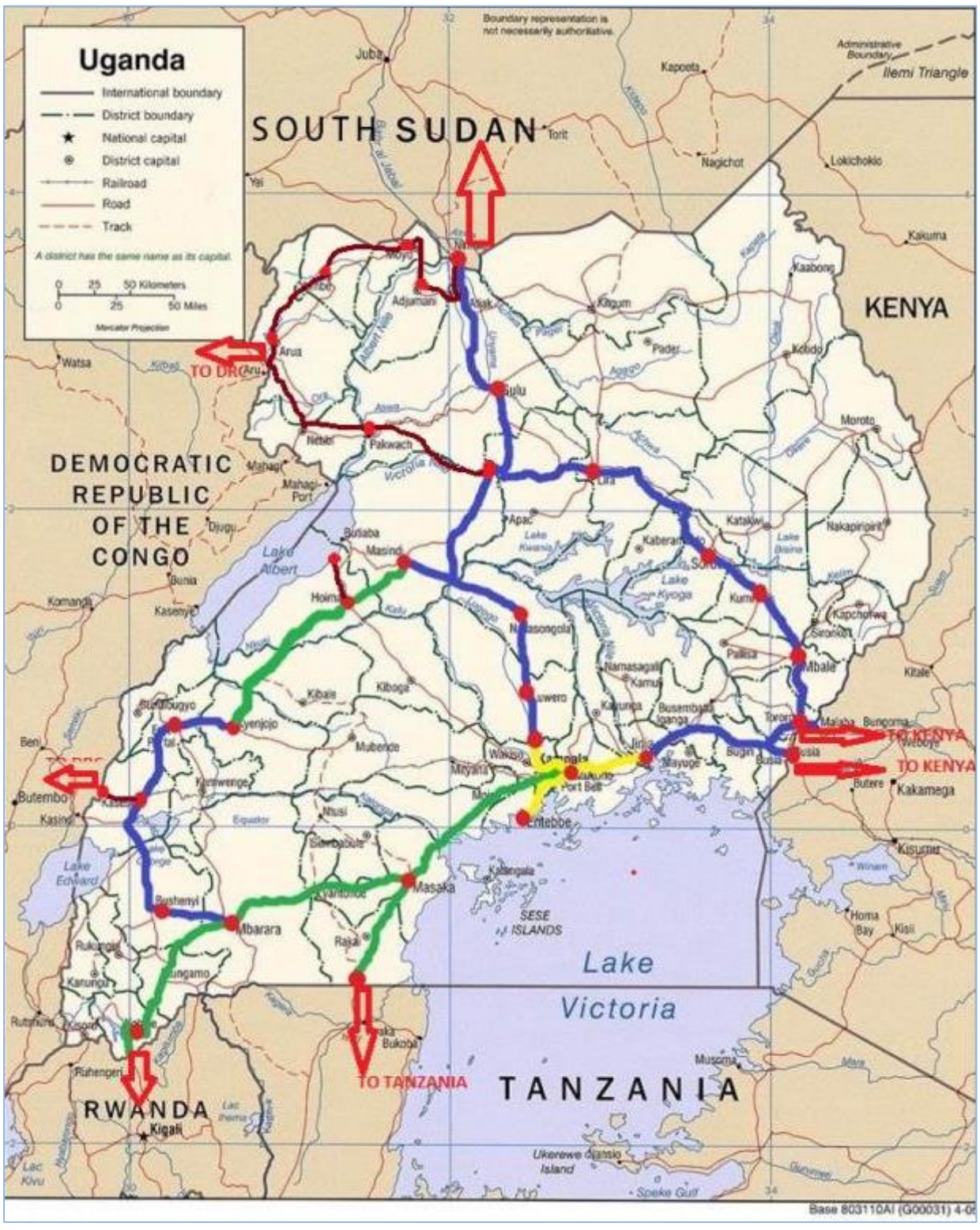


Figure 5: Priority tourism roads in Uganda which will be associated with the proposed project

4.6. Socio-Economic and Cultural Environment

4.6.1. Urbanization

Although Uganda is one of the least urbanized countries in the world in absolute terms, the urban population is growing. Urban population in Uganda increased from less than one million persons in 1980 to about three million in 2002, representing a nearly fourfold increase. However, between 2002 and 2014, the urban population rapidly increased to 6.64 million.

Relation to the project: *Due to land scarcity in urban areas it's increasingly becoming costly to compensate landowners to acquire land for project facilities. This will be reflected in resettlement cost of the project where proposed ICT infrastructure would be constructed on private property.*

It is also noted that urban dwellers are major users of ICT services ranging from telephony, telephone-based banking and money transfers to internet. These would therefore benefit from the proposed project greatly.

4.6.2. Employment

Unemployment Rate in Uganda increased to 4.20 percent in 2010 from 1.90 percent in 2007 (UBOS 2011)[10]. Unemployment remained predominantly an urban problem as the unemployment rate in urban areas is more than three times that of their rural counterparts. The unemployment rate was highest in Kampala (11%) and lowest in Western and Eastern regions (2%) respectively[11]. About 83% of young people have no formal employment (MFPED 2012). Youth unemployment in Uganda is the highest in Sub Saharan Africa. Employment is expected to remain a challenge in the years ahead. Generally, the high youth unemployment rate in Uganda is largely attributed to high population growth rate, slow growth in industrial development, and small formal labour markets, lack of sufficient experience and skills, rural-urban migration, and youth's limited access to resources like capital and land. In addition, the overall existing policies continue focusing on creating job seekers rather than job creators. However, growing sectors of agro processing, tourism and services offer opportunities for youth employment (NEMA, 2012).

Relation to the project: *Uganda is positioning herself to exploit the growing demand for worldwide Business Process Outsourcing (BPO) industry to address the challenge of youth unemployment and this would be enhanced by reliable and widespread ICT infrastructure.*

4.6.3. Safe water and sanitation

Access to safe water and sanitation in both urban and rural areas has increased compared to the situation 10 years ago. For example in 1991, only 11 towns had the services of the National Water and Sewage Cooperation (NWSC) but now the corporation covers 19 towns. By 2004, rural access to safe drinking water had increased to 57% while the urban one was at 67%. If current trends continue, and incremental investment funds are procured, Uganda should meet its Millennium Development Goal on water supply. While safe water access per se has improved, functionality of water points is another key issue.

Relation to the project: *Availability of safe water and sanitation will be important for construction contractors. It is noted safe water availability may be more difficult in the northern, western, eastern regions compared to the central region.*

[10] http://www.tradingeconomics.com/uganda/unemployment-rate
[11] http://www.ubos.org/UNHS0910/chapter4_%20time%20use.html

4.6.4. Environmental pollution: e-waste management

In spite of a national policy on electronic waste, e-waste generated from use of ICT equipment is a growing challenge in Uganda because:

- Enormous increase in ICT usage – high demand of used/second hand products due to prohibitive prices for the new products,
- Little comprehensive data on e-waste
- Lack of e-waste recycling/treatment and disposal facilities,
- Lack of comprehensive awareness on e-waste management,
- Lack of skilled personnel in e-waste.

Currently around 10 computers per 1,000 inhabitants are installed in Uganda of a population of about 34 million people. About 30,000 new and used computers are imported into the country, about 10-20% of which are used. Typically Government and large enterprises replace computers after 3-5 years and often auction them to second-hand use, where a computer is used for another 5-8 years. Imported second-hand computers through professional refurbishment centres have a life span of about 5 years. Based on this numbers it is estimated that over 60,000 computer units reach end of their useful life per year. It is expected that only around 10% of those computers reach the waste stream, whereas the rest of the waste is kept in storage. The 10% in the waste stream get collected by people who salvage parts for second-hand sale and the rest gets dumped informally. It is estimated that Uganda currently has well in excess of 2,000 tons of computer waste. Environmental impact of the processing of different electronic waste components

Table 4-4: Socio-environmental impacts of e-Waste

E-Waste component	Process used	Potential socio-environmental impact
Cathode ray tubes (used in TVs, computer monitors, ATM, video cameras, and more)	Breaking and removal of yoke, then dumping	Lead, barium and other heavy metals leaching into and contamination of groundwater.
Printed circuit boards	De-soldering and removal of computer chips; open burning and acid baths to remove final metals after chips are removed.	Air emissions as well as discharge into rivers of glass dust, tin, lead, brominated dioxin, beryllium cadmium, and mercury. This results into water contamination.
Chips and other gold plated components	Chemical stripping using nitric and hydrochloric acid and burning of chips	Hydrocarbons, heavy metals, brominated substances discharged directly into rivers acidifying fish and flora. Tin and lead contamination of surface and groundwater. Air emissions of brominated dioxins, heavy metals and hydrocarbons. Contamination of water sources has socio-economic and health impacts in especially poor communities relying on untreated water.
Plastics from printers, keyboards, monitors, etc.	Shredding and low temp melting to be reused	Emissions of brominated dioxins, heavy metals and hydrocarbons
Computer wires	Open burning and stripping to remove copper	Hydrocarbon ashes released into air, water and soil. This results into soil, water and air contamination.

Relation to the project: *Absence of formal e-waste management services and facilities mean that the proposed project may in 5 years add a considerable amount of electronic waste to the nation's stock. Since no component will support e-waste management, this challenge will only escalate after project implementation.*

Note: In regard to standards and regulations, NITA-U should be aware of need for environmental standards/guidelines and legislation for e-waste management. Support to develop these standards and regulations should be part of this project, and if not so planned, long-term arrangements for management of e-waste that the project may generate should be included in the budget of this project.

It was also noted from national stakeholder consultations (31 March 2015) that the East African Community member states can jointly access financing from a European Union Fund of €70 million to develop infrastructure for managing e-Waste. It was also revealed that Uganda Communications Commission (UCC) and MICT through a consultant are leading lead in developing e-Waste Guidelines and Regulations for Uganda.

4.6.5. Poverty

A May 2013 Poverty Status Report released by Uganda's Ministry of Finance Planning and Economic Development (MFPED) indicates that poverty levels among Ugandans have continued to decline, a trend that gives hope that the country's economy will continue to grow. According to the study report, the country's poverty levels have been on the downward trend since 1992 except in 2002/03 when a survey indicated that poverty levels had gone up. The number of people who are absolutely poor was 9.9 million (56.4%) in 1992/93 and reduced to 7.4 million (33.8%). In 1999/2000, the number however went up slightly to 9.3 million (38.8%) in 2002/03 but it reduced to 8.5 million (31%) in 2005/06 and to 7.5 million (24.5%) in 2009/10. MFPED attributes the reduction in poverty levels to the reduction in the number of households relying mainly on subsistence agriculture.

Relation to the project: ICT services will enhance information access and this will benefit producers, traders and consumer with the overall effect of poverty reduction in the country.

4.6.6. Health

Key health statistics in Uganda are outlined below[12]:

- In 2011, Uganda Government owned the highest percentage (46%) of hospitals in the country followed by private Not-For-Profit entities at 43% while private For-Profit organizations owned 11%.
- In 2011, polio immunization coverage was 95 % among the children below 5 years of age.
- In 2010/11, there were 34.9 million Out Patients Department (OPD) visits as compared to 36.8 million visits in 2009/10 in government and private Not-For-Profit healthcare facilities.
- Latrine coverage at national level has continued to improve for the last five years, standing at 71 % in 2010/11 from 69 percent in 2009/10.
- Malaria remains the highest cause of both morbidity and mortality among the children below 5 years of age. This is the age at the bottom of the primary school-going children and prevalence is higher in rural areas.

Relation to the project: *ICT in healthcare facilities will improve delivery of medical services, management of medical resources (drugs, vaccines etc) and healthcare records in Uganda. Quick information exchange will enable medical personnel in different regions to take part in certain medical procedures. ICT will improve safety of healthcare services: a common citizen can check licensure of a given drug shop, medical staff or verify prescriptions online.*

[12] UBOS 2012, Statistical Abstract

4.6.7. Cultural heritage

Cultural heritage is part of humanity's link with the world and its past, its achievements and discoveries. The National Environmental Act provides for protection of the country's cultural heritage. About 187 known physical, cultural, historical and para-archaeological sites have been identified and their specific locations recorded in Uganda.

Relation to the project: *This will only be relevant to the proposed project in the unlikely event that construction of ICT infrastructure affects known physical cultural resources or when chance finds encountered are damaged. A protocol to manage chance finds if encountered at any site during project implementation is provided in Annex 5 and known PCRs shall be assessed as part of the specific ESIA and managed in accordance with Management Plans that may be developed*.

4.6.8. Education

Uganda's education system is formal and informal, public and private at all levels. The Universal Primary Education (UPE) was introduced in 1997 and Universal Secondary Education (USE) in 2007 to offer free education at the primary and secondary levels respectively. Education is obtained under two schemes; cost sharing in public institutions and private sponsorship in both public and private institutions at levels. Literacy rates stand at 73% in 2009/2010 (UBOS 2012b) at national level; male literacy rate (79%) and females 66%; Urban areas 88% and rural areas 69%; Kampala 92%, Central region 83% while the Northern region had the lowest (64%) (UBOS, 2011). Technical training institutions lack laboratory equipment to impact practical skills to students.

Relation to the project: *The education sector will greatly benefit from access to ICT services. Technical schools could be able to provide practical on line even if they lack physical laboratory/ workshop equipment.*

4.6.9. ICT access

The total number of internet subscribers increased by 33.6 percent in 2013 and this was due to a 5.1 percent increase in the fixed internet subscribers and a 34.6 percent increase in the mobile internet subscribers. The internet penetration rose from 8.2 percent in 2012 to 20.7 percent in 2013 and this was as a result of an increase in accessibility to the internet which has been brought about by the ease of mobile phones to access the internet.

Other key statistics are:

- Telephone subscribers increased by 10 percent from 16.7 million in 2012 to 18.3 million in 2013.
- The average on-net domestic call rate increased by 38.9 percent from 216 shillings in 2012 to 300 shillings in 2013.
- The total number of mobile money registered customers increased by 151.5 percent from 5.7 million customers in 2012 to 14.2 million customers in 2013.

Relation to the project: *The proposed project will enable faster increase in access to ICT services in the country. The project will also enable improved information management, records storage and security as opposed to current prevalent inadequate safety, low security and limited longevity of records storage as shown in photographs below. e-Procurement is largely non-existent in Uganda so far and the paper-based process is commonly riddled with undue delays, corruption and high cost to bidders. Bidders have to travel long distances to collect requests for proposals, deliver bids and view evaluation results pinned on noticeboards.*

Photographs below show some cases of baseline conditions and effects of low access to ICT, especially in regard to improper document storage. Trenching through swampy sections along highways could affect water sources if contamination actually occurred. Temporary disruption of roadside markets is inevitable when laying fibre optic cables in road reserves.

Photo 1: File storage (left) in Procurement Office at Mbarara District Headquarters

Photo 2: e-Waste in storage at Mbarara District headquarters

Photo 3: Trenching can damage private property and crops (case of Corner–Kamudini along Gulu road)

Photo 4: A computer room at Kibingo Core Teacher Training Collage.

Photo 5: A market at Kabale-Bugonzi along Kampala-Masaka Highway that could be temporarily displaced or disrupted by laying fibre optical cables in road reserves

Photo 6: Records storage at Hoima District Headquarters prone to high loss and damage risk

Photo 7: Records storage at Hoima Hospital. Loss and damage would be avoided by electronic storage

Photo 8: Nabajjuzi wetland is a source of water supply for Masaka Municipality. Trenching to lay fibre optic cables through such swamp sections could lead to excessive sediment deposition

5. ADMINISTRATION, POLICY, LEGAL AND REGULATORY FRAMEWORK

This section provides the policy, legislative, and regulatory framework to which the proposed Regional Communication Infrastructure Program for Uganda (RCIP UG) and Telecommunication transmission should comply. National regulations are discussed along with World Bank Safeguards Policies, international conventions to which Uganda is a party. In Uganda key legislations governing the conduct of EIA are the National Environmental Act (Cap 153) and the Environmental Impact Assessment Regulations (1998). The National Environmental Act established National Environment Management Authority (NEMA), and entrusts it with responsibility to ensure compliance with the EIA process in planning and execution of infrastructural projects.

5.1. Policy Framework

5.1.1. The National Environment Management Policy, 1994

The overall goal of this policy is promotion of sustainable economic and social development mindful of the needs of future generations and EIA is one of the vital tools it considers necessary to ensure environmental quality and resource productivity on long-term basis. The policy calls for integration of environmental concerns into development policies, plans and projects at national, district and local levels. Hence, the policy requires that projects likely to have significant adverse ecological or social impacts undertake an EIA before their implementation. This is also reaffirmed in the National Environment Act (Cap 153) that makes EIA a legal requirement for "Third Schedule" projects; according to Uganda's National Environment Act Cap 153.

Interpretation: This policy is relevant to the Project as it requires that an EIA is conducted prior to project implementation.

5.1.2. Information Management Services Policy Draft V.8 2011

The overall goal of the policy is to guide effective use of Information Management Services (IMS) in all Ministries, Departments and Agencies. Its specific objectives include the need to develop an enabling legal framework for IMS to harness the value of information and knowledge held by Government; to build information management and knowledge-sharing culture with Government; to provide for use of common information management standards and secure access, storage and archival within Government; to develop a security framework for IMS; to put in place requisite infrastructure for IMS; to transform Uganda's public service to attain world-class standards in IMS; to provide leadership with modern IMS tools for improved and quicker decision making; to increase budgetary allocations to ICT Initiatives in all MDAs under which IMS will be catered for; to improve the country's global competitiveness; to attract Business Process Outsourcing (BPO) investment into the country; to engage leadership to manage transformation of attitudes and behaviour of personnel; and to put in place an effective communication strategy among others.

Interpretation: This policy is relevant to the Project since it is in support of all its objectives.

5.1.3. Electronic Waste (E-Waste) Management Policy, 2012

The overall goal of the policy is to guide, promote and ensure the safe management of e-waste in Uganda and contribute to reduction of environmental degradation by mitigating pollution arising from use of electric and electronic equipment.

Interpretation: This policy is relevant to the Project in as far as its proposed ICT equipment will generate e-wastes at end of their useful life. In spite of this policy, it is noted that Uganda has little or no technical capability or facilities for management of e-waste.

Note also that NITA-U should be aware of need for environmental standards/guidelines and legislation for e-waste management. Support to develop these standards and regulations should be part of this project, and if not so planned, long-term arrangements for management of e-waste that the project may generate should be included in budget of this project.

5.1.4. National ICT Policy, 2012

The policy's broad goals are to build knowledge-based human capital; promote innovation in economic and social systems; expand ICT infrastructure and its integration throughout the country; deepen utilization of ICT services by government, private sector, not for profit organization and citizenry; enhance research and innovation in ICT products, applications and services; and improve ICT governance and environment in Uganda. The policy recognizes the need to minimal negative environmental and social impacts associated with construction, operation and disposal/de-commissioning activities of ICT infrastructure.

Interpretation: The Project fulfils the broad goals of the policy including expansion of ICT infrastructure throughout the country and increasing utilization of ICT services by government, private sector and citizenry.

5.1.5. Telecommunications Policy, 1996

Uganda's Telecommunications Policy was enacted in 1996 with main objective of increasing penetration of telecommunication services in the country through private sector investment rather than government intervention.

Interpretation: The project will spread opportunities throughout the country for private sector investment in ICT services.

5.1.6. The National Culture Policy, 2006

The National Culture Policy, 2006 complements, promotes and strengthens overall development goals of the country. Its specific objectives include the need to promote and strengthen Uganda's diverse cultural identities and to conserve, protect and promote Uganda's tangible and intangible cultural heritage.

Interpretation: Physical cultural resources may be encountered during project activities such as laying optical fibre cables. This ESMF has provided a Chance Finds Procedure (Annex 5) to ensure protection and conservation of physical cultural resources (PCRs) when encountered during project implementation.

5.1.7. The National Land Use Policy, 2007

The overall policy goal is to achieve sustainable and equitable socio-economic development through optimal land management and utilization in Uganda. The policy recognizes amongst others, the need for protection of minority groups and, ethnic groups on matters of land which are beneficiaries in the RCIP UG.

Interpretation: This policy is relevant to the Project since land use changes may occur in some areas.

Photo 9: Indigenous people in Uganda: *Batwa* people (left) and *Ik* people (right)

5.1.8. Wetlands Policy, 1995

The national policy on conservation and management of wetlands aims at curtailing loss of these resources and ensuring that their benefits are equitably distributed to all people of Uganda. The wetlands policy requires:

- Sustainable use to ensure that benefits of wetlands are maintained for the foreseeable future;
- Environmentally sound management of wetlands to ensure that other aspects of the environment are not adversely affected;
- Equitable distribution of wetland benefits;
- Application of environmental impact assessment procedures on all activities to be carried out in a wetland to ensure that wetland development is well planned and managed.

In order to operationalize the policy and to provide a legal framework for its implementation, wetland related issues have been adequately incorporated into the National Environmental Act, Cap 153.

Interpretation: This policy is relevant to the Project since in several places along major highways, optical fibre cables will be laid in road reserves adjoining wetlands of international ecological importance (for instance Nabajjuzi Wetland on Masaka-Mbarara highway is a Ramsar site).

Photo 10: Nabajjuzi Wetland along Masaka-Mbarara Highway

5.1.9. National Water Policy, 1999

The goal of this policy is to provide guidance on development and management of the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs, with full participation of all stakeholders and mindful of the needs of future generations. The policy aims to:

- Promote rational use of water.
- Control pollution and promote safe storage, treatment and disposal of waste, which could pollute water and impact public health.

Interpretation: This policy will be relevant to the Project for cases where ICT infrastructure will cross watercourses (swamps and rivers) or be constructed in road reserved adjoin wetlands and due care required to avoid contamination. This for example will be along Kampala-Masaka-Mbarara Highway; Jinja-Tororo-Mbale Highway and Mbale-Soroti-Lira Highway which pass through major wetlands.

5.1.10. Wildlife Policy, 1999

This policy aims to conserve in perpetuity the rich biological diversity and natural habitats of Uganda in a manner that accommodates national development needs, well-being of its people and the global community. It also recognizes poaching as a major challenge to conserving wildlife in Uganda.

Interpretation: This policy is relevant if construction workers carry out illegal activities such as poaching in conservation areas along highways where optical fibre cables will be laid. Conservation areas for example include Murchison Falls National Park through which Karuma-Pakwach Highway passes, Lake Mburo National Park along Masaka-Mbarara Highway and Queen Elizabeth National Park along Bushenyi-Kasese Highway.

5.1.11. The Forestry Policy, 2001

The forestry policy puts an emphasis on ecological and socio-economic importance of protecting the country's forest resources. Implementation of the Policy is a responsibility of the National Forestry Authority (NFA), which also provides guidelines for management of forest reserves, community forests and private forests. The Forest Policy entails provisions for safeguard and conservation of forests so as to ensure sufficient supplies of forest products, protect water resources in watersheds, soils, fauna and flora. The policy also mandates government with responsibility to control unsustainable forest exploitation practices.

Interpretation: Some major highways along which ICT infrastructure (optical fibre cables) will be laid pass through major forests, e.g. Mabira Forest along Jinja Highway. Construction activities may affect these forest resources.

Photo 11: Mabira Forest along Jinja Highway

5.1.12. National Gender Policy, 1997

The overall goal of this policy is to mainstream gender issues in the national development process in order to improve the social, legal/civic, political, economic and cultural conditions of the people of Uganda, particularly women. Thus, in the context of infrastructure development, this policy aims to redress imbalances which arise from existing gender inequalities and promotes participation of both women and men in all stages of the project cycle, equal access to, and control over significant economic resources and benefits.

Interpretation: This policy would especially apply to recruitment of construction labour for RCIP UG activities where women should ideally have equal opportunity as men for available jobs. It is also noted that women predominate or are significantly involved in roadside markets selling fruits, vegetables, art and craft along most highways in Uganda. Disruption of their businesses when laying optical fibre cables would notably affect incomes of women traders.

Photo 12: A roadside fruits and vegetable market along Masaka Highway predominated by women traders

5.1.13. HIV/AIDS Policy, 1992

In Uganda current effort to combat HIV/AIDS is characterized by a policy of openness by Government and this has, to a large extent, been emulated by civil society, political and social institutions, and workplaces. HIV/AIDS is recognized by Ministry of Health as a considerable risk in construction of infrastructure projects and it (together with the ministry responsible for labour) encourages employers to develop in-house HIV/AIDS policies, provide awareness and prevention measures to workers and avoid discriminating against workers or living with or affected by HIV/AIDS. To ensure HIV/AIDS is addressed in the workplace, the policy encourages employee awareness and education on HIV/AIDS. It is anticipated that during construction phase, interactions among workforce and between local communities may result into sexual fraternization and a risk of HIV/AIDS spread. The policy also guides about HIV/AIDS management including awareness and provision of condoms in workplaces.

Interpretation: The requirements of this policy are expected to be fulfilled by the RCIP UG construction contractors, especially in regard to having an in-house HIV Policy, worker sensitization and provision of free condoms and controlling prostitution and irresponsible sexual fraternization during construction.

5.1.14. Occupational Health and Safety (OHS) Policy

This policy seeks to:

- Provide and maintain a healthy working environment
- Institutionalize OHS in the power-sector policies, programs and plans
- Contribute towards safeguarding the physical environment

The OHS Policy Statement is guided by the Constitution of the Republic of Uganda and other global, national and sectorial regulations and policies. The OHS Policy also takes into recognition of the Energy Policy and the Health Sector Strategic Plan, all of which aim to improve the quality of life for all Ugandans in their living and working environment.

Interpretation: This policy will be relevant for OHS of RCIP UG construction crews and subsequently, maintenance personnel. The policy will also have relevance in mitigation measures that protect the public from health and safety impacts as a result of project construction, subsequent operation and maintenance activities.

5.1.15. National Development Plan, 2010

In 2010, Government of Uganda finalized a new five-year National Development Plan (NDP) spanning FY2011-2015 and this took from achievements of the *Poverty Eradication Action Plan* (PEAP) that was being implemented up to 2008. The NDP's main theme is "Growth, Employment and Socio-Economic Transformation for Prosperity," marking a broadening of the country's development strategy from poverty reduction to structural transformation with the aim to raise growth and living standards. The NDP 2010/11-2014/15 is the first in a series of six plans intended to transform Uganda over 30 years into a modern and prosperous nation.

The NDP recognizes ICT as one of the Primary Growth Sectors, therefore included ICT among the investment priorities and national core projects *(see NDP Sec, 152 p 50);* suggested improving the ICT infrastructure through extension of the national optical fibre cable to cover most of the districts with emphasis placed on promotion and operationalization of Business Process Outsourcing (BPO), e-government and e-procurement services. However, development of the ICT sector is constrained by;

a. Infrastructure gaps in the delivery of broadband;
b. High dependence on satellite bandwidth for provision of internet service;
c. High cost of IT equipment and software;
d. Limited access to the electricity grid in most parts of the country;

e. High usage taxes in ICT sector ;
f. General low income levels especially in the rural areas;
g. Low ICT integration in Government as well as business processes resulting in low demand for internet due to lack of sufficient IT skills at managerial level;
h. Large illiterate consumer mass unaware of its rights, benefits and opportunities;
i. Expensive internet connectivity costs due to limited connectivity to submarine cable system;
j. Low levels of awareness by the public on the role IT can play in social and economic transformation;
k. Lack of IT skills and knowledge by the population especially in rural area;
l. Increase in cybercrime (electronic fraud, computer misuse and growing insecurity in the use of IT equipment and software;
m. Insufficient local content;
n. Lack of relevant IT business-driven applications;
o. Lack of appropriate legal and regulatory framework for the IT sub-sector; and
p. Lack of standards in hardware manufacturing and software development.

To improve and develop ICT sector, NDP devised five strategies below:

Strategy 1 *(see NDP Sec 327, p128):* Develop ICT infrastructure;

i) Roll out national fibre optic cables to cover all districts;
ii) Construct Information Technology (IT) Business Parks; and
iii) Support Public Private Partnership (PPP) arrangements to extend fibre optic cable to production centres and institutions

Strategy 2 *(see NDP Sec 328, p128):* Promote the use of ICT in business and service operations (e-commerce and e-government);

i) Enact and operationalize cyber laws;
ii) Popularize Tele-Business Information centres and payphone services;
iii) Increase the computerization of service delivery functions in Government;
iv) Develop relevant local internet content and translation in local languages for business, and science and technology; and
v) Collect, preserve and disseminate documented for present and future use.

Strategy 3 *(see NDP Sec 328, p128):* Build competent human resource capacity in the sector;

i) Provide requisite ICT skills;
ii) Accredit ICT courses and training institutions; and
iii) Incorporate ICT into education curricula.

Strategy 4 *(see NDP Sec 328, p129)*: Develop and implement a policy, legal and regulatory framework for systematic sector development;

i) Make operational cyber laws to facilitate e-commerce

Strategy 5 *(see NDP Sec 328, p129)*: Promote utilization of ICT as a business

i) Support Business Process Outsourcing (BPO) services;
ii) Support the initial operations of the Information Technology (IT) Business Parks; and
iii) Promote hardware assemble and software development as an investment opportunity to potential local and foreign investors

Interpretation: Implementation of the RCIP UG is in line with the ICT sector development strategies of the NDP 2010/11- 2014/15.

5.1.16. Uganda's Vision 2040

In 'Vision 2040' Ugandan sets goals to achieve by the year 2040 ranging from political, economic, social, energy, and environment. With respect to environmental goals, Ugandans aspired to have a green economy and clean environment where the ecosystem is sustainably managed and the liveability of the urban systems greatly improved (*16 f)*, world class infrastructure and services, and modern technology to improve productivity and production. Ugandans also aspire to have access to clean, affordable and reliable energy sources to facilitate industrialization (*16 e.)* and to be resourceful and prosperous nationals contributing to national development through gainful employment, savings and investments.

Vision 2040 recognizes strengthening of ICT and ICT Enabled Services (ITES) industry as one of the opportunities that will harness faster socio-economic transformation from a peasantry to an innovative and competitive society through job creation, accelerated economic growth and significantly increased productivity.

Interpretation: The Vision 2040 recognizes the importance of ICT in national economic development. The proposed RCIP UG is in line with aspirations of Vision 2040.

5.1.17. National Policy on Disability in Uganda, 2006

Government through the Ministry of Gender, Labour and Social Development has a mandate to promote and protect the rights of persons with disabilities (PWDs). The Government is mandated to promote and protect the rights of persons with disabilities and the Constitution of the Republic of Uganda stipulates the need to empower and provide equal opportunities to PWDs. Government has focused on provision of health services, community based rehabilitation, vocational training, Universal Primary Education as key measures to empower PWDs. This policy on disability will contribute to the improvement of the quality of life of People with Disabilities (PWDs) through expanding the scope of interventions. The interventions will necessitate PWDs themselves to participate in designing, managing, monitoring and evaluating initiatives that are meant to improve their well-being. It will also ensure that the central government, local authorities, provide for needs of PWDs.

Interpretation: The proposed RCIP UG should provide for needs of persons with disabilities in terms of access and use of ICT facilities.

5.1.18. World Bank Safeguards Policies

The World Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. Environmental Assessment is one of the 10 environmental and social Safeguard Policies that WBG uses to examine potential environmental risks and benefits associated with Bank lending operations. The Bank's Environmental Assessment policy and procedures are described in Operational Policy/Bank Procedures - OP/BP 4.01.

Detailed advice and guidance on the conduct of environmental assessment is provided publicly by the World Bank in its Environmental Sourcebook and updates[13]. During project preparation, the World Bank examines relation of the proposed project with policies below:

i) Environmental Assessment;
ii) Natural Habitats ;
iii) Forests;

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(13) http://lnweb18.worldbank.org/ESSD/envext.nsf/47ByDocName/ToolsEnvironmentalAssessmentSourcebookand Updates

iv) Pest Management;
v) Physical Cultural Resources;
vi) Indigenous Peoples;
vii) Involuntary Resettlement;
viii) Safety of Dams;
ix) Projects on International Waters;
x) Projects in Disputed Areas.

From the nature of proposed project, policies likely to be affected by the project are discussed in table below.

Table 5-1: World Bank policies showing their trigger status by the project

Safeguard Policies	Triggered?		Reason
	Yes	No	
OP 4.01 Environmental Assessment	♦		OP/BP 4.01 is triggered because the project will entail civil works (e.g. construction of base stations and trenches for optical fibre cables). In all districts of Uganda (project Area) trenching to for the cables and for selected districts construction of base stations is planned. Construction of base stations will require materials such as sand, aggregates, cement and timber among others and use of water. Project construction and operation phases will generate waste. Management measures of materials source and transportation, and waste generated will be guided in the ESMF and ESMPs. All the structures to be constructed and trenching shall follow national construction standards, including gender and disability requirements. RCIP 5 is assigned to Environmental Assessment category B due to the project's site specific and easily manageable impacts. An ESMF that sets forth the basic environmental principles and guidelines to be followed during project implementation has been prepared in a consultative manner. The ESMF will be reviewed by the World Bank and publicly disclosed both in-country and at InfoShop prior to Project appraisal. During project implementation, ESIAs and/or ESMPs shall be prepared where applicable before start of any civil works.
OP 4.04 Natural Habitats	♦		The project may cross natural habitats such as forests, wetlands, rivers and wildlife conservation areas. Assessment and mitigation of any likely impacts on natural habitats has been covered under the project ESMF.
OP 4.09 Pest Management		♦	Not to be triggered because the project will not involve procurement and/or use of pesticides.
OP 4.11 Physical Cultural	♦		This is triggered because project investments

Safeguard Policies	Triggered?		Reason
	Yes	No	
Resources			involve civil works and may encounter known or chance finds (unknown Physical Cultural Resources). The project ESMF has included a chance finds management procedure (Annex 5) but any subsequent ESIAs to be undertaken for any component or facility of this project will include Physical Cultural Resources investigation, assessment and management measures.
OP 4.12 Involuntary Resettlement	♦		The project will involve construction of Base Stations which may require land for siting. There may be displacement of land uses due to civil works. Therefore, a resettlement policy framework (RPF prepared separately) used under RCIP 5 Uganda project will be applied to this project. The FPF has been prepared in a consultative manner and shall be disclosed both in-country and at infoshop before project Appraisal.
OP 4.10 Indigenous People	♦		This policy has been triggered because some project districts have indigenous peoples: such as *Ik* in Kaabong District, and *Batwa* in Districts of Kisoro, Bundibugyo, Kasese and Kanungu. Therefore, an Indigenous Peoples Planning Framework has been prepared in a consultative manner for this purpose and shall be disclosed both in-country and at Infoshop before Project Appraisal.
OP 4.36 Forests	♦		If optical fibre cables are to be laid along highways, there are major segments that pass through forest reserves. These include Mabira Forest along Jinja Highway. Assessment and mitigation of any likely impacts on forests has been covered under the project ESMF.
OP 4.37 Safety of Dams		♦	The project will not support or depend on dams.
OP 7.50 Projects on International Waterways		♦	The project does not depend or support developments related to International Waterways.
OP 7.60 Projects in Disputed Areas.		♦	The project will not be implemented in disputed areas.

5.2. Legal Framework

5.2.1. Constitution of the Republic of Uganda, 1995

The constitution of Uganda provides for the right to a clean and healthy environment in Article 39 of the Constitution of Uganda, 1995.

Interpretation: Relevance of the Constitution to the project is in the fact that the ESMF is to ensure socio-environmental responsibility of the client during project development and implementation.

5.2.2. The Electronic Signatures Act, 2011

The Electronic Signatures Act makes provision for regulating the use of electronic signatures. Section 18 stipulates that use of electronic signature requires a certificate issued by a licensed certification service provider as an acknowledgement of a digital signature verified by reference to the public key listed in the certificate, regardless of whether words of an express acknowledgement appear with the digital signature and regardless of whether the signer physically appeared before the licensed certification service provider when the digital signature was created.

The Act gives NITA-U the mandate to issue licence to certification service providers and monitor and oversee their activities. Section 21 Controller (NITA-U) (1) The Controller shall, in particular be responsible for monitoring and overseeing the activities of certification service providers and shall perform the functions conferred on the Controller under this Act. (2) The Controller shall exercise its functions under this Act subject to such directions as to the general policy guidelines as may be given by the Minister. (3) The Controller shall maintain a publicly accessible database containing a certification service provider disclosure record for each certification service provider, which shall contain all the particulars required under regulations made under this Act. (4) The Controller shall publish the contents of the database in at least one recognized repository.

Interpretation: This Act will be especially relevant for development of Shared Public Service Delivery Platform infrastructure.

5.2.3. Computer Misuse Act, 2010

The Computer Misuse Act makes provision for the safety and security of electronic transactions and information systems. The Act prevents unlawful access, abuse or misuse of information systems by including computers (and electronic devices like mobile phones) and makes provision for securing the conduct of electronic transactions in a trustworthy electronic environment and to provide for other related matters.

Interpretation: This Act will be especially relevant for development of e-Government Applications infrastructure.

5.2.4. The Electronic Transaction Act 2000

The Electronic Transactions Act provides for the use, security, facilitation and regulation of electronic communications and transactions and encourages the use of e-Government services. It facilitates the development of e-commerce in Uganda by broadly removing existing legal impediments that may prevent a person from transacting electronically because of omission in the traditional laws and encouraging investment and innovation in information communications and technology.

Interpretation: This Act will be especially relevant for development of e-Government Applications infrastructure.

5.2.5. Copyright and Neighboring Rights Act, 2006

The Act provides that no person of any kind shall produce, reproduce, distribute, broadcast, make available to the public, sale or offer for sale, lease or rent out or make public performances or import for distribution of audio visual recordings in Uganda except under a licence issued by the owner of the neighboring rights or a Collecting society.

Interpretation: This Act will be especially relevant for development of Shared Public Service Delivery Platform and E-Government Applications infrastructure.

5.2.6. The Children's Act, Cap. 59

The Act provides that children shall not be subjected to social or customary practices which are harmful to their health or employed or engaged in activities which may endanger their health, education, mental, physical or moral development.

Interpretation: This Act will be especially relevant during development and operation of RCIP supported facilities. Infrastructure should be put in place to censure information content accessible to children.

5.2.7. The Uganda Communications Act, Cap 106

The main objective of this Act is to develop a modern communications sector and infrastructure.

Section 43: Power of operator to use land; (3) An operator shall do as little damage as possible to the land and to the environment and shall pay fair and adequate compensation to all interested persons for any damage or loss sustained by reason of the exercise of the powers under this section.

Interpretation: This Act is relevant for development of modern communication infrastructure and compensation of owners / entities for any damage or loss sustained by reason of exercise of the powers provided under this Act.

5.2.8. National Environment Act, Cap 153

The specific legislation that deals with environmental impact assessments (EIA) in Uganda is the National Environment Act (NEA), Cap 153. NEMA was created under NEA and mandated with the responsibility to oversee, coordinate and supervise environmental management activities in Uganda. Third Schedule of the National Environment Act, Cap 153, 1 *general (a), (b), (c)* requires the under listed project categories to undertake an EIA (Annex 1 A).

The Act provides for various strategies and tools for environment management, which also include EIA (Section 19) for projects likely to have significant impacts on the environment. NEMA sets multimedia environmental standards (Sections 24-32) to prevent contamination of air, water and soil resources. Section 36 entrusts NEMA, lead agencies and the district environment committee with powers to protect quality of watercourses, permanent or seasonal from human activities that could adversely affect them. Section 56 prohibits discharge of hazardous substances like chemicals, oil, etc into the environment except in accordance with guidelines prescribed by NEMA. NEMA will also be responsible for approval of the project EIA and prescribing compliance conditions during project implementation.

Interpretation: This Act requires an EIA to be conducted for any Third Schedule Project.

5.2.9. Environmental Impact Assessment Regulations, 1998

The regulations require a detailed study to determine possible environmental impacts and mitigation measures. The guidelines require that the EIA process should be participatory engaging the general public and stakeholders in consultations or to inform them and obtain their views about the proposed development during the EIA.

Interpretation: There regulations will guide conduct of EIAs for any ICT facilities to be developed under this project in line with requirements of the National Environment Act.

5.2.10. National Environment (Wetlands, River Banks and Lakeshores management) Regulations, 2000

These regulations provide principles for sustainable use and conservation of wetlands, riverbanks and lakeshores. Relevance of these regulations to the ESMF study is embedded in the following requirements:

- EIA is mandatory for all major activities on riverbanks and lakeshores,
- Measures should be put in place for protection of riverbanks and lakeshores such as prevention of soil erosion, siltation and water pollution.

Interpretation: These regulations will be relevant to the project since optical fibre cables may be laid across a wetland or seasonal streams and marshes hence potential for construction activities to cause soil erosion and sedimentation.

5.2.11. National Environment (Hilly and Mountainous Areas management) Regulations, 2000

Regulation 16(5) requires protection of soil against erosion. Erosion can as result of trenching to enable burial installation of optical fibre cables and construction of site stations.

Interpretation: These regulations are relevant to the Project as implementation may require construction activities on slopes prone to soil erosion due to unstable slopes (slopes > 10%).

5.2.12. National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001

Section 12 of this Act requires compliance with prescribed measures and guidelines for soil conservation for the particular topography, drainage and farming systems, contravention of which constitutes an offence.

Interpretation: The regulations will be relevant in regard to prevention of contamination during construction, operation and decommissioning of project infrastructure. The regulations will apply to construction waste disposal during construction, operation repair and maintenance.

5.2.13. National Environment (Noise Standards and Control) Regulations, 2003

Section 7 of these regulations requires that no person shall emit noise in excess of permissible noise levels, unless permitted by a license issued under these Regulations. Section 8 imparts responsibility onto noise generators to use the best practicable means to ensure that noise does not exceed permissible noise levels. At construction sites corresponding limits are 75 dBA and 65 dBA for day and night time levels respectively[14].

Table 5-2: Regulatory noise limits

Facility	**Noise limits dB (A) (Leq)**	
	Day*	Night*
Construction sites	75	65
Residential areas	55	45
**Time frame: Day 6.00 a.m -10.00 p.m; Night 10.00 p.m. - 6.00 a.m.*		

Source: The National Environment (Noise Standards and Control) Regulations, 2003.

Interpretation: These regulations are relevant to the Project if construction activities generate noise above permitted levels. Also relevant in situations where diesel-powered generators may be used as source of electricity to power ICT equipment, especially when the sites are in or near residential areas.

[14] *Time frame: Day 6.00a.m -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.*

5.2.14. National Environment (Waste Management) Regulations, 1999

These regulations require waste disposal in a way that would not contaminate water, soil, and air or impact public health. According to the regulations, waste haulage and disposal should be done by licensed entities. These Regulations will apply to:

- All categories of hazardous and non-hazardous waste;
- Storage and disposal of construction waste.

Interpretation: The regulations will relate to overall waste management of the project as wastes will be generated by both construction and operation (maintenance activities).

5.2.15. National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999

Section 6 (2) details maximum permissible limits for 54 regulated contaminants, which must not be exceeded before effluent is discharged into water or on land. A few commonly regulated parameters in sewage and wash / oily effluent from a construction site are indicated in table below.

Table 5-3: National discharge standards for selected pollutants

Parameter	National discharge standards
BOD_5 (mg/l)	50
Suspended solids (mg/l)	100
Faucal coliforms	10,000 counts/ 100ml
Chlorine residual (mg/l)	1 mg/l
pH	6-8
Phenols (µg/l)	0.2 mg/l
Oil and grease (mg/l)	10 mg/l
Total Phosphorus (mg/l)	10 mg/l
Temperature	20-35^{o}C

Source: The National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999.

Interpretation: These regulations are particularly important for disposal of effluent and equipment cleaning at construction site.

5.2.16. Draft National Air Quality Standards, 2013

Construction operations will generate dust and exhaust emissions, mainly from motorized equipment. The draft national air quality standards provide the following regulatory limits for various emissions as presented in table below.

Table 5-4: Draft regulatory air quality limits

Pollutant	Averaging time for ambient air	Standard for ambient air
Carbon dioxide (CO_2)	8 hrs	9.0 ppm
Carbon monoxide (CO)	8 hrs	9.0 ppm
Hydrocarbons	24 hrs	5 mgm^{-3}
Nitrogen oxides (NO_x)	24 hrs 1 year arithmetic mean	0.10 ppm
Smoke	Not to exceed 5 minutes in any one hour	Ringlemann Scale No.2 or 40% observed at 6m or more
Soot	24 hrs	500 µg/Nm-3

Pollutant	Averaging time for ambient air	Standard for ambient air
Sulphur dioxide (SO_2)	24 hrs	0.15 ppm
Sulphur trioxide (SO_3)	24 hrs	200 µg/Nm-3

Source: Draft National air quality standards, 2013.
Note: ppm=parts per million, "N' in µg/Nm^{-3} connotes normal atmospheric conditions of pressure and temperature (25^0C and 1 atmosphere).

Interpretation: These standards are relevant considering that project construction will require motorized machinery powered by diesel engines hence generating pollutants such as CO_2, NO_x, SO_x and particulates are expected to be emitted. Dust will also be generated during both trenching and Site station construction and material/ equipment transport.

5.2.17. Uganda Wildlife Act, Cap 200

This Act defines wildlife as any wild plant or animal of a species native to Uganda. The Act entrusts ownership of wild animals and plants with the government for the benefit of Ugandan people, a responsibility executed by Uganda Wildlife Authority (UWA). Sections of the Act specifically dealing with the project development activities include:

> **Section 15**. Environmental impact assessment; (1) Any developer desiring to undertake any project which may have a significant effect on any wildlife species or community shall undertake an environmental impact assessment in accordance with the National Environment Act, (2) The authority shall perform all the functions required of a lead agency for purposes of an environmental impact assessment under the National Environment Act, and any regulations made under the National Environment Act.
>
> **Section 21.** General offences in wildlife conservation areas: Unless provided for by this Act, any person who in any wildlife conservation area unlawfully; (a) hunts, takes, kills, injures or disturbs any wild plant or animal or any domestic animal; (b) takes, destroys, damages or defaces any object of geomorphological, archaeological, historical, cultural or scientific interest, or any structure lawfully placed or constructed; (c) starts or maintains a fire without lawful authority; commits an offence.

Interpretation: This Act is relevant to the Project as development activities will take place in areas where infrastructure and workers may affect wildlife. A notable requirement of this Act is avoidance of any hunting and poaching either during project construction or its operation (e.g. maintenance of optical fiber cables built through wildlife conservation areas).

5.2.18. The Physical Planning Act, 2011

This Act replaced the Town and Country Planning Act, Cap 246 which was enacted in 1951 and revised in 1964 but is now inconsistent with contemporary government system in Uganda. The 1951 Act was enacted to regulate and operate in a centralized system of governance where physical planning was carried out at national level through the Town and Country Planning Board. Implementation of the Act was supervised by local governments, especially the urban local governments.

Uganda has since gone through many social, political and economic changes. For example, promulgation of the 1995 Constitution established a decentralized system of governance which divulged powers and functions including physical planning, finance and execution of projects from the central government to local governments. This therefore created a need to enact a physical planning legislation which is consistent with this Constitutional requirement. The Physical Planning Act, 2011 establishes district and urban physical planning committees, provides for making and approval of physical development plans and applications for development.

Section 37 of The Physical Planning Act, 2011 requires an EIA permit for developments before they are implemented, stating:

> *"Where a development application related to matters that require an environmental impact assessment, the approving authority may grant preliminary approval subject to the applicant obtaining an EIA certificate in accordance with the National Environment Act".*

Interpretation: Implementation of RCIP UG and associated site station infrastructure e.g. signal booster stations will consider requirement of this Act when prescribed by respective local governments. Local Governments have jurisdiction over areas covered by the project and therefore have regulatory control to ensure that this project conforms to local physical planning requirements.

5.2.19. Public Health Act, Cap 281

This Act provides local authorities with administrative powers to take all *lawful*, *necessary* and *reasonable* measures to prevent the occurrence or deal with any outbreak or prevalence of any infectious communicable or preventable disease and to safeguard and promote the public health. The Act mandates local authorities (Section 103) to prevent pollution of watercourses in interest of public good.

Interpretation: This Act is applicable to onsite management of waste, sewage and domestic waste during construction and or operation of the optical fibre cables and site stations to prevent environmental contamination leading to public health impacts.

5.2.20. Occupational Safety and Health Act, 2006

The Act requires employers to provide and maintain safe working conditions, and to protect workers and the public from risks and dangers of their works, at his or her own cost (Section 13). If an employer has more than 20 workers he should have a written policy with respect to safety and health of workers (Section 14). The act includes as well regulations for clean workplaces and requirements regarding treatment of workers (Section 46). The contractor therefore is obliged to provide employers with washing facilities, First Aid, facilities for meals and safe access to workplaces.

Interpretation: This Act is relevant to the Project as a labour force will be employed during the construction phase. Equally a large number of workers may be employed for operation and maintenance of the communication centre, optical fibre cables and site stations during the operational phase. Occupational safety of all such workers is guided by this Act.

5.2.21. Employment Act, 2006

Employment Act, 2006 (which repeals Employment Act Cap 219 enacted in 2000) is the relevant legislation that harmonizes relationships between employees and employers protect workers interests and welfare and safeguard their occupational health and safety through:

- Prohibiting forced labor, discrimination and sexual harassment at workplaces (Part II; Part IV).
- Providing for labor inspection by the relevant ministry (Part III).
- Stipulating rights and duties in employment including weekly rest, working hours, annual leave, maternity and paternity leaves, sick pay, etc. (Part VI).
- Continuity of employment i.e. continuous service, seasonal employment, etc (Part VIII).

Interpretation: Project construction (and subsequent operation and maintenance), this Act will govern management of labor hired by the contractor (during construction) and the site station (operation phase) in regard to their occupational safety.

5.2.22. Workers' Compensation Act (2000)

Section 28 of The Workers' Compensation Act (2000) states that:

- Where a medical practitioner grants a certificate that a worker is suffering from a scheduled disease causing disablement or that the death of a workman was caused by any scheduled disease; and,
- The disease was due to the nature of the worker's employment and was contracted within 24 months immediately previous to the date of such disablement or death, the worker or, if he or she is deceased, his or her dependants shall be entitled to claim and to receive compensation under this Act as if such disablement or death had been caused by an accident arising out of and in the course of his or her employment.

Interpretation: This Act is relevant to the Project in respect to labour-force will be employed for construction and Operation/Maintenance activities. Any personnel injured on job must be compensated as required by this Act.

5.2.23. Local Governments Act, Cap 243

This Act provides for decentralized governance and devolution of central government functions, powers and services to local governments that have own political and administrative structures. Districts have powers to oversee implementation of development activities under supervision of their relevant departments such as environment, lands and water resources. According to Section 9 of the Act, a local government is the highest political and administrative authority in its area of jurisdiction and shall exercise both legislative and executive powers in accordance with the Constitution.

Interpretation: This Act is relevant to the Project as all District Local Governments covered by the project infrastructure will be beneficiaries and therefore stakeholders with jurisdiction over implementation of the Project. Accordingly, respective District Local Governments will have key responsibilities for environmental monitoring during construction of the project. Specifically the District Environment Officers and District Community Development Officers shall be involved in monitoring implementation of environmental and social aspects of the project.

5.2.24. National Forestry and Tree Planting Act, 2003

This legislation regulates access and use of forest resources in Uganda. Section 38 provides that a person intending to undertake a project or an activity which may, or is likely to have significant impact on forests shall undertake an EIA.

Interpretation: This Act has relevance to the Project if there is impact on forest resources adjoin roads along which optical fiber cables are laid during the construction phase

5.2.25. Petroleum Supply Act, 2003

Over the construction period, the contractor will require considerable fuel (petrol and diesel) supplies for use by motorized equipment and power generators. The Petroleum Supply Act of 2003 provides for supervision and monitoring transportation, supply, storage and distribution of petroleum products. Among other provisions, the Act provides for safety and protection of public health and the environment in petroleum supply operations. According to the Act, fuel storage for construction projects must be licensed.

Interpretation: This Act has relevance to the Project as it requires consideration for safety and protection of public health and the environment in petroleum storage and transfer operations. If contractor retained to construction this project will store fuel on site, they would require a license as required by this Act.

5.2.26. Road Act, Cap 358

The Road Act (Cap 358 of the Laws of Uganda) provides for maintenance of roads by empowering the Minister of Works and Transport and respective local governments. The need for Government to maintain basic control over developments along the road is to ensure that basic necessities of maintaining road geometry and engineering needs such as sight lines, horizontal curvatures, sight distances and road safety considerations are in place. Consequently, town council would have authority over town roads while district roads are governed by district local governments.

Interpretation: Laying of optical fibre cables along and/ or across roads necessitates conformity to requirements of this Act.

5.2.27. Historical and Monuments Act, 1967

This Act provides for preservation and protection of historical monuments and objects of archaeological, palaeontological, ethnographical and traditional interest. The Act prohibits any person from carrying out activities on or in relation to any object declared to be preserved or protected. Section 10 of this Act spells out procedures and requirement to declare "chance finds" that may have archaeological, palaeontological, ethnographical, historical and traditional significance for preservation.

Interpretation: This Act requires that any chance finds encountered during project construction shall be preserved by the Department of Monuments and Museum in the Ministry of Tourism, Wildlife and Antiquities.

5.2.28. International Agreements

Uganda is party to several global and regional environment and conventions and agreements as described below:

- ***The Convention on Biological Diversity (CBD):***

A major objective of which is *in-situ* and *ex-situ* conservation of biological diversity. Parties to this convention are required to undertake ESIA for projects likely to have significant adverse effects on biodiversity and are required to develop national plans and programs for the conservation and sustainable use of biodiversity.

- ***The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):***

This convention seeks to ensure that international trade in species of wild fauna and flora does not threaten their survival in wilderness. Species on the CITES lists are considered of conservation concern. This Convention would be relevant to prevention of poaching of Wildlife in Wildlife Conservation areas imprinted by project activities.

- ***Convention on Wetlands (Ramsar, Iran, 1971):***

The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention uses a broad definition of the types of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peat lands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

Article 3.2: Each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as

the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties specified in Article 8.

Article 4.1: Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their protection.

- ***Protocol Agreement on Conservation of Common Natural Resources (1982):***

Uganda also signed the Protocol Agreement on Conservation of Common Natural Resources (1982). Lake Albert is a common watercourse shared between Uganda and Democratic Republic of Congo (DRC) therefore its protection from contamination during construction of boarder to boarder communication infrastructure between DRC and Uganda.

Interpretation: The laying of optical fiber cables connecting Uganda to neighboring countries will have an obligation to avoid impacts that may violate above conventions in respect to protection of shared resources.

5.3. Institutional Framework

5.3.1. National Environment Management Authority, NEMA

The National Environment Act provides for establishment of NEMA as the principal agency responsible for coordination, monitoring and supervision of environmental conservation activities. NEMA is under the Ministry of Water and Environment (MoWE) but has a cross-sectoral mandate to oversee the conduct of EIA through issuance of EIA guidelines, regulations and registration of practitioners. It reviews and approves environmental impact statements (EIS) in consultation with any relevant lead agencies.

NEMA's enforcement branch is the department of Monitoring and Compliance. They are responsible for ensuring that enterprises comply with the various environmental regulations and standards. NEMA has appointed environmental inspectors whose powers and duties are spelled out in Section 81 of the National Environment Act and can include stopping any activity which pollutes the environment. The environmental inspector may also issue an improvement notice requiring an operator of any activity to cease any activities deleterious to the environment which are contrary to the Act. NEMA has power; to prosecute environmental offenders and offences committed under the National Environment Act and may earn the offender fines and prison sentences. NEMA works with District Environment Offices and Local Environment Committees at local government level, which undertake inspection, monitoring and compliance enforcement on its behalf.

NEMA has adequate capacity to oversee socio-environmental safeguards requirements for this project.

Interpretation: Currently NEMA does not review and approve ESMFs but will approve any project briefs, environment management plans and ESIA reports subsequently prepared for the Project.

5.3.2. Ministry of Information, Communication and Technology, MICT

The Ministry is responsible for the ICT sector, dealing specially with policy formulation, implementation and coordination, and monitoring. Following the field survey and Privatization Strategy the National Information Technology Authority-Uganda (NITA-U) was established to regulate the ICT sector. Thus, while the MICT formulates policy, NITA-U is charged with the mandate of regulating the ICT sector, independent of the Ministry.

MICT currently has no adequate capacity to oversee socio-environmental safeguards requirements for this project.

Interpretation: Project implementation will be coordinated, promoted and monitored by MICT through its agency (NITA-U).

5.3.3. National Information Technology Authority-Uganda (NITA-U)

The National Information Technology Authority-Uganda (NITA-U) is an autonomous statutory body established in accordance with the NITA-U Act 2009 as an agency of the Ministry of Information and Communication Technology (MICT). The mandate of the NITA-U is "To coordinate, promote and monitor Information Technology (IT) developments in Uganda within the context of National Social and Economic development". The main functions of NITA-U include:

i) To provide first level technical support and advice for critical Government information technology systems including managing the utilization of the resources and infrastructure for centralized data centre facilities for large systems through the provision of specialized technical skills;
ii) To identify and advise Government on all matters of information technology development, utilization, usability, accessibility and deployment including networking, systems development, information technology security, training and support;
iii) To co-ordinate, supervise and monitor the utilization of information technology in the public and private sectors.
iv) To regulate and enforce standards for information technology hardware and software equipment procurement in all Government Ministries, departments, agencies and parastatals.
v) To create and manage the national databank, its inputs and outputs.
vi) To set, monitor and regulate standards for information technology planning, acquisition, implementation, delivery, support, organization, sustenance, disposal, risk management, data protection, security and contingency planning.
vii) To regulate the electronic signature infrastructure and other related matters as used in electronic transactions in Uganda.
viii) To promote and provide technical guidance for the establishment of e-Government, e-Commerce and other e-Transactions in Uganda.
ix) In liaison with other relevant institutions, to regulate the information technology profession in Uganda in order to ensure its effective utilization promotion and development.
x) To act as an authentication center for information technology training in Uganda in conjunction with the Ministry responsible for Education.
xi) To provide advice on information technology project management services to Government.
xii) To provide for information management service through acting as a records management facility and an information depository.
xiii) To provide guidance on the establishment of an infrastructure for information sharing by Government and related stakeholders.
xiv) To provide guidance in information technology audit services to Government.
xv) To undertake and commission research as may be necessary to promote the objects of the Authority.
xvi) To arbitrate disputes arising between suppliers of information technology solutions and consumers.
xvii) To protect and promote the interests of consumers or users of information technology services or solutions.
xviii) To undertake any other activity necessary for the implementation of the objects of the Authority

Without in-house social or environmental staff, NITA currently has no adequate capacity to oversee socio-environmental safeguards requirements for this project. The project should therefore consider hiring a Socio-Environmental Safeguards Officer to guide the institution on social, environmental aspects associated with its functions as well as e-waste practices, policies and regulatory requirements.

Interpretation: Implementation of the Project will be by NITA-U which is overseen by MICT. NITA will ensure any subsequent ESIA studies are conducted, obtain required permits, supervise contractors, manage grievances and

monitor socio-environmental impacts of the project from construction through operation and decommissioning (when it comes).

5.3.4. Local Government Administration Structures

The Local Governments Act, Cap 243 provides for decentralized governance and devolution of central government functions, powers and services to local governments that have their own political and administrative structures. Districts have powers to oversee implementation of development activities under supervision of their relevant departments such as environment, lands and roads. District and Local Council administration of project districts would be vital in implementation of the project by mobilizing political goodwill and sensitizing local communities**.** Local administration leaders e.g. District Environmental Officers (DEO) will also play role in environmental monitoring associated with project construction and operation

At every district administration in Uganda is found an Environment Officer (DEO) who functions as a NEMA staff for purposes of overseeing regulatory compliance to Uganda's environmental laws. Many DEOs however lack training and adequate capacity in World Bank safeguards policies. Training to DEOs in World Bank safeguards policies would therefore be necessary for this project.

Interpretation: District and Local Council administrations are stakeholders in the Project and will have input in to the ESIA process as well as subsequent monitoring. For example DEOs will review the project ESIA and provide guidance about local conditions to the National Environment Management Authority (NEMA) prior to approval decision.

5.3.5. The Ministry of Gender, Labor & Social Development, MGLSD

The Ministry of Gender, Labor & Social Development (MGLSD) is responsible for coordinating social development in Uganda. In collaboration with other stakeholders, MGLSD is responsible for inspecting state of occupational safety, labor relations, community empowerment, protection and promotion of rights and obligations of vulnerable groups for social protection and gender-responsive development.

MGLSD has in-house socio-environmental staff and therefore capacity to oversee safeguards requirements associated with this project.

Interpretation: MGLSD is a stakeholder in the Project and will be responsible for inspecting the project for compliance with occupational health and safety regulations, national labour laws and gender equity.

5.3.6. National Forestry Authority, NFA

The National Forestry and Tree Planting Act of 2003 created NFA as semi-autonomous body responsible for management of central forest reserves. NFA divided the country into sectors and manages forest reserves through its sector managers. This institution is responsible for protection of forests reserves in Uganda, with the stated goals of maintaining an integrated forest sector that achieves sustainable increases in the economic, social, and environmental benefits from forests and trees by all the people of Uganda especially the poor and vulnerable. The NFA provides direction and guidance on all aspects of a Project that potentially impact on Uganda's forest resources.

NFA has in-house socio-environmental staff and therefore capacity to oversee safeguards requirements associated with this project.

Interpretation: NFA is a stakeholder in the Project and will have input in to the EIA process, especially in regard to management of natural forests through which project infrastructure will be constructed. NFA will issue approval for any infrastructure that may be installed or erected in a central forest reserves.

5.3.7. Uganda Wildlife Authority (UWA)

The Uganda Wildlife Authority (UWA) was established under the Uganda Wildlife Act, Cap. 200. The main function of the UWA is to ensure sustainable management of wildlife in conservation areas by coordinating, monitoring and supervising wildlife management issues. UWA can manage wildlife (wild plant and wild animals native to Uganda) in both protected and unprotected areas. The UWA provides direction and guidance on all aspects of a project that potentially impact Uganda's wildlife.

NFA has in-house socio-environmental staff and capacity to oversee safeguards requirements associated with this project.

Interpretation: UWA is an important stakeholder in the Project especially for protection of wildlife in conservation areas through which project infrastructure will be built. UWA will issue approval for any ICT infrastructure works that may happen in protected areas.

5.3.8. Ministry of Tourism, Wildlife and Antiquities

In this ministry is found the Department of Monuments and Museums mandated to protect, promote and present the cultural and natural heritage of Uganda through collection, conservation, study and information dissemination for enjoyment and education.

The department's key functions are;

a) Research about natural and cultural heritage
b) Conservation and maintenance of important physical cultural Resources or Heritage Collections.
c) Provision of professional knowledge and information on the archaeology and palaeontology of Uganda
d) Publication of research findings in appropriate publications
e) Exhibition and interpretation of specimens for public study and enjoyment
f) Monitoring implementation policies and strategies of historical and cultural heritage conservation and development.
g) Development of strategies for community participation in cultural heritage.
h) Promote public awareness about cultural and natural heritage through formal and informal education.
i) Provide technical guidelines to the private investors

In this ministry, semi-autonomous agencies like UWA are responsible for management of wildlife protected areas. As earlier indicated, UWA has in-house socio-environmental staff and capacity to oversee safeguards requirements associated with this project.

Interpretation: This Ministry will be responsible for preservation of any chance finds encountered during project implementation. The contractor has obligation to manage any chance finds as guided by Annex 5 of this ESMF.

5.3.9. Ministry of Water and Environment

The Ministry of Water and Environment (MWE) has the responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. MWE has three directorates:

a) Directorate of Water Resources Management (DWRM),
b) Directorate of Water Development (DWD) and
c) Directorate of Environmental Affairs (DEA).

The Directorate of Water Resource Management (DWRM) is responsible for water resources panning and regulation; monitoring and assessment and water quality management. DWRM has the following key functions:

i) **Water Quality Management** in all Uganda's water bodies
ii) **Management of international and transboundary water resource management** promote transboundary regional cooperation for equitable and reasonable utilisation of shared water resources. Specific roles are:

- Transboundary water resources management policy formulation, reviews, implementation and advice,
- Regional coordination of transboundary projects and programmes,
- Transboundary water resources management MIS and monitoring, and evaluation of transboundary projects and programmes, and
- Raising awareness, capacity and confidence-building as well as capacity-building on transboundary water resources management issues.

iii) **Regulation and use of water resources in Uganda**

Anybody abstracting water from a lake, river or underground using a motorized pump; discharging wastewater into the environment; involved in drilling for water; or construction of dams and other structures on water bodies is required to apply for a water permit according to the Water Act. The permits is issued by DWRM.

The Directorate of Water Development (DWD) is responsible for urban water supply, water for production, rural water supply and urban water regulation.

The Directorate of Environmental Affairs (DEA) comprises:

- ***Climate Change Unit (CCU),*** whose main objective is to strengthen Uganda's implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP).
- Environment Support Services (ESS);
- ***Forest Sector Support Department (FSSD***) that promotes efficient and effective governance of the forestry sector.
- ***Metrology Department*** that monitors weather and climate, exchange data/information and products and issue advisories to the nation.
- ***Wetlands Management Department (WMD)*** which protects wetland resources in Uganda.

MWE also oversees autonomous agencies namely NFA and NEMA all of which have adequate technical capacity to oversee socio-environmental safeguards requirements associated with this project.

Interpretation: The Ministry is responsible for environmental and water resources management in Uganda. Directorate of Water Resources Management controls water quality and is responsible for permitting construction activities across watercourses.

5.3.10. Uganda Communications Commission

The Uganda Communications Commission (UCC) has the responsibility for regulating the communications and tele-communications sector. The UCC was established to implement the provisions of The UCC Act 2013 of the Laws of Uganda with a principal goal of developing a modern communications sub-sector and infrastructure in Uganda, in conformity with the operationalization of the Telecommunications Policy.

The Commission is mandated to undertake a range of functions in the following areas:

1. Licensing and standards;
2. Spectrum management;
3. Tariff regulation;

4. Research and development;
5. Consumer empowerment;
6. Policy advice & implementation;
7. Rural communications development; and
8. Capacity building.

UCC is thus not only the regulator, but also a facilitator and promoter of coordinated and sustainable growth and development of Uganda's communications sector. UCC has an Environmental Unit manned by one Environmental Specialist.

Interpretation: UCC will be involved in monitoring activities undertaken by the project to ensure consumer empowerment, protection and promote rural communications development. They shall be involved in monitoring and regulating the environmental aspects of RCIP.

5.4. Implementation Arrangements

Institutional responsibility of implementing this ESMP will rest with the Project Coordination Unit, PCU (or Task Team) at NITA-U. NITA-U will hire an Environmental Specialist and Social Scientist on a retainer basis immediately after project effectiveness. A key role of the unit would be among others, to undertake environmental screening sub-project activities and review consultants' reports for compliance with the ESMP. Other roles will be:

- Monitoring and reporting implementation of mitigation actions by contractors
- Coordinating training and capacity building where planned
- Periodically report to NITA-U, MICT and IDA about implementation of the ESMP

Oversight to ensure mitigation actions are implemented will rest with NITA-U but ICT personnel and safeguards officers at MDA and district level will have similar responsibility.

NITA-U shall require contractors to comply with this ESMF and contractor shall be required to have an Environmental Officer who will undertake environmental supervision and reporting during construction. The supervising engineer or site manager/ contract manager shall be given environmental orientation relevant to this ESMP so as to execute required environmental supervision roles. This might not be necessary if the supervising engineer has working environmental knowledge (most civil engineers do). Additionally the Supervising Engineer/Consultant shall be required to have an Environmental Specialist on his/her team. As a hiring criterion, such a person should have a background in environmental issues, particularly associated with construction projects.

In each District is found a District Environment Officer (DEO) responsible for overseeing environmental protection. However in town councils and municipalities, this role is undertaken by Town- and Municipal Environment Officers respectively. These will have implementation and monitoring roles during execution of this ESMP. Usually, these officials lack adequate facilitation so the project will need to provide auxiliary financial assistance for them to have effective participation in this project. Based on their professional knowledge or recommendations in this ESIA, local environmental officers may have role in project design as advisors to engineering consultants on aspects such as location of onsite incineration units.

b) Monitoring and reporting arrangements

Monitoring will verify if predicted impacts have actually occurred and check that mitigation actions recommended in the ESIA are implemented and their effectiveness. Monitoring will also identify any unforeseen impacts that might arise from project implementation.

Who monitors and how: Monitoring will be undertaken by NITA-U (PCU) and Environmental Officers who represent NEMA at local administrative. Monitoring by NEMA in this case can be considered "third party monitoring" but this is its regulatory mandate according to Sections 6 and 7 of the National Environment Act (Cap 135).

Another government agency that may undertake "third party monitoring" is the Occupational Health & Safety Department in Ministry of Gender, Labor & Social Development (MGLSD). This unit has authority to inspect any facility for compliance with national requirements on safety in workplaces. The project shall make no funding to MGLSD since this is provided for in its annual budget.

Monitoring will be done through site inspection, review of grievances logged by stakeholders and *ad hoc* discussions with potentially affected persons. At each monitoring, a discussion with a chairperson of environment committee of the area's local council (LC) could provide insight into views and grievances community has about the project.

Frequency: Monitoring will be undertaken monthly over the construction period.

Audits: Audits will be necessary both during construction and project operation. While construction audits will aim to verify compliance to impact mitigation requirements, post-construction audits are a regulatory requirement within 12 months and not more than 36 months after completion of construction, according to national EIA Regulations, 1998 Section 31(2).

Both construction and post-construction audits can be conducted internally (by NITA-U) or by a consultant hired by NITA-U.

Reporting: Concise monthly monitoring reports should be compiled by NITA-U's Project Coordination Unit (PCU) and shared with IDA or other interested stakeholder.

Construction- and post-construction phase auditing should culminate in reports that NITA-U shall share with IDA, NEMA or other interested stakeholders. Note that while NITA-U is under no obligation to disclose construction phase audits, annual post-construction audits must be submitted to NEMA as a regulatory requirement as per Section 31(2) of National EIA Regulations, 1998.

5.5. Permits required

Due to the nature of this project and its activities, several permits shown in Table 5-5 will be required before commencing project implementation.

Construction activities will include extensive trenching necessary to lay fiber optic cables, working along banks of wetlands/ watercourses, in protected areas or I some cases and acquisition. Construction will therefore require an ESIA to be reviewed by NEMA and issue a Certificate of Approval when the project is approved for implementation.

Construction of base stations will also require either a project brief or full ESIA either of which is approved by NEMA through issuance of a Certificate of Approval.

During operation, management of e-waste would require a dedicated waste processing facility or disposal site both of which would require an ESIA and subsequently NEMA approval.

Table 5-5: Permits that may be applicable to the project for review

Activity	NEMA Certificate of Approval	Wastewater Discharge Permit from WRMD	Land Acquisition Agreement from land owners
Fibre optic cable lying	♦		♦
Construction of base station	♦	♦	♦
e-waste management	♦		

Note: At the launch of this safeguard instrument preparation, Karamoja region was part of project implementation area, however revised later. The information on the Karamoja region is still relevant for future implementation/ extension to this region and the recommendations will apply to any future considerations for this region.

6. KEY VIEWS FROM STAKEHOLDER CONSULTATIONS

From consultations (see detailed record in Annex 5) it was apparent that information and communication technology has become central to how Ugandans live and work from communication to mobile phone-based banking. It was also found out that key aspects of government business such as day to day communication, document management, and the provision of services, cannot be effectively managed without ICT. In addition, ICT enables collection and analysis of large amounts of data, thus enabling a more strategic approach to both planning and policy development.

Meetings were held with stakeholders listed in **Error! Reference source not found.** below who comprised istrict local governments (districts), regional referral hospitals and educational institutions of higher learning. These provided prevailing ICT challenges, capacity needs, potential impacts of the proposed project and recommendations for impact management. A summary of stakeholder views is provided in Table 6-1.

Although ICT clearly should be at the heart of government business, many government ICT systems were found outdated and dysfunctional as discussed below.

a) Prevalent challenges

- When staffs are transferred from upcountry local governments, they are not well versed with technology which becomes a challenge to catch up with the establishment.
- Most departments have computers but don't work effective because there are ancient computers and programs, the district is trying to replace with new ones but its slow due to little finances for instance at this time have not gotten the release of funds.
- Use of personal emails for both official and person work.
- The underdeveloped ICT infrastructures, dependence on a dial-up modem to access the Internet, and subscription to narrow bandwidth makes the cost of accessing information from electronic source expensive.
- Too much reliance on donor funding, especially with respect to ICT projects, which means that the projects collapse as soon as donors stop funding them due to lack of funds to sustain their continuing operation.

b) Basic ICT needs

All district offices visited indicated need for a computer at least in every office and accessories like printer, scanner, telephones to easy the communication and reduce paper use and enhance speed at which information is transmitted and decisions taken.

Capacity building in ICT, basic computer knowledge deficiency is 98% in especially districts outside the central Uganda region.

c) Impact

- The project will greatly improve service delivery to Ugandan people.
- Enhancing local participation in the decision-making process (e.g. planning) by providing relevant information to the public in an easily understood fashion (e.g. pictures and maps, colour-coded presentations etc).
- In enhancing local government's abilities to collect and analyze information locally, this will enable information flow to and from central government. This should be a two-way process, helping central government to arrive at better policy decisions, informed by data and practical experience at local level.
- The role of information in the management of organizations will become more prominent; management and experts need rapid access to information if service efficiency is to improve.

c) Recommendations

i) Training of staff in ICT for all departments of government agencies is essential if this project is to achieve its objectives.
ii) Action to improve management of ICT projects is required to not only get better levels of service provision but also to avoid crippling financial loss.
iii) The project should ensure that the principles of good governance, capacity building and project management are implemented for all IC T projects not just major projects or those deemed to be of critical importance to government.
iv) Website upgrading and placing staff portal to sign up for communication and information sharing to reduce people travelling for meetings, workshops and conferences that could be attended via teleconference.
v) Project proposed should consider the development of an e-procurement site for local government to ensure delivery of better procurement services. The facility would contain the following as features:

a. Searchable information on procurement opportunities,
b. Downloadable tender documentation,
c. Results of previous procurement competitions,
d. Details of general procurement requirements,
e. On-line submission of tenders and Details of procurement officers etc.

This project will be in line with aspirations of *National Electronic Government (e-Government) Policy Framework, 2011* and the EAC Regional e-Government Program born at a stakeholder's e-Government Strategy Forum held in Dar es Salaam (November 2004). Priority areas for implementation of e-Government flagship applications were identified, prioritized and agreed upon by stakeholders as:

- Customs and Immigration Control,
- e-Parliament, e-Health,
- e-Banking,
- e-Procurement,
- e-Commerce,
- e-Tourism, and
- Meteorological and tidal information.

Table 6-1: Summary of stakeholder views

	Theme	Stakeholder views
1	The status of information and communication technology (ICT) in the district	**In district headquarters:** i) Facilities are available (computers, internet telephones etc) but their use is still basic limited to use of emails and mobile phones to communicate with government agencies and ministries. ii) e-Government applications are almost non-existent. For example e-shortlisting of job applicants was done once after training, but the system is already forgotten. iii) Lack of ICT specialists hinders its use run the district business. Most staff have basic skills in use of computers but not ICT training. Therefore to benefit the district training is essential. iv) Use of the Integrated Financial Management System (IFMS) has improved oversight and enforcement of internal controls, shorter payments processing, improved account reconciliation, and more accurate and reliable financial reporting v) Use of notes boards, where information is printed and pinned or information is printed and put on shelves for users. Majority of heads of

	Theme	Stakeholder views
		department are computer illiterate; Born Before Computer (BBC); vi) Most district officers do not have desktops nor laptops; vii) District administration structure does include ICT department/ personnel; viii) Internet connection is procured on individual basis not by district so ICT running costs (such as for airtime) currently are not institutionalized. **In educational institutions:** Very small computer access levels: for example at Bulega Core Primary Teachers College, three computers served 450 students and 25 tutors). Unreliable power supply and slow connections were also an impediment to effective use of ICT in training institutions.
2	Challenges	**In district local governments:** ▪ Use of personal resources to purchase airtime and internet data to use for official duties strains staff personal resources and that of their families yet these employees are not paid highly. ▪ Transport costs to and from ministries and other meeting places are high and this would be easily solved by e-meetings and tele-conferencing ▪ High cost of accessing internet data; low data transfer rates and unreliability of connection slow down administrative functions. ▪ Absence of ICT experts makes equipment maintenance very expensive. **In Government hospitals (case of Mbarara Regional Referral Hospital):** ▪ Internet use is minimal because it is only connected to the Director's Office and is very costly to pay for. ▪ Intercom systems in down and urgent communication within the hospital is difficult in critical need. ▪ The CTV is also broken-down which poses security risk ▪ Tele-medical facilities were installed but non-functional due to expensive and unreliable internet connection, ▪ The hospital has no ICT staff at the moment. **In educational training institutions hospitals (case of Bulega Core Primary Teachers College - Hoima District):** ▪ Three computers serving population of 450 students and 25 tutors; ▪ Slow data transfer; ▪ Unreliable connection; ▪ High data cost; ▪ Unreliable power supply hinders effective use of ICT
3	e-Waste	▪ The project will add to the rising levels of e-waste in the country; ▪ Ministry should come up with clear guidelines on e-waste management including disposal: recycling, reuse.
4	Land take	Any land take during project implementation should be duly compensated. Trenching often damages private property that is neither repaired nor compensated which maligns before the public an otherwise good infrastructural development.

	Theme	Stakeholder views
5	Sustainability of the project	The country's greatest e-Governance challenge seems to be dominance of donor-funded ICT initiatives which are associated with sustainability shock once donor support expires, rendering continuity impossible. This seems to explain why, so far, only mobile phone-based e-Governance innovations have tended to be more successful since their platforms (mobile phones) are not reliant on external funding. More dismay is the fact that even where government has tried to finance ICT projects, corruption and poor monitoring have often ruined or stalled these projects.
6	Views of MDA provide din national stakeholder meeting	**Regulations and policies** ▪ MICT hired a consultant to prepare regulations, guidelines and standards for e-waste management in Uganda and these are expected to be in place in August 2015; ▪ MICT and Ministry of Public Service are developing a policy to institutionalise ICT in all ministries, local governments, departments and agencies. This will streamline interagency cooperation and communication. **Financing internet connection in district local governments:** ICT services should be centrally paid by the Ministry of Finance, Planning and Economic Development **Effect on ICT infrastructure when roads or reserves change** ▪ The legality and demarcation of road reserves in Uganda is often in dispute, this will cause numerous grievances or legal suits for the project unless compensation is provided in such cases. ▪ It is highly recommended that Government plans for communal ducts for all infrastructure along roads which can be used/ rented by any entity wishing to lay lines along or across roads. This will avoid prevalent and never-ending destruction of roads by different infrastructure developers. ▪ MoLG is suggesting a forum for urban infrastructure services which will require all infrastructure crossing roads to be approved by a committee; **Challenges foreseen:** There are some places in Uganda that are "hard to reach", "hard to work", "hard to live in" and have no internet networks. These may not benefit as much from such a project due to poor/low cellular network strength. **e-Waste:** Response: EU has earmarked Euro 70 million for global management of e-waste and East African states can access this funding as a bloc, to enable development of facilities for proper e-waste management. In Uganda , UCC and MICT are taking lead in development of e-waste regulations and standards, therefore NITA-U should have plan for end-of-life for ICT equipment which certainly will turn to e-waster and requiring proper disposal. Standards on e-waste have been developed by major equipment manufacturers: DELL, HP, MICROSOFT and ones for Uganda just need to bench mark those

	Theme	Stakeholder views
		already developed. However Government through NITA-U, MICT should provide site for collection of e-waste. **Other stakeholders relevant to the project** ▪ Uganda Cleaner Production Center because they were the first to collect data on e-waste; ▪ Uganda Investment Authority and indeed Ministry of Trade, Tourism and Industry (MTTI) aid development of facilitation in e-waste management investment; ▪ Ministry of Works and Transport, MoWT ▪ Ministry of Education and Sports Science and Technology ▪ Public Procurement and Disposal of Public assets Authority, PPDA **Project sustenance after donor financing** ▪ Government should plan for project continuity beyond donor funding. It is common for projects important for national economic development to die-off when donor financing ends.

7. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND ENVIRONMENTAL SIGNIFICANCE

This part of the report is concerned with the identification and assessment of potential positive and negative environmental and social impacts of the proposed project. A combination of two criteria has been used to determine the environmental significance of predicted impacts: the intensity of the potential impact of the project component and the importance (value) of the environmental component impacted upon (Table 7-1). It should be noted however that the actual extent and intensity of impacts may be affected by the project planning and implementation procedures.

Table 7-1: Criteria Used to Determine the Significance of Environmental Effects

Intensity of Impacts	**Value Placed on the Component**		
	Legally protected	**Considered important but not legally protected**	**Considered not important**
Major	Significant	Significant	Insignificant
Moderate	Significant	Significant	Insignificant
Minor	Significant	Significant/ Insignificant	Insignificant

The intensity of the impact has been qualified as: Minor, Moderate or Major. To make this judgment, the following factors were taken into consideration:

- Magnitude of project intervention;
- Frequency of project intervention;
- Irreversibility of impact of the intervention;
- Size of the area affected by the intervention.

The importance of the concerned environmental component is related to the value placed upon it by the public, environmental experts and the international community. It can be qualified as legally protected, important or not important. The importance placed on the environmental component may depend on:

- It's rare or unique nature;
- Professional /experts concerns;
- Public perception of its importance;
- It's current or potential use.

7.1. Project Phase Activities

The project phase activities could be put into the following:

a) Construction Phase
   - Pre-installation activities
   - Installation activities

b) Operation Phase
   - Repair/recovery activities

c) Decommissioning Phase

7.1.1. Construction Phase

Pre-Installation Activities: Pre-installation activities will include a detailed cable route survey to investigate the safest possible route for optic fibre cables and prepare engineering designs.

Installation Activities: During installation, trench excavation will be done along the determined route. The cable will be buried to protect it against damage from vehicles, weather and human activities.

For base stations, a small land parcel measuring 20x20 meters will be leased, fenced and a telecommunication mast erected. On site will also be installed an energy source to run the base station, most likely a diesel powered generator set.

7.1.2. Operation Phase

Once in place and connected, the cable system requires no intervention. Power is provided to the system through electrical connection in the cable. Cable repair and maintenance may be required as a result of damage, failure, age /redundancy. To carry out repairs, the damaged cable is exhumed and brought to the surface whereupon a new section is spliced in. The repaired cable is longer than the original, so the excess is deliberately laid in a 'U' shape in the trench.

7.1.3. Decommissioning Phase

When cables reach the end of their design life or become redundant due to technological advances, their removal or decommissioning may be considered. In the case of a buried cable, its removal may result in some disturbance or impact.

To ensure that due consideration is given to all the relevant issues it is recommended that a detailed evaluation of facility decommissioning options (options to include leaving the cable in-sit) is carried out. The evaluation should consider environmental issues in conjunction with technical, safety and cost implications to establish the best practicable environmental options (BPEO) for the decommissioning of the cable.

The World Bank's environmental and social safeguards policies require that the recipient country prepare an Environmental and Social Management Framework (ESMF) consistent with relevant laws of Uganda, such as the National Environment Act, institutional arrangements and the World Bank operational procedure, OP 4.01, on environmental Assessment) and a Resettlement Policy Framework (RPF) (consistent with national laws, World Bank Operational Procedures, OP on Involuntary Resettlement) for lateral cables and any associated equipment that will be laid from the junction with the main cable to provide guidance in the event that land needs to be acquired and people need to be resettled or compensated.

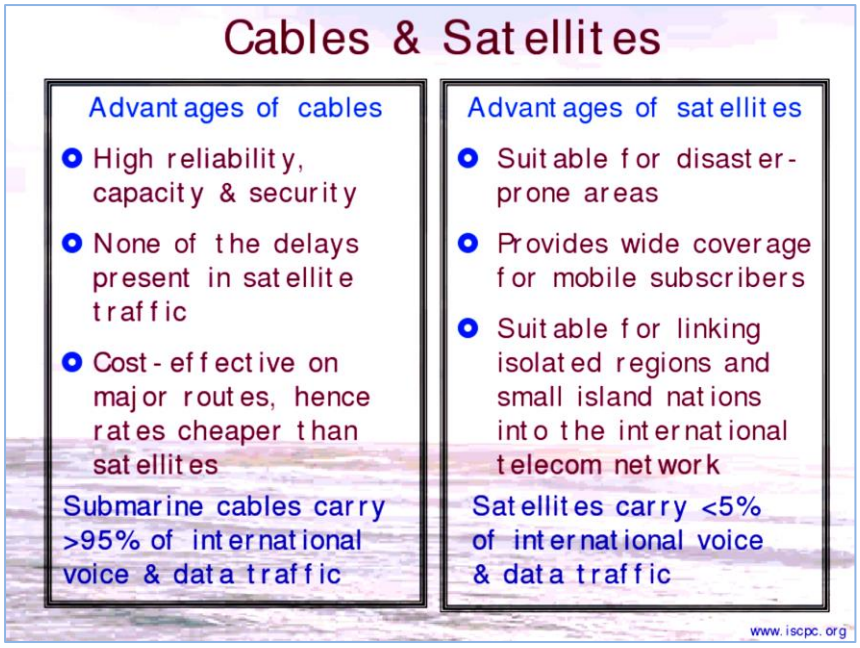
7.2. Alternative Considerations

7.2.1. Technology Alternatives

The use of optical fiber cables networks has greater advantages over satellite, microwave and radio transmissions. Radio has largely been phased out due to restricted bandwidth and poor data transmission. Compared to ground-based communication (optical fiber cables), all geostationary satellite communications experience high latency due to the signal having to travel 35,786 km (22,236 mi) to a satellite in geostationary orbit and back to Earth again. In addition, Satellite communications are affected by moisture and various forms of precipitation (such as rain or snow) in the signal path between end users or ground stations and the satellite being utilized[15]. Modern optical fiber networks transmit high volumes of voice and data traffic with higher security and reliability and at a lower cost than satellite systems. Besides fiber optic networks offering a number of security advantages over satellite communications, they are thought to be much harder to "eavesdrop" on than satellites and have more dependable installation and repair practices [16] (see Figure 6). Furthermore, over the past decade there is increased demand for bandwidth driven by the use of Internet, as well as continuing

[15] http://en.wikipedia.org/wiki/Satellite_Internet_access
[16] Mandell, Mel, "120,000 Leagues Under the Sea," IEEE Spectrum, Vol. 37, No. 4, April 2000.

international trend of privatization of national telecommunications industries, that have outstripped by far the resources offered by satellite transmission of voice and data[17].



Source: www.iscpc.org

Figure 6: A comparison between cables and satellites

7.2.2. Routing Alternatives

Optical fibre cables are an alternative for national backbone infrastructure and to be linked to the submarine system. In this alternative, the cable would be routed underground, generally along the roads and electricity transmission lines where there is existing Right Of Way (ROW) and also where telecommunications use is concentrated. The cable would need to be installed below ground and given the lack of existing infrastructure; this would require extensive trenching. In practice it has been found that underground/ buried cable installation costs are higher than overhead cable due to trenching, land ownership and land use issues however, it presents less repair and maintenance requirements compared to overhead cable systems where, besides effects of weather conditions, cable or pole damages are known to be frequent. There are other practical and security/safety issues as well as greater potential for environmental and social impacts associated with overhead cable for a system of several kilometers (see Table 7-2).

Table 7-2: Comparison between buried and overhead cable installation

Buried cable	Overhead cable
Requires trenching which is tedious and may trigger land ownership and land use issues, poses health risk to some vulnerable groups.	May require wood poles, in addition to existing electricity transmission lines, would cause cable crowd along and across roads, and deplete forest resources.
Requires longer time and more labor to excavate a continuous trench for several kilometers over the project area.	It requires less time and labor to erect poles at intervals over the project area.
Cable fault/ damage is not common and protected against weather conditions.	Cable fault/damage due to hash weather conditions, pole fall, etc.
Cable has passive influence on the environment.	Cable crowding would cause visual blight.
Repair/ maintenance is occasional, usually due to	Repair/ maintenance is frequent due to cable damage

[17] Petit, Charles W., "Spaghetti Under the Sea," U.S. News & World Report, Vol. 127, No. 8, August 30, 1999.

Buried cable	Overhead cable
aging of cable and accessories.	pole, fall or cable or pole aging

For cost effectiveness coupled with environmental impacts posed by buried cable system and overhead cable system, buried cable system currently offers better option.

Placing project infrastructure in road reserves along highways or existing powerlines avoids the need to acquire new land/ corridors. For this option there is no logical, socio-environmentally more amenable alternative.

7.2.3. No Project Scenario

If the proposed project is not implemented, development of the country will continue to be constrained by lack of fast internet and telecommunications capacity, especially in the sectors of data transfer, banking and education. The demand for capacity will continue to grow along with economic growth. The cost of data transfer will increase as private investors exploit the situation. Environmental and social impacts associated with the proposed project will not arise (see Table 7-5), but a different and greater negative impact on the national economy will ensue (see Section 7.3.3). New and international businesses may not develop in a very poor telecommunication service environment. Existing businesses will not grow and unemployment will prevail. In addition cost of doing business will remain high.

Impacts of the project are discussed below in two themes: environmental and social impacts.

7.3. Impacts

7.3.1. Positive social impacts

The positive impacts are expected to be significant and associated with the potential economic growth and development likely to occur as a result of the improvement in telecommunication and internet services. Key increased income and employment opportunities, improvement in the quality and standard of living through easier access to necessary information and resources. With the increase in ICT use, the power consumed by user terminals and network devices will increase. Opportunely, Uganda's power supply is predominated by hydropower sources hence largely renewable but this increase would have led to increase in carbon emissions had generation sources been fossil-fuel based. This is can be considered a negative effect of use of ICT on the environment. However, ICT will have a positive effect on the environment such as reducing movement of people.

7.3.1.1. Positive social impact on people

The proposed ICT project will have positive social impacts:

a) **Access to information:** Possibly the greatest effect of ICT on individuals is the huge increase in access to information and services that has accompanied the growth of the Internet. Some of the positive aspects of this increased access are better, and often cheaper, communications, such as VoIP phone and Instant Messaging. In addition, use of ICT to access information has brought new opportunities for leisure and entertainment, make contacts and form relationships with people around the world, and the ability to undertake online transactions and obtain goods and services (e.g. online courses) from a wider range of suppliers outside Uganda without use of middlemen.
b) **Improved access to education**, e.g. distance learning and on-line tutorials. New ways of learning, e.g. interactive multi-media and virtual reality which could mean schools would be able to undertake practical lessons in virtual laboratories, or even share virtual laboratories with training institutions overseas. ICT also provides new job and working opportunities, e.g. flexible and mobile working, virtual offices and jobs in the communications industry.
c) **Improved access to healthcare services** With ICT, a doctor in Uganda would easily consult a specialist colleague overseas when executing a complex medical procedure/ operation.

d) **New tools, new opportunities:** The second big effect of ICT is that it gives access to new tools that did not previously exist. A lot of these are tied into the access to information mentioned above, but there are many examples of stand-alone ICT systems as well:

   i) ICT can and will be used for processes that had previously been out of reach of most individuals, e.g. photography, where digital cameras, photo-editing software and high quality printers have enabled people to produce results that previously required a photographic studio.
   ii) ICT can be used to help people overcome disabilities. e.g. screen magnification or screen reading software enables partially sighted or blind people to work with ordinary text rather than Braille.

7.3.1.2. Positive social impact on organizations

There are three main areas in which organizations will benefit from use of ICT namely: communications, information management, and security.

a) **Communication**: ICT has a number of benefits to organizations, such as: Cost savings by using e.g. VoIP instead of normal telephone, email / messaging instead of post, video conferencing instead of traveling to meetings, e-commerce web sites instead of sales catalogues. Access to larger, even worldwide, markets. Web sites can be seen from all parts of the world and orders can be taken wherever there is a compatible banking system to process payments, e.g. credit / debit card, Pay-Pal, bank transfer facility. Web sites also have 24 hour opening and are available every day of the year. Flexible response. Organizations with good communications can respond to changes quickly. This may mean better customer relations, an improved supply chain for goods and services, faster development of new products to meet a new opportunity, etc.
b) **Information management:** Organizations can benefit from using ICT for information management. e.g. Improved stock control for medical supplies or training materials in schools resulting in less wastage and lower costs.
c) **Security:** Although use of ICT can bring its own security challenges, it can also solve or reduce some security problems. For example encryption can keep data safe from unauthorized people while in storage or during transmission. In addition ICT will enable physical security systems such as fingerprint, iris or facial recognition.

7.3.1.3. Positive social impact on communities

The largest effect the ICT project will have on communities is enabling increased access to information. This will have numerous positive effects, such as:

a) increasing opportunities for education
b) improving communication
c) allowing people to participate in a wider, even worldwide, society.

7.3.1.4. Positive social impact on education

Use of ICT in education will provide opportunities that might not otherwise exist, such as:

a) distance learning, where students can access teaching materials from all over the world,
b) the ability to perform complex experiments by computer simulations,
c) the possibility for students to have individual learning programs within a topic, rather than everybody having to do the same thing at the same time at the same pace. This way, more able students can be given more challenging work, less able students can access remedial lessons.

Socio-economic benefits related to specific project components, all of which are expected to be significant, are discussed in table below for each project component.

Table 7-3: Social benefits of the proposed project

	Summary of project component	Socio-economic benefit
1	**COMPONENT 1: Enabling Environment**	
	This component will finance the following activities: (i) gap analysis of the existing policy and regulatory framework; (ii) revision of outdated and development of missing ICT polices and sector strategies; and (iii) development and/or revision of ICT legislation, regulatory frameworks, and technical standards. This includes, but is not limited to, development of standards for ICT infrastructure, legislation and regulation to enable use of electronic services and applications, and establishing security requirements for integration and rationalization of all government IT systems. The component will also support change management and capacity building activities such as (i) conducting an ICT skills gap assessment for Government and development of a capacity building program to address deficiencies; and (ii) execution of the skills development program including training and certification for officials at all levels of the Government including critical IT staff.	Initiatives under this component the socio-economic benefits will be: iii) Creation of a conducive ICT regulatory environment: Conducive regulatory environment will translate into increased investment in ICT sector leading to: ▪ Creation of job opportunities ▪ Efficient government service delivery, ▪ Improved productivity in all sectors ▪ Better governance. iv) National economic development: The overall effect of all above benefits is nation-wide economic development.
2	**COMPONENT 2: Connectivity**	
	This component will finance: (i) pre-purchase of international bandwidth for Government and priority target user groups; (ii) implementation of missing links to improve regional connectivity and the reach, availability and resiliency of NBI; and (iii) extension of the Government Network (GovNet), providing broadband connectivity to Ministries, Departments and Agencies (MDAs), schools, hospitals, universities, research institutions, and NGOs. This component will also finance technical assistance related to implementation of these sub-components, including looking into possible PPP options for GovNet, and implementation of recommendations stemming from the relevant safeguard studies. Where possible, existing infrastructure will be utilized and direct public financing will only be employed to the extent necessary to reach areas where private sector interest is not sufficient to provide connectivity without additional intervention or incentives.	Socio-economic benefits of this component will be: ▪ Construction jobs during laying optical fibre cables ▪ Secondary benefits such as income to material suppliers and traders along routes where the optical fibres will be laid. ▪ Full utilisation of the national optical fiber backbone which is currently underutilised due to lack of links to neighbouring countries. ▪ Boosting use of ICTs in rural areas will connect agricultural producers to markets with key benefits being able to sell produce at prices comparable to prevalent market conditions. It will be easy for farmers to know produce prices in urban areas and use

	Summary of project component	Socio-economic benefit
		these to negotiate for better farm-gate prices with traders/ middlemen. ▪ Connectivity provided to Government offices will improve efficiency in information sharing, dissemination to the public, quicken decision making, streamline procurement processes and lower expenditure in local government (e.g. stationery). Saved revenue would be spent on improving local infrastructure (e.g. roads, markets, water systems) and services (e.g. healthcare). ▪ Connectivity to ministries would lower cost of doing business and Government expenditure. ▪ Connectivity with neighbouring countries will improve trade and regional security. ▪ Broadband connectivity to schools, hospitals, Universities, Research Institutions and NGOs will: ▪ Improve healthcare services delivery ▪ Enhance university education and research ▪ Enable NGOs have a stronger scope and wider spatial coverage of developmental undertakings in communities. ▪ Construction jobs during laying optical fibre cables Full utilization of the national optical fiber backbone
3	**COMPONENT 3: e-Government applications**	
	This component will finance the following activities: (i) development of ICT standards and frameworks; (ii) a cloud based national datacenter (Infrastructure as a Service); (iii) a shared platform to improve Government ability to deploy e-Services (Platform as a Service); (iv) Information Security as a Service; (v) a whole-of-Government data integration and sharing program; (vi) shared IT services to improve Government efficiency (Software as a Service); (vii) e-Procurement; and (viii) citizen centric e-Services. The project will finance the required hardware and software as well as technical assistance and consulting services related to the implementation of these sub-components.	Socio-economic benefits will be: iv) Transformation and enhancement of public service delivery using ICT, by reducing cost and increasing speed of doing government business. v) With "Whole-of-Government Data Integration and Sharing Programs", all Ministries and Departments will have cheaper ICT services, improved information sharing/ flow and faster delivery of public services. vi) "Quick Wins" program will support innovative pilots with visible

	Summary of project component	Socio-economic benefit
	It is also noted that the project will provide solar-battery system for reliable power supply at twenty sites to be on property of government institutions.	impacts on Ugandans' socio-economic conditions, demonstrate cost-effectiveness and value of using ICT in public service delivery.
4	**COMPONENT 4: Project Management**	
	This component will finance project management related costs including project coordination, procurement, financial management, monitoring & evaluation, and environmental and social safeguards. This will include funding for consultancy support for the successful implementation of the project, logistics, consumables, office equipment, as well as incremental operating costs and audits. This component will also fund technical assistance (TA) to support monitoring and evaluation (M&E).	Socio-economic benefits will be short-term contract/ job opportunities for skilled professionals in areas of procurement, monitoring and evaluation, environmental and social safeguards.

7.3.2. Negative social impacts

7.3.2.1. Negative social impact on people

Potential negative impacts of the ICT project on people are discussed below:

a) **Job loss:** One of the largest negative effects of ICT can be loss of jobs. This has both economic and social consequences, loss of status and self-esteem. Job losses may occur for several reasons, including: manual operations being replaced by automation e.g. robots replacing people on an assembly line. Job export e.g. data processing work being sent to other countries where operating costs are lower. Multiple workers being replaced by a smaller number who are able to do the same amount of work e.g. a worker on a supermarket checkout can serve more customers per hour if a bar-code scanner linked to a computerized till is used to detect goods instead of the worker having to enter the item and price manually.

b) **Reduced personal interaction:** Being able to work from home is usually regarded a positive effect of using ICT, but there can be negative aspects as well. Most people need some form of social interaction in their daily lives and if they do not get the chance to meet and talk with other people they may feel isolated and unhappy.

c) **Reduced physical activity:** A third negative effect of ICT is that users may adopt a more sedentary lifestyle. This can lead to health problems such as obesity, heart disease and diabetes. Many countries have workplace regulations to prevent problems such as repetitive strain injury or eyestrain but lack of physical exercise is rarely addressed as a specific health hazard.

7.3.2.2. Negative social impact on organizations

Potential negative social impact of ICT on organizations are discussed below:

a) **Cost**: A lot of ICT hardware and software is expensive both to purchase and to maintain. An ICT system usually requires specialist staff to run it and there is also the challenge of keeping up with ever-changing technology. These extra costs should be offset by the positive effects of using ICT, but if cost-benefit analysis is imbalanced for a given organization loss of money is inevitable.

b) **Competition**: Competition is usually thought of as being a good thing, but for some organizations, exposure to stiffer competition can be a challenge. If a school or other business is competing for customers, donations, they may lose out to other organizations that can offer the same service for less money.

c) **Security**: This is always a problem for any organization that uses ICT. Data must be kept secure, Internet connections must be protected from attack. Organizations such as hospitals will usually have legal obligation to patient information.

7.3.2.3. Negative social impact on communities

The largest effect of ICT on society is allowing people to have vast access to information. This can have numerous negative effects such as: causing a digital divide between those who can access information and those who cannot.

7.3.2.4. Negative social impact on education

There are large costs involved in acquisition and use of ICT facilities and poorer students / educational establishments can end up being disadvantaged. This is often referred to as being a factor in the "*digital divide*"**.**

Students and sometimes teachers can get hooked onto the technology rather than the subject content. Just because a topic can be taught via ICT, does not mean that it is taught most effectively via ICT. Even if a subject can be taught effectively via ICT, and money is available, it does not always follow that there is any advantage to it. There have been a lot of studies / assessments carried out, looking to see if ICT usage improves learning. The results are mixed. Much simplified, it would appear that:

- there is some initial impact of using ICT in that students get a wider range of resources and experience some extra motivation.
- the motivation effect soon fades as using ICT becomes the new normal
- the wider resource range remains a positive factor
- there are some well documented positive effects in specific. e.g. simulation and modelling is effective in improving science standards, use of word processing and communication software is effective in developing language skills, but there is concern that large areas of the wider curriculum may not benefit equally as much.

The manner in which the subject is taught probably has a larger effect than the mere use of ICT: if a teacher does not adapt methods to make best use of ICT, students do not gain much. The attitude of an educational establishment also seems to have a greater effect especially where people running them have no knowledge, experience and the money to enable widespread and effective use of ICT in the school.

7.3.2.5. Impact on physical-cultural resources (chance finds)

Construction operations may encounter cultural and archaeological resources or chance finds. Construction can also reveal these buried resources, necessitating "salvage archaeology" for their recovery and protection. Once first stages of earthworks show signs of likely presence of archaeological resources, salvage entails quick excavation to remove artifacts or other traces of human settlement before extensive earth-moving continues. As a general construction principle, any archaeological “chance finds” should be handed to the Department of Museums and Monuments in the Ministry of Tourism, Trade & Industry (MITI).

A protocol for managing chance finds developed based on *The Historical Monuments Act, 1967* is provided in Box below.

Box 7.1: Suggested protocol to manage “chance finds”

a) The contractor shall not perform excavation, demolition, alteration or any works that may harm resources of cultural importance without authorization of the Engineering Assistant or officials from the Department responsible for museums and monuments.

b) In case of chance finds, the Contractor shall mark, cordon and secure the subject site(s) to avoid damage in the course of road construction and immediately notify the Department responsible for museums and monuments.

c) Opening of a new borrow or quarry site shall be witnessed and inspected by official(s) from the Department responsible for museums and monuments for the first 2 days of site opening. The official(s) shall maintain watching briefs during works, with clear procedures for protection and documentation of any “chance finds” encountered (cost of this has been provided in the ESMP,).

d) The contractor is obliged to provide for and ensure archaeological intervention in case they come across new finds. This involves immediate discontinuation of works and notifying the Department responsible for museums and monuments about any discoveries.

e) “Chance finds” encountered in presence of official(s) from the Department of Museums and Monuments

shall be handed to them for transfer to the national museum.

f) "Chance finds" encountered in absence of these official shall be handed over to supervising Engineering Assistant, Environmental Officer or District Engineer who would immediately notify officials of the Department of Museums and Monuments.

g) The Contractor and supervising engineer shall maintain contact details of the Department of Museums and Monuments to quickly notify it in case chance finds are encountered.

Potential negative socio-impacts are summarized in table below for each project development phase. Respective mitigation recommendations are provided in Table 7-7

Table 7-4: Potential and generic negative social impacts per project phase

Impact / issue	Description of potential Impact/ Issue	Impact significance
CONSTRUCTION PHASE		
Impacts on protected/ sensitive areas	The laying of the fibre optic cables through wetland, forest ecosystems and protected areas, will likely affect them. In addition, disposal of waste (oil, grease, plastics etc.) will pollute and possibly destroy some of the natural resources. It is noted that construction will be limited to existing road reserve, hence moderate impact significance.	Moderate
Soil erosion and landslide	Excessive vegetation clearing, excavation coupled with poor drainage can result in soil erosion and landslides on steep slopes. This may be likely in south-western Uganda regions.	Minor to moderate
Vibration and noise	Use of earth-moving equipment and heavy vehicles will generate noise and vibration. Excessive noise can be a nuisance to local residents and businesses. Noise and vibration may generate unacceptable disturbance to wildlife where fibre optic cables are to be laid through wildlife parks and game reserves. Vibration from compacting trenches can crack walls of structures adjoining work sites.	Moderate
Water contamination	During site preparation and construction, removal of vegetation will create exposed sites. Sediment-laden runoff from cleared areas could impact water quality of downstream watercourses.	Moderate
Improper construction waste management	Site preparation and installation at various sites will generate construction (solid, electronic and fuel/oil waste) which may contaminate the natural environment.	Minor to moderate
Air emissions	It is expected that project vehicular traffic will emit exhaust emissions, chiefly oxides of sulphur (SOx), nitrogen (NOx) and those of carbon (CO_2 and carbonmonoxide- CO). Others are particulates, unburned fuel (VOC) and	Negligible to minor

Impact / issue	Description of potential Impact/ Issue	Impact significance
	ground-level ozone. Emissions quantities generated will depend on volume of traffic, travel distances, type and age of vehicles/ equipment, fuel type and quantities, and type of road. Impact on air quality will be short-term only manifesting during the construction phase.	
Impact on physical-cultural resources (chance finds)	Trenching for fibre optic cables might encounter chance finds which need preservation. This impact is of low likelihood since trenching will be along reserves of already existing roads.	Minor
OPERATION PHASE		
Improper e-waste management	Project operation activities of repair and maintenance will generate e-waste. Currently Uganda has no facilities and has only limited technical expertise to manage electronic waste. NITA-U should be aware of need for environmental standards/guidelines and legislation for e-waste management. Therefore long-term arrangements for management of e-waste that the project may generate should be included in this project.	Moderate
DECOMMISSIONING		
Improper e-waste management	Decommissioning will generate e-waste that will need to be disposed of properly	Minor to moderate

7.3.3. Positive environmental impacts

Positive impacts are discussed in Table below per phase of project development and operation.

Table 7-5: Summary of generic-positive environmental impacts

Impact / issue	Description of Potential Impact/ Issue	Significance
Construction Phase		
No positive environmental impact is envisaged during the construction phase.		
Operation Phase		
Reduction in human movement	Use of ICT will reduce the need for movement of people from one location to another for: ▪ Meetings (because video/ teleconference is possible) ▪ Bid collection and submission (because electronic submissions are possible) ▪ Collection of examination results from schools (because they can automatically be sent as a short message to a student's cellular phone) ▪ Document pick up (because can be emailed) Reduced movement minimizes traffic-borne air and noise emissions.	Major

Impact / issue	Description of Potential Impact/ Issue	Significance
Dematerialization	This refers to replacement of physical production and distribution of music, video, books, and software, etc. by the delivery of digital information over the network. Dematerialization reduces resource consumption and waste generation.	Major
Enhanced environmental training	Enhancement of environmental awareness and environmental education in schools	Major
Reduction of resource needs in records storage	Storage of records in electronic form will reduce paper needs and building space in all beneficially entities, mainly school, hospitals and government agencies.	Major
Decommissioning		
Proper e-waste management	If decommissioning undertakes proper e-waste management (storage, treatment and disposal), no adverse environmental impacts would arise.	Major

7.3.4. Negative environmental impacts

Potential negative socio-impacts are discussed in table below for each project development phase.

Table 7-6: Summary of generic potential negative environmental impacts

Impact / issue	Description of Potential Impact/ Issue	Environmental and social Significance
CONSTRUCTION PHASE		
Impacts on protected/ sensitive areas	The laying of the fibre optic cables through wetland, forest ecosystems and protected areas, will likely interface with their functioning. In addition, disposal of waste (oil, grease, plastics etc.) will pollute and possibly destroy some of the natural resources. It is noted that construction will be limited to existing road reserve or corridor of powerlines, hence moderate impact significance.	Moderate
Natural habitats / forests	Laying of the fibre optic cables within existing road reserves that pass some forest ecosystems will not affect mature trees. However, contractors may illegally harvest forest resources such as timber and medicinal herbs. In addition, improper disposal of waste (oil, grease, plastics etc.) will pollute and possibly destroy natural habitats.	Minor to moderate
Soil erosion and landslide	Excessive vegetation clearing, excavation coupled with poor drainage can result in soil erosion and landslides on steep slopes. This may be likely in south-western Uganda regions.	Minor to moderate
Vibration and noise	The use of earth-moving equipment and heavy vehicles will generate noise and vibration. Excessive noise can be a	Moderate

Impact / issue	Description of Potential Impact/ Issue	Environmental and social Significance
	nuisance to local residents and businesses. Noise and vibration may generate unacceptable disturbance to wildlife where fibre optic cables are to be laid through areas such as national parks and game reserves. Vibration such as from compacting the trench can crack walls of structures adjoin the work sites	
Water contamination	During site preparation and construction, removal of vegetation will create exposed sites. Sediment-laden runoff from cleared areas could impact water quality of downstream watercourses.	Moderate
Improper construction waste management	Site preparation and installation at various sites will generate construction (solid, electronic and fuel/oil waste) which may contaminate the natural environment.	Minor to moderate
Air emissions	It is expected that project vehicular traffic will emit exhaust emissions, chiefly oxides of sulphur (SOx), nitrogen (NOx) and those of carbon (CO_2 and carbonmonoxide- CO). Others are particulates, unburned fuel (VOC) and ground-level ozone. Emissions quantities generated will depend on volume of traffic, travel distances, type and age of vehicles/ equipment, fuel type and quantities, and type of road. Impact on air quality will be short-term only manifesting during the construction phase.	Negligible to minor
OPERATION PHASE		
Improper e-waste management	Project operation activities of repair and maintenance will generate e-waste. Currently Uganda has no facilities and has only limited technical expertise to manage electronic waste. NITA-U should be aware of need for environmental standards/guidelines and legislation for e-waste management. Therefore long-term arrangements for management of e-waste that the project may generate should be included in this project.	Moderate
DECOMMISSIONING		
Improper e-waste management	Decommissioning will generate e-waste that will need to be disposed of properly	Minor to moderate

A summary of socio-environmental impacts of the ICT project is provided in schematic below.

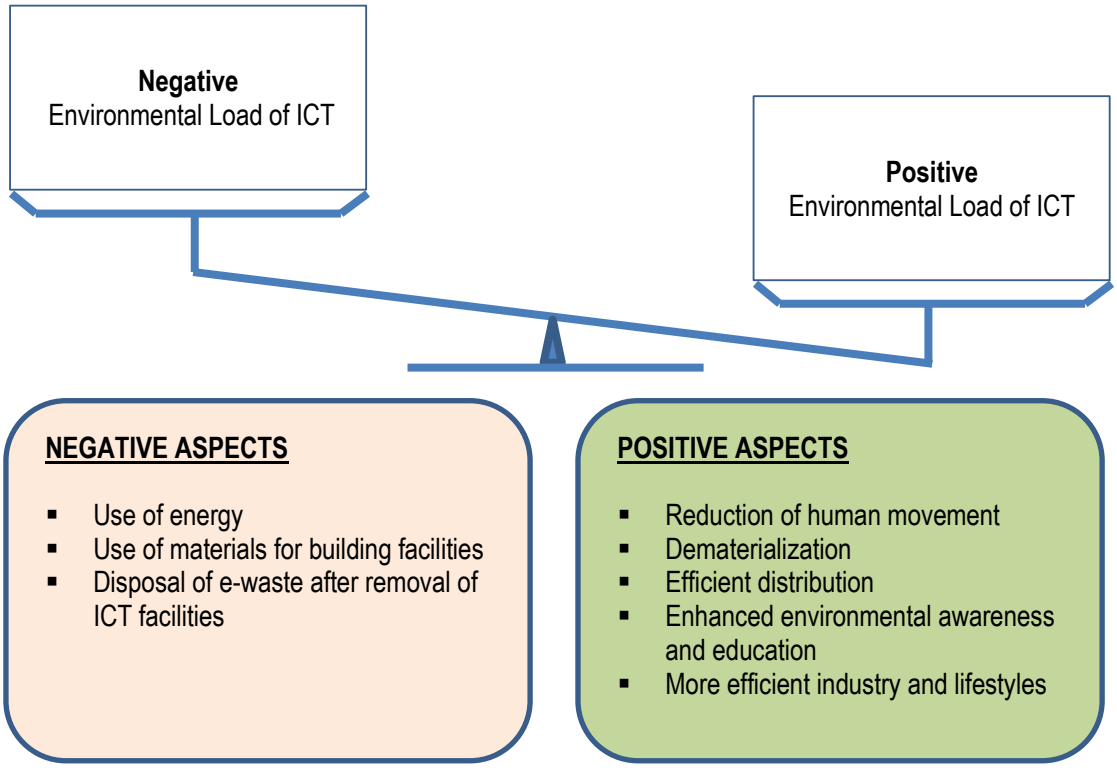


Figure 7: Impacts of ICT on the environment

7.4. Generic Mitigation Guidelines

7.4.1. Generic Mitigation considerations and options

All moderate and major adverse impacts are considered for mitigation. Generic measures have been suggested in this regard where practicable. With regard to negligible and minor impacts where the project activity is not expected to cause any significant impact in such cases, best practice measures and mitigation have also been recommended where appropriate to improve the environmental and social performance of the Project.
The mitigation options considered include project modification, provision of alternatives, project timing, pollution control, compensations and relocation assistance. In cases where the effectiveness of the mitigation is uncertain, monitoring programs are introduced.

7.4.2. Recommended generic mitigation measures

The mitigation measures or guidelines have been designed in order to avoid, minimize and reduce negative environmental and social impacts. The mitigation measures are presented in the following tables in a descriptive format.

7.4.3. Mitigating Potential Environmental Impacts

Table 7-7: Mitigating Potential Environmental Impacts

Impact	Description of enhancement/ mitigation or management measures
Income to material suppliers and	i) Project will promote local procurement where technically and commercially reasonable and feasible;

Impact	Description of enhancement/ mitigation or management measures
employment	ii) Project will promote local procurement where technically and commercially reasonable and feasible; iii) Contractor will avail local communities with information leaflets in their local languages to create awareness about the proposed project activities; iv) Unskilled labor will be recruited exclusively from local community, and semi-skilled labor will be recruited preferentially from such communities, provided that they have the requisite qualification, competence and desired experience; v) Contractors will be encouraged to pay a "living wage" to all workers; vi) Contractors' employment activities on a monthly basis, including number of jobs created by employment type (skilled / semi-skilled / unskilled); number of jobs by gender, employment type and geographical area; total man hours and wages paid, by employment type, gender and geographical area; and rate of employee turnover by gender and area.
Impacts on protected sensitive areas	i) No garbage/refuse, oily wastes, fuel waste should be discharged into sensitive/ protected areas. ii) Fuel storage tanks/sites should be properly secured to contain any spillage iii) Maintenance and cleaning of vehicles, trucks and equipment should take place offsite. iv) Waste bins should be provided for construction workers to avoid littering of waste in the sensitive areas. v) Debris from demolishes and other trenching wastes should not be disposed into forests, wetlands or rangelands. vi) Poaching will be strictly prohibited.
Natural habitats/ forests	i) No garbage/refuse, oily wastes, fuel waste should be discharged into forests. ii) Fuel storage tanks/sites should be properly secured to contain any spillage iii) Maintenance and cleaning of vehicles, trucks and equipment should take place offsite to avoid introducing invasive species and polluting the environment. iv) Waste bins should be provided for construction workers to avoid littering of waste in the forests. v) Debris from demolishes and other trenching wastes should not be disposed into forests. vi) Contractors must comply with NFA guidelines for working in forests reserves. vii) Illegal harvesting of forest resources will be strictly prohibited.
Soil erosion and landslip	i) Restrict vegetation stripping to project sites to minimize project footprint and soil erosion. ii) Avoid ground and vegetation stripping in steep sloping areas to minimize soil erosion and risk of landslips.
Water pollution	i) No garbage/refuse, oily wastes, fuels/waste oils should be discharged into drains or onto site grounds ii) Fuel storage tanks/sites should be properly secured to contain any spillage iii) Maintenance and cleaning of vehicles, trucks and equipment should take place offsite. iv) Toilet facilities should be provided for construction workers to avoid indiscriminate defecation in nearby bush or shores
Waste disposal	i) Adequate waste reception facilities should be provided at the project sites. ii) Final disposal should be at dump sites approved by NEMA. iii) Spent or waste oil from vehicles and equipment should be collected and temporarily stored in drums or containers at site. iv) Hazardous and oil waste should be collected and disposed by NEMA licensed waste handlers.
Air emissions	i) The Project should require that construction contractors operate only well maintained vehicles and trucks; routine maintenance program for all vehicles and trucks should

Impact	Description of enhancement/ mitigation or management measures
	be in place. ii) Whenever dust at the project/construction site becomes a problem, water spraying to suppress dust should be undertaken; iii) Truck drivers should be sensitized on and ensure they observe speed limits on roads especially at business centers The project area will be cordoned off to minimize on dust and emission migration to nearby facilities by wind; iv) Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use. v) The project area will be cordoned off to minimize on dust and emission migration to nearby facilities by wind;
Vibration and noise	i) The Project should require contractors to use equipment and vehicles that are in good working order, well maintained. ii) Contractors will be required to implement best driving practices when approaching and leaving the site (speed limit of ≤30 km/hr) to minimize noise generation created through activities such as unnecessary acceleration and breaking. iii) Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.
Occupational health and safety hazard	i) Trucks carrying construction materials such as sand, quarry dust, laterite etc. will be covered with tarpaulin or appropriate polythene material from or to project site ii) Only experienced drivers/operators should be employed to man project vehicles/trucks iii) All manual equipment such as pickaxe, Pick Mattock, Cutter Mattock, etc. should be sturdy and firmly fixed iv) Except for areas secured by fencing, all active construction areas should be marked with high-visibility tape to reduce the risk accidents involving pedestrians and vehicles. v) All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed. vi) Construction workers should be provided with and enforced to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, earplugs, gloves etc. vii) Clear signage should be used near project sites
Impact on traffic	i) Trenching across roads and project vehicles and trucks movement should be scheduled during general traffic off-peak hours to avoid traffic sluggish due to project activities ii) Employ safe traffic control measures, including temporary road signs and flag persons to warn of dangerous conditions and children crossings iii) Where road use is restricted signage and alternatives should be provided to the public
Land use change	Restrict footprint to critical site
Physical displacement	i) If there is any property, residence, business location acquired by the project, the owner(s) should be given relocation assistance (cash or kind) by the Project to enable them move to new locations, i.e. in accordance with the Resettlement Policy Framework (RPF) ii) The affected persons should not be made to incur any cost during the relocation period. A resettlement plan should be prepared for this area with the RPF as a guide.
e-waste management	i) Install equipment of high quality and proper standard as guided by Uganda National Brea of Standards (UNBS); ii) Sort and label waste at site of generation; iii) NEMA should collaborate with MICT and NITA to develop regulations for e-Waste. At a policy level, incentives should be developed to stimulate public- private sector investment in e-waste recycling, treatment and disposal.

Impact	Description of enhancement/ mitigation or management measures
	iv) Waste should be handled and transported to place of disposal by a licensed waste handlers
Impact on vulnerable groups	i) All open trenches should be marked with high-visibility tape to reduce the risk of accidents involving children, women, disabled and elderly persons. ii) All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed. iii) Access to open trenches and excavated areas will be restricted to prevent children from falling in
Impact on Cultural Heritage/ Archaeological interest	Locations of Cultural Heritage/ Archaeological interest should be avoided by project activities In-case any PCR is encountered, follow guidance in the chance finds procedure presented in Annex 5.
Loss of livelihood	i) Contractors should use local labour as much as possible and where available. As much as possible, all unskilled labour should be contracted or obtained from the local community. ii) On project completion, existing internet cafes and telecommunications providers should be connected without the operators incurring any cost, i.e. in accordance with the Resettlement Policy Framework (RPF)
Social misdemeanor and cyber crimes	i) Strengthen our educational programs on patriotism and moral construction to resist the penetration and influence of corrupt thoughts and culture, and keep the purity of our thoughts and morality; ii) Educate MDAs' personnel and enhance personnel management, regularly conduct the appropriate amount of education on procedural management of websites/ports; iii) Formulate and enact policies, laws, rules and regulations to protect private, public and shared information and prevent cybercrimes, including fraud, copyright piracy, pornography etc. on national intra- and inter-net; iv) Censure internet content to suit target end users
HIV/AIDS	The contractor should sensitize all workers about HIV/AIDS and responsible living.

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT PROCESS

This part presents specific guidelines for EIA process. The basic components of the EIA Process in Uganda consist of three interconnected phases: project brief, screening, environmental impact study, and decision making. The relevant components of the EIA process can be applied to policies and projects during the conceptual and design stages, or after completion of policy and/or project formulation and design but before actual implementation. The EIA phases include:

8.1. Project Brief

According to *Section 5; Subsection 1* of The Environmental Impact Assessment Regulation, 1998, a developer is required to prepare a project brief stating the nature of the project, the projected area of land, water and air that may be affected, the activities that shall be undertaken during and after the development of the project, design of the project, the materials that the project will use and to submit ten copies of the brief to the Executive Director of National Environment Management Authority (NEMA). If found complete, a copy of the project brief is transmitted to the relevant Lead Agency for comments within seven days of receiving the project brief. The Lead Agency comments and these are transmitted to the Executive Director within a period of fourteen days from receiving the project brief.

8.2. Environmental and Social Screening

After Project Brief preparation, environmental and social screening will be done to determine which activities are likely to have negative environmental and social impacts; to determine the level of required assessment; to determine appropriate mitigation measures for activities with adverse impacts; to incorporate mitigation measures into the sub- program as appropriate; to review and approve the sub-component's proposals; to monitor environmental parameters during the implementation of activities. The extent of environmental work that might be required prior to the commencement of the sub-programs will depend on the outcome of the screening process described below.

The objective of the screening phase therefore is to determine if a proposed project has or does not have significant impacts and level/extent of required assessment. If it is determined not to have potential to cause significant environmental impacts, it shall be categorically excluded from further environmental impact assessment, and an appropriate decision shall be made to approve and implement the project, with, where appropriate, recommendations to the developer, for sound environmental management of the project.

If, however, it is not exempt, and is found to have the potential for significant environmental impacts, further screening is conducted to determine the level of required assessment and if mitigation measures can readily be identified through further Environmental Impact Review (EIR) or a full Environmental Impact Study (EIS) shall be required. If in conducting the EIR adequate mitigation measures are incorporated for the identified impacts, the environmental aspects of the project can be approved.

If, on the other hand, adequate mitigation measures are not identified, the project shall be subjected to further detailed Environmental Impact Study.

The Screening Steps: The environmental and social process of screening consists of the following steps, for which RCIP 5 Uganda shall be subjected:

Step 1: Screening of the RCIP 5 Uganda Sub-components

Project screening will be based on a project brief prepared by NITA-U in consultation with the relevant MDAs. However, some subcomponents may not require Project Briefs, since EMPs prepared following screening as guided in the ESMF would suffice to handle impacts that may arise.

In circumstances where Project Briefs are not required, environmental screening will be carried out by NITA-U at national/central level while local government environment officers (Town/ Municipal or District Environment Officer) shall be involved during implementation.

NITA-U's Environment Officer and Social Scientist will complete the Environmental and Social Screening Form presented in Annex 1 to facilitate identification of potential environmental and social impacts, determination of their significance, assignment of appropriate level of assessment and environmental category, proposal of environmental mitigation measures, and where required recommend undertaking of an Environmental Impact Assessment (EIA).

Step 2: Carrying out Environmental Assessment

After analyzing the data contained in the environmental and social screening form and after having identified the right environmental category and thus the scope of the environmental assessment required, the Project Environment Officer and Social Scientist will make a recommendation to NITA-U establishing whether: (a) no EIA will be required; (b) the implementation of simple mitigation measures will be required; or (c) a separate environmental impact assessment EIA will be carried out (such activities are not anticipated). According to the results of the screening process, the following environmental assessment will be carried out:

In case of activities under (a) and (b) above, RCIP 5 Uganda environmental and social mitigation measures checklist will be used (see Table 7-7): Using the checklist the environmental and social mitigation measures will be proposed by the Project – ES or District Environment Officer at high Local Government level and an EMP developed (see section 8.7). In case of RCIP 5 Uganda activities falling under (c) above, and Environmental Impact Assessment (EIA) will be carried out to provide for environmental and social due diligence. The NITA-U will source for an EIA practitioner approved by NEMA to prepare terms of Reference and to undertake the EIA study.

Step 3: Review and Approval

After analyzing the data contained in the environmental and social screening form and after having identified the correct environmental category and thus the scope of the environmental work required, the Environmental Consultant will make a recommendation to establish whether: (a) no environmental work will be required; (b) implementation of simple mitigation measures will be enough; or (c) a separate environmental impact assessment EIA will be carried out.

Step 4: Assigning of Environmental Categories

The assignment of the appropriate environmental category to a particular sub-project activity will be based on the information provided in the environmental and social screening form (Annex 1). Screening will enable categorizing project activities into categories below:

i) Category A: Project activities requiring an Environmental Impact Assessment, have adverse impacts, that are irreversible.
ii) Category B: activities having less adverse impacts and requiring implementation of simple mitigation measures compiled in an environmental scoping report or project brief.
iii) Category C: activities have negligible or no environmental impacts, neither requiring an environmental impact statement nor an environmental impact assessment.

This will be compiled into a project brief and submitted to NEMA for approval.

The assignment of the appropriate environmental category will be based on a combination of consideration of the provisions in OP 4.01 Environmental Assessment and National Environment Act Cap 153. Some activities might be categorized as "C" if the environmental and social screening results indicate that such activities will

have no significant environmental and social impacts and therefore do not require additional environmental work. Thus, if the screening form has only "non" impacts, the proposed activity will not require further environmental work. In this case a project brief will be submitted to NEMA for approval before the project can proceed.

EIA process in Uganda is provided in schematic below.

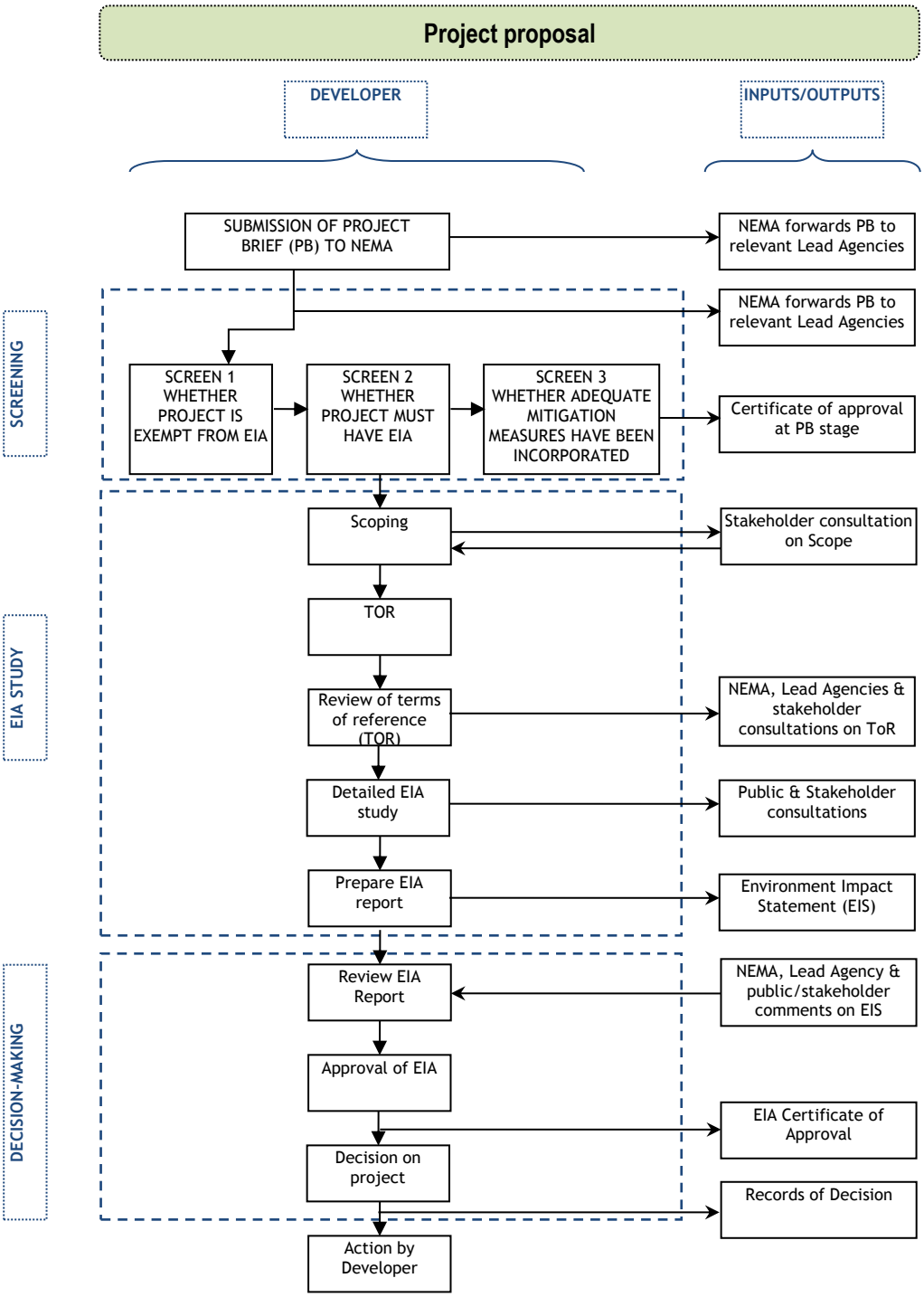


Figure 8: The EIA Process Flow in Uganda

8.3. ENVIRONMENT IMPACT STUDIES AND STATEMENTS

If after screening, it is determined that the project requires a detailed Environmental Impact Study (EI Study), such a certificate shall only be issued after approval or disapproval of an Environmental Impact Statement (EIS).

8.3.1. Scoping

The initial step in the Environmental Impact Study (EI Study) is to determine the scope of work to be undertaken in assessing the likely environmental impacts of a proposed project. Scoping involves identification of potentially significant environmental impacts and/or elimination of insignificant impacts, and is applied to all activities which require a full Environment Impact Study. Usually this includes meetings with relevant agencies and stakeholders to obtain their comments on what/should be included in the study and what alternatives should be considered.

The scoping exercise should, to the extent possible, involve consultation with potentially affected communities, relevant government agencies, representatives of other interested parties including Non-Governmental Organizations (NGOs), the private sector, independent experts and all other stakeholders including the general public to determine the following, among others:

i) Suggested delineation of the appropriate boundaries to be considered in the EI Study;
ii) Questions about the proposed project which should be answered through the EI Study;
iii) Identification of the potentially significant impacts of the project which shall be addressed in the EI Study;
iv) Alternatives to the proposed action;
v) The full range of stakeholders to be consulted and suggestions for full public involvement in the process;
vi) Identification of the full range of stakeholders who may be affected or are interested in the proposed project;
vii) Other technical aspects related to the proposed action; and
viii) Identification of other past, present, or foreseeable future projects in the area that may be impacted upon by, or will impact on the proposed project.
ix) How the proposed project conforms to existing laws, policies and regulations.

The identification of potentially significant impacts is left to the discretion of all the parties involved in the scoping exercise. Significance is a project and site, specific determination, depending upon the context of the project and its associated activities, its scope and magnitude, and the nature of the proposed project site.

In identifying potentially significant environmental impacts, participants in the scoping exercise shall use their own experience, expertise and knowledge of the project area/site, or they may utilize a Checklist (Annex 1) to assist them in identifying the potentially significant impacts. Participants with little knowledge of the project area/site may consider visiting it to acquaint themselves with the site conditions prior to the scoping exercise. The participants shall also consider direct and indirect impacts, as well as cumulative and any likely growth inducing impacts of the proposed actions. Once the potentially significant impacts are identified, the participants shall review the proposed alternatives and suggest, if necessary, other alternatives which should be assessed. Impacts which the participants agree must be addressed to protect the environment shall be considered potentially significant.

The scoping report defines the Terms of Reference for the study and therefore must include all matters as provided for in regulation 14 of the Environmental Impact Assessment Regulation, 1998. The Terms of Reference shall be submitted to the Authority. The Authority in consultation with the responsible Lead Agencies shall review the ToRs and make modifications where necessary.

8.3.2. Environment Impact Study

An environmental impact study is conducted in accordance with the ToRs prepared by the developer in consultation with the Lead Agencies and the Authority. The ToRs must include all matters as provided for in regulation 14 of the Environmental Impact Assessment Regulation, 1998 (see

ANNEX **2**).

Review of ToRs

Environment and social information; Assessment of environment will be carried out to identify and assess the potential environmental and social impacts for the planned activities, assess alternative solutions and will design the mitigation, management and monitoring measures to be adopted. These measures will be quoted in the Environmental Management Plan (EMP) that will be prepared as part of the EIA for each sub-program. The preparation of the EIA and the EMP will be done in consultation with all relevant stakeholders, including the people likely to be affected by the sub- program.

Administrative framework; The EIA will follow the national procedure established in the framework of the Environment Management Act, EIA Regulations, Guidelines and consistent with the WB OP 4.01. In situations where the screening process identifies the need for land acquisition, qualified service providers will prepare a RAP (Resettlement Action Plan), consistent with the OP 4.12, and the Resettlement Policy Framework (RPF) that has been prepared as a separate document for this program.

Public Consultations and Disclosure; Further stakeholder and public consultations will be undertaken to identify the main issues and determine their solutions or mitigation measures. The results of the public hearing should be taken into account when a decision is taken whether or not a certificate is to be issued. The results of the consultations will be included in the EIA report and made available to the public by NITA-U, through NEMA

8.3.3. Environment Impact Statement

According to section 13 (1) of the Environmental Impact Assessment Regulation, 1998, an environmental impact statement is prepared upon completing the environment impact assessment study. Without prejudice to the generality of the terms of reference specified under regulation 10, the environmental impact statement shall provide a description of : (a) the project and of the activities it is likely to generate; (b) the proposed site and reasons for rejecting alternative sites; (c) a description of the potentially affected environment including specific information necessary for identifying and assessing the environmental effects of the project; (d) the material in-puts into the project and their potential environmental effects; (e) an economic analysis of the project; (f) the technology and processes that shall be used, and a description of alternative technologies and processes, and the reasons for not selecting them; (g) the products and by-products of the project; (h) the environmental effects of the project including the direct, indirect, cumulative, short-term and long-term effects and possible alternatives; (i) the measures proposed for eliminating, minimizing, or mitigating adverse impacts; (j) an identification of gaps in knowledge and uncertainties which were encountered in compiling the required information; (k) an indication of whether the environment of any other State is likely to be affected and the available alternatives and mitigating measures; (l) of how the information provided for in this regulation has been generated; (m) such other matters as the Executive Director may consider necessary.

Format of an Environmental Report

An EIA report should include the following items (not necessarily in the order shown):
(a) *Executive summary*. Concisely discusses significant findings and recommended actions.

(b) *Policy, legal, and administrative framework*. Discusses the policy, legal, and administrative framework within which the EA is carried out.
(c) *Project description*. Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement plan or indigenous people's development plan.

(d) *Baseline data*. Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigation measures. The section indicates the accuracy, reliability, and sources of the data.

(e) *Environmental impacts.* Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

(f) *Analysis of alternatives*. Systematically compares feasible alternatives to the proposed project site, technology, design, and operation--including the "without project" situation--in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

(g) *Environmental management plan (EMP*). Covers mitigation measures, monitoring, and institutional strengthening.

(h) *Appendixes*

(i) List of EA report preparers--individuals and organizations.
(ii) References--written materials both published and unpublished, used in study preparation.
(iii) Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.

(iv) Tables presenting the relevant data referred to or summarized in the main text.
(v) List of associated reports (e.g., resettlement plan or indigenous people's development plan).

Submission of the Environmental Impact Statement

The developer shall submit twenty copies of the environmental impact statement to the Executive Director. The Executive Director shall transmit the environmental impact statement to the lead agency and request the lead agency to make comments on the statement.

Review and Approval

The lead agency shall make comments on the environmental impact statement and transmit them back to the Executive Director within thirty working days of receiving the environmental impact statement. Where the lead agency is the developer, it shall be required to submit its environmental impact statement to the Executive Director who shall make comments or invite other lead agencies to make comments.

In making a decision regarding an environmental impact assessment under these regulations, the Executive Director shall take into account: (a) the validity of the predictions made in the environmental impact statement; (b) the comments made lead agencies and other stakeholders ; (c) the report of the presiding officer at a public hearing under regulation 22, where applicable; (d) analysis of the economic and social cultural impacts of the project; and (e) other factors which the Executive Director considers crucial.

The Executive Director shall make a decision within less than one hundred and eighty days from the date on which the environmental impact statement was submitted. In making his decision to approve the project, the Executive Director shall: (a) give approval subject to such conditions as it deems necessary; (b) state the period for which the approval shall remain valid; and (c) issue a certificate of approval of the project in the form contained in the Second Schedule to these regulations.

8.4. Environmental Monitoring

Environmental monitoring aims at checking the effectiveness and relevance of the implementation of the proposed mitigation measures. Local councilors, environmentalists under the guidance of District Environmental Officers as well as concerned citizens will undertake monitoring exercises as speculated by the environmental act. The District Environment Officer will monitor the implementation of environment mitigation measures based on the contractor's work plan. NITA-U in collaboration with NEMA will monitor the implementation of the environment mitigation measures on a sample of RCIP 5 Uganda investments on quarterly basis. On annual basis the District Environment Officers, NITA-U in collaboration with NEMA will carry out a national assessment of RCIP 5 facilities performance in environment and natural resource management using the indicators mentioned in Section 8.5 below.

8.5. Monitoring Indicators

In order to assess the efficiency of RCIP sub-project activities, the will be need to provide monitoring indicators to bench mark the activities. Monitoring will act as a check balance between environment and development i.e. to determine whether the mitigation measures have been successful in such a way that the pre- program environmental and social condition have been restored, improved upon or worse than before and to determine what further mitigation measures may be required. The responsibility for monitoring and evaluation of the mitigation measures is assigned at two different levels i.e. the local and national level.

A sample generic ESMP is provided in Annex 3.

8.6. Grievance Redress Mechanism

The World Bank has introduced a Grievance Redress Service (GRS) requiring the Borrower to provide a grievance mechanism, process, or procedure to receive and facilitate resolution of stakeholders' concerns and grievances arising in connection with the project and the Borrower's environmental and social performance.

According to the GRS project-affected communities and individuals may submit complaints regarding a Bank-financed project to the project grievance redress mechanism (GRM), appropriate local grievance mechanism, or the World Bank's corporate Grievance Redress Service (GRS). Figure 9 below shows the Bank's grievance redress mechanism framework.

The Bank's GRS and this GRM seek to ensure that grievances associate with the project get known and addressed to satisfactory conclusion.

A key similarity between The Bank's GRS and this GRM is ensuring that grievances are resolved within 30 business days after registration but the complainant can resort to other options (e.g. courts of law) for remedy if no closure can be obtained from the grievance redress process.

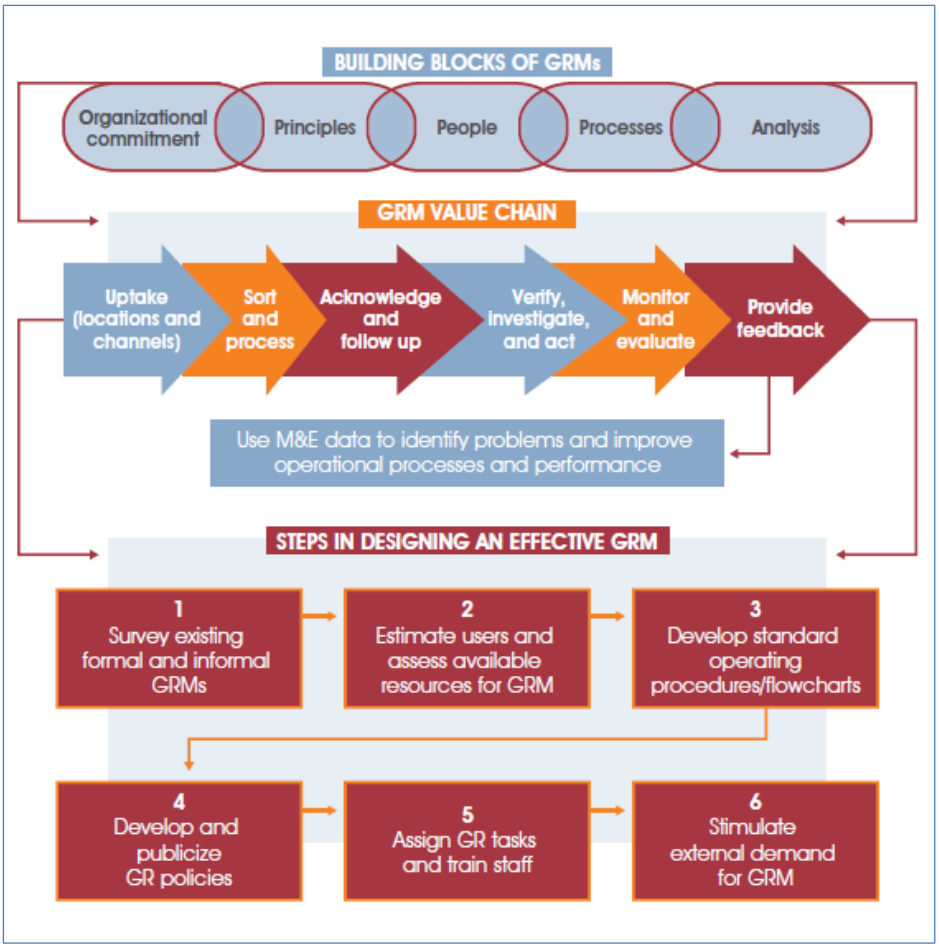


Figure 9: World Bank's grievance redress mechanism framework

Grievance redress mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders.

The World Bank/IFC standards outline requirements for grievance mechanisms for some projects. Grievance mechanisms should receive and facilitate resolution of the affected communities' concerns and grievances. The World Bank/IFC states the concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution. Mechanisms should be appropriate to the scale of impacts posed by a project.

Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project. While this Project may have only limited potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is still very necessary. As such the ESMF has developed a grievance management process to serve as a guide during project implementation. The grievance management guide is provided in Table 8-1.

Table 8-1: Grievance Mechanism

Steps	Process	Description	Time frame	Other information
1	Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction;	1 Day	Email address; hotline number
2	Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	4-7 Days	Significance criteria Level 1 – one off event; Level 2– complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions
3	Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	
4	Development of response	• Grievance assigned to appropriate party for resolution • Response development with input from management/ relevant stakeholders	4-7 Days 10-14 Days	
5	Response signed off	Redress action approved at appropriate levels	4-7 Days	Senior management staff of NITA-U should sign off
6	Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days	
7	Complaints Response	Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	
8	Close grievance	Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law	4-7 Days	Final sign off on by General Manager or Managing Director of NITA-U

8.7. Generic Environmental and Social Management Plan (ESMP)

This Generic Environmental and Social Management Plan (ESMP) for the RCIP 5 Uganda Program is intended to give guidance for development of site specific ESMP during implementation to ensure efficient environmental and social management of project activities. An ESMP translates recommended mitigation and monitoring measures into specific actions that will be carried out by the proponent. The ESMP will need to be adjusted to the terms and conditions specified in any project approval. It will then form the basis for impact management during project construction and operation. The main components of an ESMP are described in the

Table 8-2 below, which reflects practice at the World Bank and the project generic ESMP is provided in ANNEX 3. Ideally the ESMP should contain the following:

- Summary of the potential impacts of the proposal;
- Description of the recommended mitigation measures;
- Statement of their compliance with relevant standards;
- Allocation of resources and responsibilities for plan implementation;
- Schedule of the actions to be taken;
- Program for surveillance, monitoring and auditing; and
- Contingency plan when impacts are greater than expected.

The ESMP should contain commitments that are binding on the proponent. It can be translated into project documentation and provide the basis for a legal contract that sets out the responsibilities of the proponent. In turn, the proponent can use the ESMP to establish environmental performance standards and requirements for those carrying out the works or providing supplies. An ESMP can also be used to prepare an environmental management system for the operational phase of the project.

Table 8-2: Components of ESMP

Components of ESMP	
EMP Component	**How to address**
Summary of impacts	The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized. Cross referencing to the EA report or other documentation is recommended.
Description of mitigation measures	Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, project design and operating procedures which elaborate on the technical aspects of implementing the various measures.
Description of monitoring program	The monitoring program should clearly indicate the linkages between impacts identified in the EIA report, measurement indicators, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions.
Institutional arrangements	Responsibilities for mitigation and monitoring should be clearly defined, including arrangements for co-ordination between the various actors responsible for mitigation.
Implementation schedule and reporting procedures	The timing, frequency and duration of mitigation measure should be specified in an implementation schedule, showing links with overall project implementation. Procedures to provide information on the progress and results of mitigation and monitoring measures should also be clearly specified.
Cost estimates and sources of funds	These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs, and factored into loan negotiations.

Source: World Bank, 1999

9. INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION

Effective implementation of the Social and Environmental Management Framework will require technical capacity in the human resource base of implementing institutions as well as logistical facilitation.

NITA will have a delegated key responsibility of ensuring that the project complies with Ugandan environmental and social laws, and that the project adheres to this ESMF. NITA will also be responsible for validating resettlement claims and ensuring that fairness in compensation is achieved, and will be responsible for providing evidence of this.

Sufficient understanding of the mechanisms for implementing the ESMF will need to be provided to the various stakeholders implementing RCIP sub-projects. Capacity building will be important to support the teams appreciate their role in providing supervision, monitoring, evaluation, and environmental reporting on the projects activities.

9.1. MICT and its agencies

This Ministry is in the fore-front in steering the management of the activities and projects of RCIP. It may be beyond this ESMF to suggest staffing needs of the key entities of this Ministry and its agencies with regard to RCIP. However, coupled with the need to cope with the requirements of this ESMF, the following actions need to be undertaken to build capacities of such bodies:

- Conduct an orientation training that will provide additional knowledge on integration of ESMF into their supervisory and monitoring roles; and
- With emerging technologies it would be advisable to run introductory courses on some computer packages to be used in the management of RCIP.

More importantly, NITA-U's safeguards technical capacity should be raised this agency will be directly responsible for implementation of the project. Currently NITA doesn't have socio-environmental staff to spearhead implementation of environmental and social aspects of the project. NITA should recruit an in-house socio-environmental Safeguards Officer or consider hiring Environmental Consultant on a Retainer Basis. In addition, Uganda Communications Commission has an Environmental Specialist who will from time to time assist to oversee implementation of RCIP environmental aspects.

9.2. The District Local Governments

The custody and implementation of development policies directly falls in the hands of local governments through decentralization frameworks. The continuous need to mitigate environment impacts must be well conceptualized and understood by main actors within the Local Government setting. This includes the Town Clerks/Sub County Chiefs, the Town Council/Sub County Executives.

Appropriate training manuals need to be developed and Trainers of Trainers for future capacity building be identified and trained on the modules in the manuals. This is important especially given that there are some categories of elected leaders in the decentralization system whose term of office easily expires with the onset of fresh elections. Sustainable capacity for enhancing knowledge and skills of these statutory bodies must be generated even beyond the project life cycle.

While local government officers such as Districts environmental officers (DEOs), Municipal environmental officers (MEOs) and Community Development Officers (CDOs) should be involved in roles such as monitoring and grievance management, they largely lack technical competency in requirements of World Bank safeguard policies. Training relevant local government staff in World Bank policies is therefore important before the project commences.

9.3. The Local Communities

Recipient local communities need to appreciate the ESMF as part of their RCIP management tools. One of the most immense tasks in the project is to mobilize community support for the project as well as provide communities with commensurate education on consuming and using water in an environmentally friendly manner.

The faster way of doing this is to ensure that community leaders understand the whole concept of RCIP and the ESMF in order to be able to translate the role of the community in implementing the ESMF. The Local community leaders must ensure active and effective consultation and participation of the affected persons in the preparation and implementation of the Resettlement action plans.
Particular attention will need to be taken to drive home the principles of managing resettlement and the application of the Entitlement matrix and Inventories.

The importance of this lie in the fact that Community leaders are expected to guide in the implementation of the Resettlement Policy Framework, mentor the implementation of the ESMF as well as arrange to sensitize the recipient communities on the components of the project.

9.4. Capacity Building Requirements for the ESMF

In order to build commensurate capacity for effectively implementing the ESMF for the RCIP, all the key actors will need to understand and appreciate their relevance to the project as well as the specific components to which their roles are needed highlighted.

Entities below should be trained:

- NITA, specifically the project coordinator responsible for this project
- Relevant MICT staff responsible for infrastructure projects.
- District Local Government Staff : DEOs, CBOs, MEOs

In order to provide Capacity building for the ESMF, the training activities must be able to articulate the following thematic areas:

i) Environmental impacts and Social Impacts
ii) Relevance of the ESMF in RCIP in addressing likely impacts
iii) What are the basic principles underlying the ESMF?
iv) Enabling Policy, Legal and Institutional Framework for the ESMF, EMP and the RPF
v) Environmental and Social Screening Process
vi) The screening steps
vii) Environmental Management Planning
viii) Guiding principle (Environment must not be adversely affected and likelihoods must be avoided, minimized or compensated where appropriate).

10. ESMF BUDGET

The following budget is proposed for successful implementation of this ESMF. Note that this budget excludes cost for socio-environmental mitigation actions which will be site-specific and should be determined from environmental impact assessment.

Since safeguard studies (ESIA, project Briefs, Resettlement Action Plans) before commencement of civil works will be financed by the World Bank, this budget will finance resettlement expenditures throughout the duration of the project and will be a responsibility of NITA with funds sourced from Counterpart Funding.

Table 10-1: ESMF Budget

	Item	Unit	Cost (USD)	Notes
1	Safeguards training to be provided by short-term consultant or NITA's Safeguards Officer	Lumpsum (LS)	20,000	Training for: ▪ NITA, specifically the project coordinator responsible for this project ▪ Relevant MICT staff responsible for infrastructure projects. ▪ District Local Government Staff : DEOs, CBOs, MEOs in all four regions of Uganda (North, East, South, West, Central)
2	Remuneration for recruited Safeguards Officer in NITA	LS	120,000	Salary of USD2000 per month for 5-year project implementation period.
3	Contractor's safeguards training	LS	10,000	Training to be provided by NITA's recruited Safeguards Officer. Cost is mainly for venue hire.
4	Cost of hiring Consultant (s) to prepare Project Briefs for civil works.	Provisional sum	150,000	Project Briefs may be required for civil work associated with this project.
	Total (USD)		**300,000**	

11. Conclusion

If the proposed project is not implemented, development of the country will continue to be constrained by lack of fast internet and telecommunications capacity, especially in the sectors of data transfer, banking and education. The demand for capacity will continue to grow along with economic growth. The project will improve health, education, trade and the speed at which government transacts administrative functions.

The one highly significant impact during project operation will be management of e-Waste in light of the fact that Uganda currently neither has national regulations nor facilities for disposal of this waste stream. It is incumbent on Ministry of ICT collaborating with UCC, NEMA and NITA to develop these guidelines and incentives to stimulate public-private sector investment in e-Waste recycling facilities.

Construction-phase impacts will be of low significance and easily be managed by following national EIA guidelines, guidance of UWA, NFA or other conservation agencies such as Wetlands Management Department and responsible construction practices associated with erosion control, waste management, site reinstatement and compensation for any inadvertent damages occasioned by construction activities.

REFERENCES

1. Country Pasture/ Forage Resources Profile available at http://www.fao.org/ag/agp/AGPC/doc/Counprof/Uganda/uganda.htm
2. Electrical Power in Uganda- Overview available at http://www.mbendi.com/indy/powr/af/ug/p0005.htm
3. Energy Programme Uganda available at http://www.energyprogramme.or.ug/powering-villages
4. http://en.wikipedia.org/wiki/Satellite_Internet_access
5. Mandell, Mel, 2000 "120,000 Leagues Under the Sea," IEEE Spectrum, **Vol**. 37, No. 4,
6. MFPED 2012 Background to the Budget 2011/2011: Promoting Economic Growth, Job Creation, and Improving Service Delivery. Kampala: MFPED.
7. NBI/EGI Project available at http://www.nita.go.ug/projects/nbiegi-project
8. NEMA, 2002 *State of Environment*
9. NEMA, 2008 *State of Environment*
10. NEMA, 2009, "*Uganda: Atlas of Our Changing Environment*." National Environment Management Authority (NEMA)
11. NEMA, 2009: Sensitivity Atlas for Albertine Graben.
12. NEMA 2012 *State of Environment*
13. *Petit, Charles W., 1999 "Spaghetti Under the Sea," U.S. News & World Report, **Vol.** 127, No. 8,*
14. The Land Act 1998
15. The National Environment Act, Cap 153.
16. The Public Health Act, Cap 281
17. The State of Uganda Population Report 2012. Uganda Population Secretariat & UNFPA.
18. The Water Act Cap 152
19. The Water Resources Regulations 1998
20. UBOS, 2007. *Projections of demographic trends in Uganda 2007-2017*. Volume I. Kampala Uganda
21. UBOS, 2011 Uganda National Household Survey Findings 2009/2010; available at http://www.ubos.org/UNHS0910/chapter4_%20time%20use.html
22. UBOS, 2012: Statistical Abstract available at http://www.ubos.org/onlinefiles/uploads/ubos/pdf%20documents/2012StatisticalAbstract.pdf
23. Uganda Unemployment Rate 2003-2015 available at http://www.tradingeconomics.com/uganda/unemployment-rate
24. UNDP 2011 Human Development Report; Sustainability and Equity: A Better Future for All; available at http://www.us.undp.org/content/dam/undp/library/corporate/HDR/2011%20Global%20HDR/English/HDR_2011_EN_Complete.pdf
25. World Bank (2013). *Project Appraisal Document on a Proposed Grant in the Amount Of US$100 Million to the Government of Uganda for the Uganda Teacher and School Effectiveness Project.*
26. World Bank Operational Manual (Policies accessed 11-14 June 2013 at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,menuPK:4564185~pagePK:64719906~piPK:64710996~theSitePK:502184,00.html).
27. http://www.jemai.or.jp/JEMAI_DYNAMIC/data/current/detailobj-2687-attachment.pdf
28. T. Origuchi, T. Sawada, and S. Nishi, "Formulation of Guidelines for ICT Eco-efficiency Evaluation at the Japan Forum on Eco-Efficiency," NTT Technical Review, Vol. 5, No. 3, pp. 18–24, 2007.
29. https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr200703018.pdf
30. Y. Takeshita, T. Origuchi, M. Yuito, T. Maeda, A. Ishikawa, T. Sawada, and S. Nishi, "Environmental Impact Assessment System for ICT Services—Development and Application," NTT Technical Review, Vol. 4, No. 3, pp. 17–21, 2006.
31. https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr200603017.pdf
32. http://www.ntt.co.jp/csr_e/2009report/ecology/activity02.html

33. Y. Somemura, T. Origuchi, Y. Sugiyama, R. Kobayashi, S. Nishi, and T. Sawada, “Standardization Activities on ICTs and Climate Change in ITU-T,” NTT Technical Review, Vol. 7, No. 9, 2009.
34. https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr200909gls.html

35. World Bank HOW-TO NOTES Feedback Matters: Designing Effective Grievance Redress. Mechanisms for Bank-Financed Projects. Part 1: The Theory of Grievance Redress.

ANNEX 1: ENVIRONMENTAL AND SOCIAL SCREENING FORMS

The Environmental and Social Screening Form (ESSF) has been designed to assist in the evaluation of planned RCIP activities in Uganda. The form will assist the project implementers and reviewers to identify environmental and social impacts and their mitigation measures, if any.

It will also assist in the determination of requirements for further environmental work (such as EIA), and social work (such as RAP) if necessary. The form helps to determine the characteristics of the prevailing local bio-physical and social environment with the aim of assessing the potential impacts of the construction and extension activities on the environment. The ESMF will also assist in identifying potential socio-economic impacts that will require mitigation measures and/or resettlement and compensation.

Please type or print clearly, completing this form in its entirety. You may provide additional information on a separate sheet of paper if necessary. Kindly note that the information you are to provide is required by Section 22 of the National Environment Management Act (Cap 153) and it is an offence to give inaccurate information under Section 53 (C) of the same Act.

SECTION 1: INFORMATION ON THE CONTACT PERSON

Name: ----------

Institutional Affiliation ----------

Business Title / position ----------

Business Address ----------

Telephone ----------

SECTION 2: DESCRIPTION OF THE PROPOSED PROGRAM

Name of Proposed Program ----------

Date expected to start construction ----------

Proposed location of program ----------
(Attach a map or maps, covering the proposed site and Surrounding 5 km radius)

Land Area ----------
(Approximate land area and of proposed location)

Current Land use (Describe how the land is being used at present)

Describe any Possible Alternative Site(s) ----------

SECTION 3: BRIEF DESCRIPTION OF THE PROPOSED ACTIVITIES

Describe the type and scale of the likely activities to be undertaken (e.g. area, land required etc). Provide information on the activities including support/ancillary structures and activities to be undertaken.

Describe how the activities will be carried out. Include description of support/activities and resources required for the construction/extension.

SECTION 4: BRIEF DESCRIPTION OF THE BIOPHYSICAL SOCIO-ECONOMIC ENVIRONMENT

Describe other types of facilities (including health centers and schools) which are located within or adjoining the road reserve. Indicate the proximity of the road reserve to residential areas, national parks or areas of ecological, historical or cultural importance.

Indicate whether adequate infrastructure exists at the proposed location, or whether roads, electricity supply and, or drainage systems will need to be constructed as a part of the proposed project, especially for base stations.

SECTION 5: EMPLOYEES AND LABOURERS

Number of people to be employed: Employees and Labourers	During Construction	During Routine Operation
FULL-TIME		
PART-TIME		

SECTION 6: DESCRIPTION OF PROCESS THAT COULD BE IMPLEMENTED

Briefly describe the type and nature or type of the project at the site.

List the type and quantity of raw materials to be used in the project and highlight their sources

Material	**Quantity**	**Source**

SECTION 6: POTENTIAL ENVIRONMENTAL IMPACTS

Please indicate environmental impacts that may occur as a result of the proposed project.

A. The Biological Environment
The Natural Environment

Describe the habitats and flora and fauna along the project route or base station sites expected to be affected by the project (e.g., downstream areas, access roads):

_____

Will the project directly or indirectly affect:

Natural forest types?

Swamps?

Wetlands (i.e., lakes, rivers, swamps, seasonally inundated areas)?

Natural critical habitats (parks, protected areas)?

Other habitats of threatened species that require protection under Ugandan laws and/or international agreements?
YES _____ NO _____

Are there according to background research/observations any threatened/ endemic species in the along the project route area that could be affected by the project?
YES _____ NO _____

Will vegetation be cleared? If yes, please state the distance/length of affected area
YES _____ NO _____

Will there be any potential risk of habitat or ecosystem fragmentation (e.g. severance of wetland continuity) due to the clearing activities?
YES _____ NO _____

Will the project lead to a change in access, leading to increase in risk of depleting biodiversity resources (e.g. in wildlife areas?)
YES _____ NO _____

Provide additional description for "Yes" answers:
_____

Protected Areas
Does the subproject area or do subproject activities:

Occur within or adjacent to any protected areas?
YES _____ NO _____

Affect any protected area downstream of the project?
YES _____ NO _____

Affect any ecological corridors used by migratory or nomadic species located between any protected areas or between important natural habitats (protected or not) (e.g., mammals or birds)?

YES _____ NO _____

Provide an additional description for "yes" answers:
_____

Invasive Species
Is the sub-project likely to result in the dispersion of or increase in the population of invasive plants or animals (e.g., along distribution lines)?
YES _____ NO _____

Provide an additional description for a "yes" answer:
_____

B. The Physical Environment

Geology/Soils

Will slope or soil stability be affected by the project? YES _____ NO _____
Will the subproject cause physical changes in the project area (e.g., changes to the topography)? YES _____ NO _____

Will local resources, such as rocks, wood, sand, gravel be used?
YES ____ NO ____
Could the subproject potentially cause an increase in soil salinity in or downstream the project area? YES _____ NO _____

Could the soil exposed due to the project potentially lead to an increase in lixiviation of metals, clay sediments, or organic materials? YES _____ NO _____
_____

Landscape / Aesthetics

Is there a possibility that the sub-project will adversely affect the aesthetics of the landscape?
YES _____ NO ____
_____

Pollution

Will the project use or store dangerous substances (e.g., large quantities of hydrocarbons)? YES _____ NO _____

Will the subproject produce harmful substances? YES _____ NO _____
Will the subproject produce solid or liquid wastes? YES _____ NO _____
Will the subproject cause air pollution? YES _____ NO _____
Will the subproject generate noise? YES _____ NO _____
Will the subproject generate electromagnetic emissions? YES ____ NO _____
Will the subproject release pollutants into the environment? YES ____ NO ____
_____

C. The Social Environment

Land Use, Resettlement, and/or Land Acquisition
Describe existing land uses on and around the sub-project area (e.g., community facilities, agriculture, tourism, private property):
_____
Are there any land use plans on or near the sub-project location, which will be negatively affected by subproject implementation? YES ____ NO ____

Are there any areas on or near the subproject location, which are densely populated which could be affected by the sub-project? YES _____ NO _____

Are there sensitive land uses near the project site (e.g., hospitals, schools)?
YES ____ NO____

Will there be a loss of livelihoods among the population? YES ____ NO ____

Will the sub-project affect any resources that local people take from the natural environment? YES _____ NO _____

Will there be additional demands on local water supplies or other local resources?
YES _____ NO _____

Will the sub-project restrict people's access to land or natural resources?
YES ____ NO ____

Will the project require resettlement and/or compensation of any residents, including squatters?
YES _____ NO _____

Will the subproject result in construction workers or other people moving into or having access to the area (for a long time period and in large numbers compared to permanent residents)?
YES ____ NO _____

Who is/are the present owner(s)/users of resources/infrastructures the subproject area?
_____

Loss of Crops, Fruit Trees, and Household Infrastructure
Will the subproject result in the permanent or temporary loss of:

- Crops?
- Fruit trees / coconut palms?
- Household infrastructure?
- Any other assets/resources?

Occupational Health and Safety, Health, Welfare, Employment, and Gender

Is the sub-project likely to safeguard worker's health and safety and public safety (e.g., occupational health and safety issues)? YES _____ NO _____

How will the project minimize risk of HIV/Aids?

How will the sub-project minimize the risk of accidents? How will accidents be managed, when they do occur?
_____
Is the project likely to provide local employment opportunities, including employment opportunities for women?
YES _____ NO _____

Provide an additional description for "yes" answers:
_____

Historical, Archaeological, or Cultural Heritage Sites

Based on available sources, consultation with local authorities, local knowledge and/or observations, could the sub-project alter:

- Historical heritage site(s) or require excavation near the same? YES ____ NO _____

- Archaeological heritage site(s) or require excavation near the same? YES ____ NO ____
- Cultural heritage site(s) or require excavation near the same? YES _____ NO ____

- Graves, or sacred locations (e.g., fetish trees or stones) or require excavations near the same?

YES _____ NO _____

N.B For all affirmative answers (YES) Provide description, possible alternatives reviewed and/or appropriate mitigating measures.

SECTION 7: RECOMMENDATIONS

Environmental category: (tick where applicable)

	Category	Justification
A	Does not require further environmental or social studies	
B	Requires submission of only a Project Brief	
C	Requires a full ESIA to be submitted on date	
D	Requires an ESMP to be submitted on date	
E	Requires a RAP to be submitted on date	
F	Requires an Indigenous Peoples Plan (IPP)	
G	Requires a Physical Cultural Resources Plan	

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse effects of this subproject.
Reviewer: ……
Name: ……..
Signature: ……..
Date: ……..

ANNEX 2: SAMPLE OF TORs FOR EIA

In case an EIA has to be undertaken for any specific RCIP 5 UG component, the NITA-U will procure the services of a certified NEMA EIA Practitioner to undertake the EIA study. Sample ToR (for guiding purposes only) are provided below.

Introduction and Context

This part will be completed at a time and will include necessary information related to the context and methodology to carry out the study. It will briefly describe the purpose and objectives of RCIP 5 UG, and the specific RCIP 5 UG component for which the EIA is undertaken.

Objectives of EIA study

i) To identify all likely positive and negative environmental impacts due to the SPECIFIC RCIP 5 UG project;
ii) To identify and evaluate all significant negative environmental impacts, and propose appropriate mitigation measures for the attention of the developer, for incorporation into the final construction and operational phases;
iii) To propose an environmental management plan for all aspects of the specific project.

EIA study tasks

The consultant should realize the following:

i) Describe the project characteristics, including extent, land requirement, material requirements, construction works, and the beneficiary community;
ii) Describe the biophysical characteristics of the environment where the project activities will be realized; and underline the main constraints that need to be taken into account at the field preparation, construction works and future school or project operations;
iii) Assess the potential environmental and social impacts related to project activities and recommend adequate mitigation measures, including costs estimation.
iv) Review alternative more cost-effective and environmentally and socially friendlier options for achieving the same objectives,
v) Review policy, legal and institutional framework, at national and international level, related to the environment and identify the constraints for best practices in management with appropriate recommendations for improvements,
vi) Identify responsibilities and actors for the implementation of proposed mitigation measures,
vii) Assess the capacity available to implement the proposed mitigation measures, and suggest recommendations in terms of training and capacity building and estimate their costs,
viii) Develop an Environmental Management Plan (EMP) for the project. The EMP should underline (i) the potential environmental and social impacts resulting from project activities (ii) the proposed mitigation measures; (iii) the institutional responsibilities for implementation; (iv) the monitoring indicators; (v) the institutional responsibilities for monitoring and implementation of mitigation measures; (vi) the costs of activities; and (vii) the implementation schedule,
ix) Public consultations: The EIA results and the proposed mitigation measures will be discussed with populations, NGOs, local administration and other stakeholders impacted by the project activities.
x) Recommendations from this public consultation will be include in the final EIA report.

Structure of the EIA Report

i) Cover page
ii) Table of contents

iii) List of acronyms
iv) Executive summary
v) Introduction
vi) Description of project activities
vii) Description of environment in the project area
viii) Description of policy, legal and institutional framework
ix) Presentation of results of public consultations and disclosure, and proposed social action by the developer;
x) Description of methodology and techniques used in the assessment and analyses of project impacts,
xi) Description of environmental and social impacts of project activities,
xii) Environmental Management Plan (EMP) for the project including the proposed mitigation measures; the institutional responsibilities for implementation; the monitoring indicators; the institutional responsibilities for monitoring and implementation of mitigation; Summary table for EMP
xiii) Recommendations
xiv) References
xv) List of persons / institutions met

Consultant team

The Consultants will be NEMA -Certified EIA Practitioners or others agreed by NEMA.

ANNEX 3: GENERIC ESMP

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
Construction Phase								
Positive Impacts								
	Income to equipment and material suppliers and employment	Project will promote local procurement where technically and commercially reasonable and feasible.	Ensure that local communities and businesses benefit from procurement process	Number of local businesses benefiting from construction related procurement	Monthly	NITA-U and contractor		None
	For earth materials, procure from legitimate sources to avoid encouraging environmental degradation	Project's material demand does not encourage environmental degradation	All quarries from which materials (sand, stone) are obtained are licensed by the local authorities.	Before and during construction	Monthly	NITA-U and contractor		None
	Employment	Contractor will avail local communities with information leaflets in their local languages to create awareness about the proposed project activities	The participation of local community members in all project activities possible.	Local community awareness of project progress status	Monthly	NITA-U and contractor		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		Unskilled labour will be recruited exclusively from local community, and semi-skilled labour will be recruited preferentially from such communities, provided that they have the requisite qualification, competence and desired experience.	The participation of local community members will be maximised during site preparation and construction activities.	Number of local people (unskilled and semi-skilled) employed during construction phase	Monthly	NITA-U and contractor		None
		Contractors will be encouraged to pay a "living wage" to all workers.	Improve livelihood of the local community	No complaints of poor remuneration	Monthly	NITA-U and contractor		None
		Contractors' employment activities on a monthly basis, including number of jobs created by employment type (skilled / semi-skilled / unskilled); number of jobs by gender, employment type and geographical area; total man hours and wages paid, by employment type,	Contractor has records of filled vacancies by; number of placement, level of skill, gender, type, turnover, and man hours and wage.	No complaints of inconsistencies in recruitment criteria and wages	Monthly	NITA-U and contractor		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		gender and geographical area; and rate of employee turnover by gender and area.						
Negative Impacts								
	Degradation of protected/ sensitive areas	Contractor should seek guidance of local environmental officers to identify acceptable disposal sites for oily/ fuel waste	Contractor has records of proper waste disposal indicating quantities dumped and location of dumping site,	No report of illegal waste dumping in non-designated areas	Monthly	NITA-U and contractor		None
		Provide a 'bunded' area with impervious 'polyliner' where fuel storage and dispensing activities take place in order to provide containment of the fue and waste oil in case of any spillage/leakage.	No fuel spillage to the environment	Fuel storage tanks/ sites should be secured in bunded area for spillage containment	Monthly	NITA-U and contractor		None
		Maintenance and cleaning of vehicles, trucks and equipment should take place offsite.	No pollution due to equipment cleaning and maintenance onsite	Project vehicles cleaning and maintenance records	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		Contractors should undertake waste segregation onset to separate e-waste waste from non-e-waste waste.	E-waste waste separated from non-e-waste waste and all waste should disposed away from protected/ sensitive areas	No waste littered in the protected/ sensitive areas	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Debris (metal scrap and wood) from demolishes that can be reused/ recycled may be given to local, trenching wastes should be used for backfill	Amount of waste disposed minimized by reuse, wherever feasible	No debris from demolishes and earth cuttings from trenching disposed in wetlands, forests and rangelands	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Soil erosion	Constructor should restrict vegetation stripping to critical sites to minimize project footprint and soil erosion	Erosion is not accelerated by project activities	Evidence of eroded mass from project sites	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Constructor should avoid ground and vegetation stripping in steep sloping areas to minimize soil erosion and risk of landslips.	Erosion and landslide is not accelerated by project activities	Evidence of stripped steep sloping area as a result of project activities	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
	E-waste generation	Install equipment of sound standard and brands	Durable and genuine equipment installed	Manufacturers' Specification records	Monthly	NITA-U Contractor		None
	Water pollution	No garbage/refuse, oily wastes, fuels/waste oils should be discharged into drains or onto site grounds	No water quality deterioration	Evidence of garbage/refuse, oily/ fuel waste in drains	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Constructor should provide toilet facilities for construction workers to avoid indiscriminate defecation in nearby bush or shores	No human excrete washed into water resources	Toilets facilities on site	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Air quality	The Project should require that construction contractors operate only well maintained vehicles and trucks;	Minimise air pollution levels	No complaints of excessive fumes	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Whenever dust generation at the project/construction site becomes a problem, water spraying to suppression is	Minimise dust levels	Recognition of locales of contractor's efforts to minimise dust nuisance.	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		necessary;						
		Truck drivers should be sensitised on and ensure they observe speed limits on roads especially at business centres;	Minimise dust and exhaust emissions	No complaints of trucks ruthless driving from communities along roads used by project vehicles	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.	Minimise dust and exhaust emissions	No complaints of excessive fumes	Monthly	NITA-U Contractor; Local Environmental Officer		None
		The project area will be cordoned off to minimise on dust and emission migration to nearby facilities by wind;	No excessive dust emissions noted outside construction areas	No complaints of excessive dust from construction areas	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Vibration and noise	The Project should require contractors to use equipment and vehicles that are in good working order, well maintained.	Construction activities generate permissible levels of noise.	No complaints of excessive noise from construction areas	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		Contractors will be required to implement best driving practices when approaching and leaving the site to minimize noise generation created through activities such as unnecessary acceleration and breaking	Construction activities generate permissible levels of noise.	No complaints of excessive noise from construction areas	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Engines of vehicles/trucks and earth-moving equipment should be switched off when not in use.	Minimize vibration	No complaints of excessive vibration from construction areas	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Occupational health and safety hazard	Trucks carrying construction materials will be covered with tarpaulin or appropriate polythene material from or to project site	Avoid accidents due to flying objects	No complaints of people being hit by objects from moving project truck	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		Only experienced drivers/operators should be employed to man project vehicles/trucks	Avoid accidents to workers and public	No complaints from community and workers of bad manning of project trucks	Monthly	NITA-U Contractor; Local Environmental Officer		None
		All manual equipment such as pickaxe, Pick Mattock, Cutter Mattock, etc should be sturdy and firmly fixed	Avoid heavy, sharp and cutting parts falling off	No complaints of workers sheared by falling off pick, mattock, hoe etc	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Except for areas secured by fencing, all active construction areas should be marked with high-visibility tape to reduce the risk accidents involving pedestrians and vehicles.	No pedestrians and vehicles falling into trenches.	No reports of pedestrians and vehicles falling into trenches	Monthly	NITA-U Contractor; Local Environmental Officer		None
		All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed.	Minimize risk of pedestrians and vehicles falling into trenches	No reports of pedestrians and vehicles falling into trenches	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		Construction workers should be provided with and enforced to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, gloves etc.	Minimize OHS accidents to construction workers	All workers should have PPE at construction site at all times	Daily	NITA-U Contractor; Local Environmental Officer		None
		Clear signage should be used near project sites	Minimize accidents	Clear sign at appropriate points	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Traffic Flow	Trenching across roads and project vehicles and trucks movement should be scheduled during general traffic off-peak hours to avoid traffic sluggish due to project activities	Minimize traffic flow interferences	No trenching across roads and project trucks moving during traffic peak hours	Daily	NITA-U Contractor; Local police station		None
		Employ safe traffic control measures, including temporary road signs and flag persons to warn of dangerous conditions	Minimize traffic accidents	Number of accidents in each month of construction duration	Daily	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		and children crossings						
		Where road use is restricted signage and alternatives should be provided to the public	Minimize inconveniences to road users	Signage and alternative routes where necessary	Daily	NITA-U Contractor; Local police station		None
	Land use change	Restrict footprint to critical site	Minimize land use change	No complaint of unnecessary land take	Monthly	NITA-U Contractor; Local Environmental Officer		None
	Physical displacement	If there is any property, residence, business location acquired by the project, the owner(s) should be given relocation assistance (cash or kind) by the Project to enable them move to new locations, i.e. in accordance with the Resettlement Policy Framework (RPF)	Affected property and persons compensated	No complaints of uncompensated project affected property and persons	Monthly	NITA-U Contractor; Local Government ;LC (I)	According to RAP	None
		The affected persons should not be made to incur any cost during the relocation period. A resettlement plan	Affected property and persons compensated and aided during relocation	No complaints of cost incurred by persons; RAP document	Monthly	NITA-U Contractor; Local Government ;LC (I)	According to RAP	None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		should be prepared for this area with the RPF as a guide.						
	Impact on Cultural Heritage/ Archaeological interest	Locations of Cultural Heritage/ Archaeological interest should be avoided by project activities	No interference to Cultural Heritage/ Archaeological sites	No complaints of project affecting Cultural Heritage/ Archaeological sites	Monthly	NITA-U Contractor; Local Government ;LC (I)	According to RAP	None
	Impact on vulnerable groups	All excavated areas should be marked with high-visibility tape to reduce the risk accidents involving children, women, disabled and elderly persons.	No accidents to children, elderly, disabled and women	Records of trench fall accidents involving children, elderly, disabled and women	Monthly	NITA-U Contractor; Local Environmental Officer		None
		All excavated areas should be backfilled as soon as possible after cable laying and construction has been completed.	Minimize risk	Complaints of neglected excavations/ trenches	Monthly	NITA-U Contractor; Local Environmental Officer		None
		Access to excavated areas and constructions sites will be restricted to children and general public	Minimize risk to children and general public	Records of trench fall and construction site accidents involving public	Monthly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
	Construction activities	Impacts of construction activities	Construction activities do not cause adverse socio-environmental impacts	Annual construction audits do not indicate adverse impacts not mitigated	1 time per year	NITA-U (construction audit may be undertaken by NITA-U or consultant it hires)		Environmental auditing of construction projects
OPERATION PHASE								
Positive Impacts								
	Employment	Economic growth and development	Improved livelihood	More youths engaged in project facility related employment/ businesses	Operation	NITA-U		None
	e-waste management	Management should undertake waste segregation onset to separate e-waste waste from non-e-waste waste.	E-waste waste separated from non-e-waste waste	Labeled waste bins and no waste littered	Daily	Facility Management		None
		Management should work hand in hand with private Waste handlers (licensed waste handlers)	Proper waste disposal	Documentation of formal engagement of refuse handlers	Monthly	Facility Management		None
	Social misdemeanor and cybercrimes	Formulate and enact policies, laws, rules and regulations to protect private, public and shared	ICT development and application governed Strict and relevant legal system	ICT policies, laws, rules and regulations enacted	Operation	NITA-U; relevant MDAs		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
		information and prevent cybercrimes, including fraud, copyright piracy, pornography etc. on national intra- and inter-net;						
		Educate MDAs' personnel and enhance personnel management, regularly conduct the appropriate amount of education on procedural management of websites/portals;	MDAs capacity building	Certificates of training	Implementation	NITA-U; relevant MDAs		Training for leaders; Training of government officers; and Training of the IT Technical staff
		Strengthen educational programs on patriotism and moral construction to resist the penetration and influence of corrupt thoughts and culture, and keep the purity of our thoughts and morality;	Education programs on moral values	Education Curricula content at different levels	Implementation	NITA-U; MoE; relevant MDAs		None
		Censure internet content to suit target end users	Undesired content blocked	Some websites blocked	Operation	Relevant institution		Training of the IT Technical staff

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
DECOMMISSION PHASE								
	Soil erosion and landslip	NITA-U should consider the option of not removing installed cables in some areas or whole network	Prevent impacts of removal of installs facilities	Leaving installed facilities has no impact on environment	Weekly	NITA-U		None
		Constructor should restrict vegetation stripping to critical sites to minimize project footprint and soil erosion	Erosion is not accelerated by project activities	Evidence of eroded mass from project sites	Weekly	NITA-U Contractor; Local Environmental Officer		None
		Constructor should avoid ground and vegetation stripping in steep sloping areas to minimize soil erosion and risk of landslips.	Erosion and landslide is not accelerated by project activities	Evidence of stripped steep sloping area as a result of project activities	Weekly	NITA-U Contractor; Local Environmental Officer		None
	Water quality	No garbage/refuse, oily wastes, fuels/waste oils should be discharged into drains or onto site grounds	No water quality deterioration	Evidence of garbage/refuse, oily/ fuel waste in drains	Weekly	NITA-U Contractor; Local Environmental Officer		None
	Waste management	Management should undertake waste segregation onset to separate e-waste waste from non-e-waste waste.	E-waste waste separated from non-e-waste waste	Labeled waste bins and no waste littered	Weekly	NITA-U Contractor; Local Environmental Officer		None

Project Phase	Risk/ Impact	Enhancement/ Mitigation Measures	Desired Outcomes	Monitoring: Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility	Cost USD (million)	Capacity Building and Training Requirements
	Decommission activities	Impacts of decommission activities	decommission activities do not cause adverse socio-environmental impacts	Decommission activities' monitoring do not indicate adverse impacts not mitigated	End of project life	NITA-U (decommission monitoring may be undertaken by NITA-U or consultant it hires)		Environmental monitoring of decommission activities

ANNEX 4: GENERIC SOCIAL & ENVIRONMENTAL MONITORING REPORTING

Monitoring is necessary to avoid negative effects during construction and operation of the proposed project and achieve sustained environmental compliance. Table below details a sample monitoring plan which provides mitigation/enhancement measures, desired outcomes, performance indicators/targets and timing for the relevant actions. In addition, the responsible parties, estimated costs and capacity building need to be specified wherever applicable.

A sample content of a monitoring report is also provided below the Table.

Table A4: Sample Monitoring requirements

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
1	**CONSTRUCTION IMPACTS**						
1.1	**Sourcing of construction material**						
	Positive	Local communities and businesses benefit from procurement process.	Number of local businesses benefiting from construction related procurement.	Before construction commences	NITA and the Contractor		
1.2	**Employment**						
	Positive	- Qualified local people benefit from employment opportunities. - A safe working environment.	Proportion of nationals employed.	Before construction commences and throughout construction period	NITA and the Contractor		
1.3	**Severance of access**						

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
	Major	Reduced interference with traffic and driveways. Well restored pavements, with timely restoration. Promptly restore damaged roads, paving Minimal haulage of cut and fill material. Rapid response to damaged utility lines. Emergency response teams	Area of pavements removed and restored. Soil erosion after rain. Number of complaints received and attended to by the contractor . Number of damage incidents on the utility and service provider infrastructure reported and attended to in a timely manner. Number of standby teams ready to repair damaged infrastructure.	Throughout construction period	NITA and the Contractor (		
1.4	**Air pollution**						

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
	Minor-moderate	Less pollution caused by dust, generators and construction vehicles.	Number of complaints received on dust pollution.	Throughout construction period	NITA and the Contractor		
1.5	**Noise and vibration impacts**						
	Minor	Low noise from construction activities	Number of complaints received on noise pollution.	Throughout construction period	NITA and the Contractor		
1.6	**Disruption of traffic flow**						

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
	Major	Access to the site is safe for traffic. Limited number of accidents and complaints from business and travelling community. Adequate health and safety for construction workers and community. Fewer accidents attributed to project traffic. Minimal noise and air pollutants emission from construction traffic. No materials spills from lorries during transportation. Minimize dust, vibration and noise levels.	Traffic control structures and signage are erected Number of traffic incidents attributed to the construction activities. Records of road accidents occurring during the construction period. Contractor aware of and adheres to guidelines on health and safety of projects associated with roads. Number of complaints relating to dust, vibration and noise levels. Number of complaints relating to dust. Compliance with traffic speed limits.	Throughout construction period	NITA and the Contractor		

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
1.7	**Exposure to laser light and glass fibre shards**						
	Moderate	Few accidents involving employees who may inadvertently be affected by laser light. Prompt treatment for workers affected. Sufficient OHS precautions taken to protect staff and passers-by from these risks.	Number of accidents reported. Number of incidents affecting passers-by reported.	Throughout construction period	NITA and the Contractor		
1.8	**Electrical safety**						
	Minor-moderate	Few accidents reported, if at all. Sufficient OHS precautions taken to protect staff.	Number of incidents reported.	Throughout construction period	NITA and the Contractor		
2	**OPERATION PHASE IMPACTS**						
2.1	**Employment opportunities**						

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
	Positive	Ensure that nationals benefit from employment opportunities.	Proportion of nationals employed.	Before operation commences and throughout operation period	NITA and its contractors		To be determined after assessing the availability of skills amongst the population.
2.2	**Improved Telecommunications**						
	Positive	Value addition to telecommunications services.	Strategic plan for value addition, expansion, integration and intensification of NITA's services in the country. Faster internet.	Throughout the operational period of generators.	NITA		
2.3	**Exposure to laser light and glass fibre shards**						

Text Reference	Significance Assessment	Desired Outcomes	Performance Indicators/Targets or Acceptance Criteria	Timing	Responsibility ***Referral Hierarchy	Incremental Costs (USD)	Capacity Building and Training Requirements
	Major	Few accidents involving employees who may inadvertently be affected by laser light and glass shards. Prompt treatment for those affected. Sufficient OHS precautions taken to protect staff and passers-by from these emissions.	Number of accidents reported. Number of incidents affecting passers-by reported.	Throughout construction period	NITA and the Contractor		

A full monitoring report would have content below:

1. Introduction

1.1 Scope of Works

1.2 Status of Project Works

2. Environmental Monitoring

2.1 Monitoring Locations

2.2 Noise Monitoring findings

2.3 Air Quality Monitoring findings

2.4 Water Quality Monitoring findings

2.5 Drinking Water Quality findings

3. Waste Management

3.1 Storage of Construction, Hazardous and Domestic Waste

Give locations of waste storage/ stockpile areas (including type of waste and the volume)

3.2 Disposal of Construction, Hazardous and Domestic Waste

Insert a table with information about disposal of the different type of waste.

3.3 Recycling of Waste findings

Include information about the type of waste that has been recycled.

4. Handling and Storage of Chemicals

4.1 Storage of Chemicals

Insert a map with the location of the chemical storage areas. The type of chemicals + the current volume / quantity shall also be added.

4.2 Disposal of Chemicals

Insert a table with information about the type and volume of Chemicals imported and disposed during the month

5. Other Environmental Topics

5.1 Environmental Incidents and Accidents

5.2 Environmental Awareness Training

5.3 Socio-Environment Sustainability Undertakings

e.g. supporting community e-Waste management (recycle, reuse) undertakings

ANNEX 5: RECORD OF CONSULTATIONS

A) JINJA DISTRICT LOCAL GOVERNMENT

Information and communication technology has become central to on temporary life. Key aspects of government business such as day to day communication, document management, and the provision of services, cannot be effectively managed without ICT. In addition, ICT facilitates the collection and analysis of large amounts of data, thus enabling a more strategic approach to both planning and policy development. Although ICT clearly sits at the heart of government business, many government ICT systems are outdated and unable to deliver the required functionality as discussed below.

The status of ICT at the district headquarters:

- Use emails and mobile phones to communicate with the ministry
- e-Shortlisting of application was used once after the training, but the system is already forget because the training was not effective.
- Most staff have basic use of computer but not ICT
- Use of the Integrated Financial Management System (IFMS) , has improved oversight and enforcement of internal controls, shorter payments processing , improved account reconciliation, and more accurate and reliable financial reporting
- Use of noticeboards, where information is printed and pinned

Facilities:

- At least every office has a computer with internet though not stable so it's not a reliable means of communication.
- There is a printer for used by all departments.
- Internet which connected to one computer in the resource centre and used by all staff if they go online.

Challenges:

- When staff are transferred from upcountry local governments, they are not well versed with technology which becomes a challenge to catch up with the establishment
- Most departments have computers but don't work effective because there are ancient. The District is trying to replace with new once but it's slow due to lack of finances.
- Use of personal emails for both official and person work poses a risk to information security.
- The underdeveloped ICT infrastructures, dependence on a dial-up modem to access the Internet, and subscription to narrow bandwidth makes the cost of accessing information from electronic source high.
- Too much reliance on donor funding, especially with respect to ICT projects, which means that the projects collapse as soon as donors stop funding. Sustainability is therefore uncertain in such cases.

Needs:

Need a computer at least in every office and accessories like printer, scanner, fax telephones to easy the communication and reduce on movements and printouts

Capacity: Staff across all departments lacked adequate training in use of ICT.

Recommendation

i) Adequate training of staff in all departments in regard to ICT.
ii) The program should reach down to the sub-counties because they are the heads, all work is done at the counties for instance why IFM programme be set at the district when revenues are collected by the Lower Local Government.

iii) Lower local government should be considered for this programme if it aims at service delivery to people.
iv) There is need for continuous trainings, because most staff when transferred from up country offices have no idea of ICT, which becomes hard to catch up with the establishments.
v) Building capacity should focus on the Lower Local Government.
vi) Action to improve the management of ICT projects is required to not only get better levels of service provision but also to avoid crippling waste.
vii) Provide computers connected to stable internet and software for every office to easy the work, scan, printer.
viii) Technical person for supervision and monitoring of the project especially the equipment
ix) The software provided should be user friendly
x) Develop a strategy for the effective implementation of the project at level of the stakeholders involved.

xi) Project proposed should consider the development of an e-procurement site for local government (and for other agencies if considered appropriate) in terms of delivering better services. This would be developed on a pilot basis and would then be made available to each local authority. The facility would contain the following as initial features:

- Searchable information on procurement opportunities,
- Downloadable tender documentation,
- Results of previous procurement competitions,
- Details of general procurement requirements,
- On-line submission of tenders and Details of procurement officers etc.

Stakeholder consultation record:

Name of agency/stakeholder/community: JINJA DISTRICT LOCAL GOVERNMENT			
Purpose of consultation (tick appropriate box):	Scoping: [ ]	ESIA: [ ]	
	Sensitisation: [ ]	RAP: [ ]	
	Environmental Audit: [ ]	Other (specify): ESMF & RPF	
Date: 26th/02/2015			
Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)			
Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)			
Name of person	**Designation**	**Contact**	**Sign/ initial**
NABIDA GEORGE	SENIOR ASS. RECORDS Off.	0782 905968	[signature]
ASIO CHRISTINE	R. ASSISTANT	0774935264	[signature]
ZABULIWO DEBORAH	ASST. RECORDS OFFICER	0755587043	[signature]
NAKYANZI OLIVE HOPE	C.A.O/JINJA	0776613296 hope.nakyanzi@gmail.com	[signature]

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B) JINJA REGIONAL REFERRAL HOSPITAL

Application of ICT in health information access and dissemination

- Mainly communication is done in tradition way of typing and print out of documents and share with the respective personnel. A lot of printing is done, across all departments of the hospital
- The information is printed out and put on the shelves for users.
- Use of emails which are managed by the Hospital secretary.
- Some staff members use mobile phones and their person modems for communication, however it's not effective thus its costly
- No advanced ICT, most staff have basic knowledge of using a PC
- The systems available are the District Health Information systems (DHIS)and the Uganda Registration service Bureau (URSB) used in Birth and death certification registration, the system uses a web application to capture birth and death records that take place in hospitals and within communities
- Tele-medicine, programme provided by the Ministry of Health is not effective due to low internet. Therefore computers which were attached to the programme are used by staff for other official work.
- Register are picked from all departments, tallied and filled on the Health Information Management system- HIMF.
- Office space are small compared to the information storage and staff
- The Hospital have few cabinets for information storage
- Communication is also through notes boards and suggestion box

Departments

- Surgical
- Medical
- Paediatrics
- Obstetrics and Gynaecology
- Diagnostics
- Pharmacy
- Orthopaedic

Challenges

i) Funding of installed equipment is a challenge, because most projects exist for 1year and run out when staff have not owned and appreciated the project and even learnt to utilize the facilities then phases out.
ii) Standard of office space are small as compared the information to be stored especially the records office, procurement, production.
iii) There is high level of computer illiteracy among the majority of the staff and the population at large
iv) The cost involved in acquiring and maintaining ICT facilities as the main bottleneck in health information access and dissemination.
v) Increasing access to and dissemination of information using ICT; lack of skilled and qualified manpower to manage the operation and functioning of ICT facilities
vi) Too much reliance on donor funding, especially with respect to ICT projects, which means that the projects collapse as soon as donors stop funding them due to lack of funds to sustain their continuing operation,
vii) The underdeveloped ICT infrastructures, dependence on a dial-up modem to access the Internet, and subscription to narrow bandwidth makes the cost of accessing information from electronic source expensive
viii) In addition to the costs and status of infrastructure, several hospitals fail to work together because of the incompatibility of equipment and software. Related to this is the presence and availability of experts in real time. In cases where consultations have to be made across continents, there is also the issue of time difference and presence of experts when they are required.

ix) The poor ICT infrastructure status in Uganda currently is unable to adequately support the potential benefits of ICTs in the health sector. Very few hospitals are computerized, and when they are, internet access is limited.

Impacts

i) Electronic communications lets you combine numerous media - text, graphics sound, video, etc. - into a single message. That can result in far more meaningful communications tailored to the nature of - particular audience
ii) With the Internet you have the ability to transmit and receive large amounts of information quickly to and from individuals and workgroups around the world
iii) Notes can be written on screen using stylus and hand writing-recognition software converts it in computer text data.
iv) The emerging telemedicine and mobile phone-based health technologies will enable medical services to be provided remotely and more efficiently.
v) Patient data can be shared easily between doctors, pharmacies and even other hospitals where they get services.
vi) Through heath care network, the hospital provides consultations and training courses for community, district, and provincial hospital to improve medical personnel's skills and knowledge in managing complicated conditions by themselves before deciding to refer patients
vii) Reducing the amount of paper work and simplifying patient referring process to improve the hospital efficiency.
viii) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes will reduce to a single step called "One-Stop Service". The hospital encouraged information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet 24-hrs
ix) Consultation: the network hospitals can consult and send laboratory results including Electro cardiograph (ECG) via SMS or facsimile to increase accessing speed to medical services by reducing administrative steps, increase work flow efficiency, reduce cost of providing services.
x) Internet registration: patients can make doctor appointments through internet to savetime and increase on the efficiency of the work.
xi) The effectiveness of the health sector depends on the quality of research and the ability of health workers to transform the results of research into better healthcare services. This requires access to up-to-date scientific and biomedical information as well as opportunities to communicate and exchange information with other researchers, which is greatly facilitated by the application and use of ICT
xii) The use of ICTs for distance education to enhance the traditional face-to-face TOT (training of trainers) model, while fostering networks that trainees can rely on as a resource when they return to the field.

The facilities required

- Wide area networks (WANs) and local area networks (LANs) that link the operational systems within Hospital.
- Office space especially in the records office
- The hardware e.g. desktop computers, printers, scanners, desk phones for every department and a Resource centre which is fully facilitated.
- Software systems e.g. email systems, applications and systems used for pathology reports and patient administration, websites with staff login portal to ease communication.
- More staff to handle the patients because the patient- doctor/nurse ratio is high especially in Jinja Hospital

Recommendations

i) Adequate training for staffs, most of them have no idea about the use of new technologies in regard to communication. This could include: gain experience and knowledge of PCs using Microsoft Windows operating systems and Microsoft Office packages (including Word, Excel, Access, PowerPoint, Outlook

and Internet Explorer), problem solving skills and be able to undertake PC installations and fault diagnosis/fixing and experience of working as a team and be able to work under pressure in an extremely busy environment.

ii) Recommends for a resource centre for information storage, reading, teleconference, Skype.

iii) Provision of toll-free phones between the person on duty and the doctor, nurse, drivers, this helps to save patients' lives, because the phones are expensive to maintain and especially in time of emergency when there is no airtime, it's hard to communication.

iv) There is need to have ICT support technical persons to oversee the project-support technicians assist in the implementation and commissioning of new equipment, participating in demonstrating the use of computer equipment to staff, assisting in the maintenance of computer equipment, keeping records of work undertaken including entry of information into the computerized asset management system participating in demonstrating the use of computer equipment to staff

v) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes were reduced to a single step called "One-Stop Service". The hospital encouraged information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet

vi) Many organizations are using electronic communications facilities, such as the World Wide Web, as internal communications tools to enhance team work. Many individuals at different locations can work on the same documents, hold meetings and integrate research findings.

vii) Use of solar and backup storage devices to avoid loss of information due to unreliable power or theft.

Stakeholder consultation record:

Name of agency/stakeholder/community:	JINJA ~~DISTRICT~~ REFERRAL AND REGIONAL HOSPITAL				
Purpose of consultation (*tick appropriate box*):	Scoping:			ESIA:	
	Sensitisation:			RAP:	
	Environmental Audit:			Other (specify): ESMF & RPF	
Date: 26/02/2015					
Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)					
Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA)					

Name of person	Designation	Contact	Sign/ initial
Mugisa N. Reggie	Prime Hospital Admi	0772452406	~~Reggie~~

C) BUGIRI DISTRICT LOCAL GOVERNMENT

The status of ICT at the district headquarters:

- Traditional way of communication, typing, printing then take it the respective office or department but most case all communication go through the chief Administrative Officer- CAO.
- The internet which was provided is too slow, it not even used
- The use of The Integrated Financial Management System (IFMS) improved oversight and enforcement of internal controls, shorter payments processing times, improved account reconciliation, and more accurate and reliable financial reporting. However, it's a 4-year program, so far 3 years have elapsed and remaining one year but the district doesn't have the funds to fund its continuation.
- Records and reports are manually managed
- Use of personal modem and mobile phones for communication
- Use of emails for only those offices connected Local Area Network which is also not stable

Facilities

- At least every office has a computer with internet though not stable so it's not a reliable means of communication. However those without computers use most case for the records office.
- There is a printer used by all departments which sometime it breaks down and the staff have move to Bugiri town for printing and photocopying.

Challenges

i) Firstly, internet connectivity remains unaffordable to many Ugandans. Hence Internet coverage is low.
ii) Furthermore, the bandwidth is always low (few can afford high bandwidth) to stimulate efficient online service delivery. To worsen matters, many programmes undertaken to boost internet or data transmission coverage are always either poorly monitored or eroded by corruption.
iii) E-Governance initiatives in Uganda are largely funded or initially dependent on external funding; this has implications on sustainability when external funding expires.
iv) It is also argued that most e-Governance plans stop at district headquarters leaving rural areas/ low local Government cut off; even where attempts have been made to link such areas, poor network signals has unbaked the connectivity
v) E-Procurement is non-existent and still done by way of paperwork
vi) The integrated personal payroll management system-IPP program is not connected so the personals have to travel to Kampala for e-payments, e-short listing etc
vii) Every work is done manually and even printing is done in different place where you have to move from one block to another.
viii) Sometimes staff have to spend on their own money to finance official communication or travelling to meetings outside the district.
ix) The district, sometimes miss key meetings or workshops because information (invitation letters) sent through post office arrives late.
x) Records office recently lost information due to lack of backup storage
xi) Sharing computers puts official confidential information at risk of theft or alteration.

Impacts:

- Enhancing local participation in the decision-making process (e.g. planning) by providing relevant information to the public in an easily understood fashion (e.g. pictures and maps, colour-coded presentations etc)
- In enhancing local government's abilities to capture and analyze information locally, this will enable much improved information flows to and from central government. This should be a two-way process,

helping central government to arrive at better policy decisions, informed by data and practical experience at local level, and facilitating local influence on policy setting centrally

- The role of information in the management of organizations will become more prominent; the management and experts need rapid access to information if service efficiency is to increase.

Recommendation:

i) Adequate training to easy access of information from one office to another, creation of files and also depending on the department gaps in ICT.
ii) Website development and placing staff portal to sign up for communication and sharing information to reduce on the movements and print outs.
iii) Provide computers connected to stable internet and software for every office to easy the work, scan, printer.
iv) Technical person for supervision and monitoring of the project
v) The software provided should be user friendly
vi) Redesign, the records office because it's not safe the way it's designed, the location, a lot of light, dust which affect the documents and also for security purposes
vii) Resource centre with facilities like projector, resourceful materials, and computers for teleconferences etc.
viii) Reliable Internet access and power supply
ix) Relevant and structured information must be available without delay and to an adequate extent for decision-making and customer service.
x) We need to still respect the independence of all the organizations while ensuring that the various strategies are fully aligned, both in the local government sector and between the local government sector and the rest of the public service.
xi) Project proposed should consider the development of an e-procurement site for local government (and for other agencies if considered appropriate) in terms of delivering better services. This would be developed on a pilot basis and would then be made available to each local authority. The facility would contain the following as initial features:

    - Searchable information on procurement opportunities,
    - Downloadable tender documentation,
    - Results of previous procurement competitions,
    - Details of general procurement requirements,
    - On-line submission of tenders and Details of procurement officers etc.

xii) Government should appreciate their overall responsibility of creating a conducive environment that allows for development of ICTs for national benefits
xiii) e-Government must be customer driven and services-oriented, meeting the needs of citizens and improving their quality of life.
xiv) Lowering the cost of PCs for targeted population groups, etc.

Conclusion: The country's greatest e-Governance challenge seems to be dominance of donor-funded ICT initiatives which are associated with sustainability shocks once the period of donor support expires, rendering continuity impossible. This explains why, so far, only mobile phone based e-Governance innovations have tended to be more successful since the platforms (mobile phones) are not reliant on external funding. More dismay is the fact that even where government has tried to finance ICT projects heavily, corruption and poor monitoring have tended to ruin the undertakings/projects.

Stakeholder consultation record:

Name of agency/stakeholder/community: BUGIRI DISTRICT					
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐		**ESIA:**	☐
	Sensitisation:	☐		**RAP:**	☐
	Environmental Audit:	☐		**Other (specify):**	ESMF & RPF
Date: 27/2/2015					
Project name: Regional Communications Infrastructure project (RCIP)					
Proponent: National Information Technology Authority (NITA)					

Name of person	Designation	Contact	Sign/ Initial
Rita Emma	SPO	0703327335	
Alho Florence	R/O	0758586075	
Mugeni Joseph	IT Specialist	0782429779	
Namukuve Brenda	SPO	0782944487	

BUGIRI REFERRAL HOSPITAL

Application of ICT in health information access and dissemination

- Mainly communication is done in tradition way of typing and print out of documents and share with the respective personnel. A lot of printing is done, across all departments of the hospital
- The information is printed out and put on the shelves for users.
- Some staff members use mobile phones and their person modems for communication, however it's not effective thus its costly
- Use of a bell at the administration block by the Medical Administrator in case he is to communication with the staff.
- No advanced ICT, most staff have no basic knowledge of using a PC
- The systems available are the District Health Information systems (DHIS)and the Uganda Registration service Bureau (URSB) used in Birth and death certification registration, the system uses a web application to capture birth and death records that take place in hospitals and within communities
- Tele-medicine, programme provided by the Ministry of Health is not effective due to low internet. Therefore computers which were attached to the programme are used by staff for other official work.
- Register are picked form all departments, tallied and filled on the Health Information Management system- HIMF.
- Office space are small compared to the information storage and staff
- The Hospital have few cabinets and non for Bugiri Hospital for information storage especially in the records office.
- Communication is also through notes boards and suggestion box
- It was noted that a number of telemedicine projects have been initiated in Uganda through donor funding but without much success due to the inability to sustain the projects when donors stop funding them

Departments that use ICT

- Surgical
- Medical
- Paediatrics
- Obstetrics and Gynaecology
- Diagnostics
- Pharmacy
- Orthopaedic

Challenges

i) Funding of installed equipment is a challenge, because most projects exist for 1year and run out when staff have not owned and appreciated the project and even learnt to utilize the facilities then phases out.
ii) Standard of office space are small as compared the information to be stored especially the records office, procurement, production.
iii) There is high level of computer illiteracy among the majority of the staff and the population at large
iv) The cost involved in acquiring and maintaining ICT facilities as the main bottleneck in health information access and dissemination.
v) Increasing access to and dissemination of information using ICT; lack of skilled and qualified manpower to manage the operation and functioning of ICT facilities
vi) Too much reliance on donor funding, especially with respect to ICT projects, which means that the projects collapse as soon as donors stop funding them due to lack of funds to sustain their continuing operation,
vii) The underdeveloped ICT infrastructures, dependence on a dial-up modem to access the Internet, and subscription to narrow bandwidth makes the cost of accessing information from electronic source expensive
viii) In addition to the costs and status of infrastructure, several hospitals fail to work together because of the incompatibility of equipment and software. Related to this is the presence and availability of experts in

real time. In cases where consultations have to be made across continents, there is also the issue of time difference and presence of experts when they are required.

ix) The poor ICT infrastructure status in Uganda currently is unable to adequately support the potential benefits of ICTs in the health sector. Very few hospitals are computerized, and when they are, internet access is limited. Most hospitals, including big national hospitals like the Mulago hospital, still use manual systems of recording and storing patient information.

Impacts

ii) Electronic communications lets you combine numerous media - text, graphics sound, video, etc. - into a single message. That can result in far more meaningful communications tailored to the nature of your particular audience

iii) With the Internet you have the ability to transmit and receive large amounts of information quickly to and from individuals and workgroups around the world

iv) Notes can be written on screen using stylus and hand writing-recognition software converts ii in computer text data.

v) The emerging telemedicine and mobile phone-based health technologies will enable medical services to be provided remotely and more efficiently.

vi) Patient data can be shared easily between doctors, pharmacies and even other hospitals where they get services.

vii) Through heath care network, the hospital provides consultations and training courses for community, district, and provincial hospital to improve medical personnel's skills and knowledge in managing complicated conditions by themselves before deciding to refer patients

viii) Reducing the amount of paper work and simplifying patient referring process to improve the hospital efficiency.

ix) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes will reduce to a single step called "One-Stop Service". The hospital encouraged information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet

x) 24-hrs. Consultation: the network hospitals can consult and send laboratory results including Electro cardiograph (ECG) via SMS or facsimile to increase accessing speed to medical services by reducing administrative steps, increase work flow efficiency, reduce cost of providing services.

xi) Internet registration: patients can make doctor appointments through internet to saves time and increase on the efficiency of the work.

xii) The use of ICTs for distance education to enhance the traditional face-to-face TOT (training of trainers) model, while fostering networks that trainees can rely on as a resource when they return to the field.

The facilities required

- Wide area networks (WANs) and local area networks (LANs) that link the operational systems within Hospital.
- Office space especially in the records office and resource centre
- The hardware e.g. desktop computers, printers, scanners, desk phones for every department and a Resource centre which is fully facilitated.
- Software systems e.g. email systems, applications and systems used for pathology reports and patient administration, websites with staff login portal to ease communication.

Recommendations

i) Adequate training for staffs, most of them have no idea about the use of new technologies in regard to communication. This could include: gain experience and knowledge of PCs using Microsoft Windows operating systems and Microsoft Office packages (including Word, Excel, Access, PowerPoint, Outlook and Internet Explorer), problem solving skills and be able to undertake PC installations and fault diagnosis/fixing and experience of working as a team and be able to work under pressure in an extremely busy environment.

ii) Project need to be planed for like 5 years above so as the beneficiaries could appreciate and own it and even able to service them for sustainability.
iii) Recommends for a resource centre for information storage, reading, teleconference, Skype.
iv) Provision of toll-free phones between the person on duty and the doctor, nurse, drivers, this helps to save patients' lives, because the phones are expensive to maintain and especially in time of emergency when there is no airtime, it's hard to communication.
v) There is need to have ICT support technical persons to oversee the project-support technicians assist in the implementation and commissioning of new equipment, participating in demonstrating the use of computer equipment to staff, assisting in the maintenance of computer equipment, keeping records of work undertaken including entry of information into the computerized asset management system participating in demonstrating the use of computer equipment to staff
vi) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes were reduced to a single step called "One-Stop Service". The hospital encouraged information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet
vii) Provision of computers with big capability of storage
viii) Use of solar and backup storage devices to avoid loss of information due to unreliable power or theft
ix) Develop the hospital polices with borrowed ideas from developed countries to improve on the quality of care and established working team including clear objectives to achieve the quality improving purposes.

Stakeholder consultation record:

Name of agency/stakeholder/community:	BUGIRI REFERRAL HOSPITAL				
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐		**ESIA:**	☐
	Sensitisation:	☐		**RAP:**	☐
	Environmental Audit:	☐		**Other (specify):**	EMP & RPF
Date: 27/02/2015					
Project name:	DCIP - Regional Communications Infrastructure project.				
Proponent:	National Information Technology Authority (NITA-U)				

	Name of person	Designation	Contact	Sign/ Initial
1.	ABANGIA OUNDO	PMO	0772-468751	
2.	NABULIME SARAH	Senior Hosp. Adm	0772389923	
3	ATIM JACKLINE	SNO	0772970735	
4.	YOGEIRE HASIFA	STENO-SECRETARY	0782614618	
5	HAMALA SIMON PETER	MRA	0774816060	
6.	KAGOYA FARIDAH	MRA	0772334919	

D) ENTEBBE HOSPITAL

The use of ICT in hospitals is becoming more important as the demands upon hospital-based healthcare change. Identifying directions for development of future ICT for healthcare depends on understanding the context in which solutions are to be deployed. The information below reports on feasibility study, to obtain insights into ICT application in hospitals through interaction with Hospital administrators.

Application of ICT in health information access and dissemination

- Mainly communication is done in tradition way of typing and print out of documents and share with the respective personnel. A lot of printing is done, across all departments of the hospital
- The information is printed out and put on the shelves for users for both out and in-patients
- Some staff members use mobile phones and their person modems for communication, however it's not effective thus its costly
- No advanced ICT, most staff have basic knowledge of using a PC and others don't have because it was not part of their education system.
- The systems available are the District Health Information systems (DHIS)and the Uganda Registration service Bureau (URSB) used in Birth and death certification registration, the system uses a web application to capture birth and death records that take place in hospitals and within communities
- Tele-medicine, programme provided by the Ministry of Health is not effective due to low internet. Therefore computers which were attached to the programme are used by staff for other official work.
- Register are picked form all departments, tallied and filled on the Health Information Management system- HIMF by the records officer and the hardcopies shelved
- Office space are small compared to the information storage and staff
- The Hospital have few cabinets to accommodate the information/ registries
- Communication is also through notes boards and suggestion box
- It was noted that a number of telemedicine project was initiated through donor funding but without much success due to the inability to sustain the projects when donors stop funding them

Departments that use ICT

- Surgical
- Medical
- Paediatrics
- Obstetrics and Gynaecology
- Diagnostics

Challenges

i) Funding of installed equipment is a challenge, because most projects exist for 1year and run out when staff have not owned and appreciated the project and even learnt to utilize the facilities then phases out.
ii) Standard of office space are small as compared the information to be stored especially the records office, procurement, production.
iii) There are not enough health-related databases; most databases do not have full-text articles. They give only abstracts and, therefore, one has to look around for the journal in which the article is published which may not be readily available
iv) There is high level of computer illiteracy among the majority of the staff and the population at large
v) The cost involved in acquiring and maintaining ICT facilities as the main bottleneck in health information access and dissemination.
vi) Increasing access to and dissemination of information using ICT; lack of skilled and qualified manpower to manage the operation and functioning of ICT facilities

vii) Too much reliance on donor funding, especially with respect to ICT projects, which means that the projects collapse as soon as donors stop funding them due to lack of funds to sustain their continuing operation,
viii) The underdeveloped ICT infrastructures, dependence on a dial-up modem to access the Internet, and subscription to narrow bandwidth makes the cost of accessing information from electronic source expensive
ix) In addition to the costs and status of infrastructure, several hospitals fail to work together because of the incompatibility of equipment and software. Related to this is the presence and availability of experts in real time. In cases where consultations have to be made across continents, there is also the issue of time difference and presence of experts when they are required.
x) The poor ICT infrastructure status in Uganda currently is unable to adequately support the potential benefits of ICTs in the health sector. Very few hospitals are computerized, and when they are, internet access is limited. Most hospitals, including big national hospitals like the Mulago hospital, still use manual systems of recording and storing patient information.

Impacts

i) Electronic communications lets you combine numerous media - text, graphics sound, video, etc. - into a single message. That can result in far more meaningful communications tailored to the nature of your particular audience
ii) With the Internet you have the ability to transmit and receive large amounts of information quickly to and from individuals and workgroups around the world
iii) Notes can be written on screen using stylus and hand writing-recognition software converts ii in computer text data.
iv) The emerging telemedicine and mobile phone-based health technologies will enable medical services to be provided remotely and more efficiently.
v) Patient data can be shared easily between doctors, pharmacies and even other hospitals where they get services.
vi) Through heath care network, the hospital provides consultations and training courses for community, district, and provincial hospital to improve medical personnel's skills and knowledge in managing complicated conditions by themselves before deciding to refer patients
vii) Reducing the amount of paper work and simplifying patient referring process to improve the hospital efficiency.
viii) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes will reduce to a single step called "One-Stop Service". The hospital encouraged information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet
ix) 24-hrs. Consultation: the network hospitals can consult and send laboratory results including Electro cardiograph (ECG) via SMS or facsimile to increase accessing speed to medical services by reducing administrative steps, increase work flow efficiency, reduce cost of providing services.
x) Internet registration: patients can make doctor appointments through internet to saves time and increase on the efficiency of the work.
xi) The research: effectiveness of the health sector depends on the quality of research and the ability of health workers to transform the results of research into better health care services. This requires access to up-to-date scientific and biomedical information as well as opportunities to communicate and exchange information with other researchers, which is greatly facilitated by the application and use of ICT
xii) The use of ICTs for distance education to enhance the traditional face-to-face TOT (training of trainers) model, while fostering networks those trainees can rely on as a resource when they return to the field.

The facilities required

- Wide area networks (WANs) and Local Area Networks (LANs) that link the operational systems within Hospital.

- Office space especially in the records office
- The hardware e.g. desktop computers, printers, scanners, desk phones for every department and a Resource centre which is fully facilitated.
- Software systems e.g. email systems, applications and systems used for pathology reports and patient administration, websites with staff login portal to ease communication.

Recommendations

i) Adequate training for staffs, most of them have no idea about the use of new technologies in regard to communication. This could include: gain experience and knowledge of PCs using Microsoft Windows operating systems and Microsoft Office packages (including Word, Excel, Access, PowerPoint, Outlook and Internet Explorer), problem solving skills and be able to undertake PC installations and fault diagnosis/fixing and experience of working as a team and be able to work under pressure in an extremely busy environment.
ii) Project need to be planed for like 5 years above so as the beneficiaries could appreciate and own it and even able to service them for sustainability.
iii) Recommends for a resource centre for information storage, reading, teleconference, Skype.
iv) Provision of toll-free phones between the person on duty and the doctor, nurse, drivers, this helps to save patients' lives, because the phones are expensive to maintain and especially in time of emergency when there is no airtime, it's hard to communication.
v) There is need to have ICT support technical persons to oversee the project-support technicians assist in the implementation and commissioning of new equipments, participating in demonstrating the use of computer equipment to staff, assisting in the maintenance of computer equipment, keeping records of work undertaken including entry of information into the computerized asset management system participating in demonstrating the use of computer equipment to staff
vi) The patient administration system will be streamlined by taking the advantages of information technology. Patient screening and registration processes will reduce to a single step called "One-Stop Service". The hospital encourages information technology and innovations to provide better medical services. Many processes such as patient appointment and referral could be done over the internet
vii) Many organizations are using electronic communications facilities, such as the World Wide Web, as internal communications tools to enhance team work. Many individuals at different locations can work on the same documents, hold meetings and integrate research findings.
viii) Provision of computers with big capability of storage
ix) Use of solar and backup storage devices to avoid loss of information due to unreliable power or theft
x) Develop the hospital polices with borrowed ideas from developed countries to improve on the quality of care and established working team including clear objectives to achieve the quality improving purposes.
xi) ICT systems must be responsive to the information needs of the health services at all levels, particularly at the service delivery level where data are generated and sent to coordinating centers.

Stakeholder consultation record:

Name of apency/stakeholder/community:	ENTEBBE HOSPITAL				
Purpose of consultation (*tick appropriate box*):	**Scoping:**	-		**ESIA:**	
	Sensitisation:			**RAP:**	
	Environmental Audit:			**Other (specify):**	ESMF & RPF
Date:	24/Feb/2015				
Project name:	REGIONAL COMMUNICATION INFRASTRUCTURE PROJECT (RCIP)				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)				

Name of person	Designation	Contact	Sign/ Initial
Mpanga Robert	Hosp. Administrator	0772658768	
NSUBUGA DED	Records officer	0756673294	
KALIBWANI SANYU	SEN. HOSP. ADMIN	0783534923	

E) HOIMA SCHOOL OF NURSING AND MIDWIFERY

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Meeting Record

Week	**10**	Meeting date	**2 March 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Hoima School of Nursing and Midwifery; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Angujeru Pacutho Betty	Hoima School of Nursing and Midwifery	Principal
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☒	☐	☐	Kabagambe Francis	Hoima School of Nursing and Midwifery	Accountant
☒	☐	☐	Byakagaba Wilson	Hoima School of Nursing and Midwifery	Deputy Principal
☒	☐	☐	Arora Jackline Susan	Hoima School of Nursing and Midwifery	Computer lab. Attendant
☒	☐	☐	Katali Loy	Hoima School of Nursing and Midwifery	Library Assistant

	Item
1.	**Introduction**
	The Principal welcomed the team to her office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Small computer skills laboratory with 15 desktops donated by AMREF GIB; ▪ Have internet connection by ULT; ▪ Tutors use internet to sourcing for instruction material; ▪ Students use internet to complete assignments; **Challenges** ▪ Unreliable power supply ; ▪ Slow data transfer; ▪ High data cost; ▪ Few computers **Needs/ suggestions** • More computers; • Affordable and reliable internet; • Staff will require training in e-service delivery; • e-library;
2.2.	**Current records keeping and procurement status**
	▪ Paper copies kept in filing cabinets; ▪ Staff, students and any other official communication records are in hard copy paper form; ▪ Applications to the college and results from the examination board are received in hard copy paper form; ▪ Use chalk and chalkboard; ▪ Use hard copy text book reference Challenges ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Some of the reference material is obsolete; ▪ Most of the library space is occupied by book shelves;
2.3.	**Benefits**
	• E-learning would aid students learning; • E-library will enable tutors and students access recent material; • E-library will aid students in pre- and post-lesson reading; • Minus book shelves, more library space will be available for students' use; • E-cataloguing;
2.4.	**Other concerns**
	▪ No structure to house project equipment but have land for structures; ▪ Ministry of education should avail teacher upgrading courses online;

Stakeholder consultation record:

Name of agency/stakeholder/community:	HOIMA SCHOOL OF NURSING & MIDWIFERY				
Purpose of consultation (*tick appropriate box*):	**Scoping:**			**ESIA:**	
	Sensitisation:			**RAP:**	ESM
	Environmental Audit:			**Other (specify):**	ESMP& RPF
Date:	2-03-2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY NITA-U				
Name of person	**Designation**		**Contact**	**Sign/ initial**	
ANGUJEAU PACUTHO BETTY	PRINCIPAL		0772654080/0752119098	A.P.B	
KABAGAMBE FRANCIS	ACCOUNTANT		0775-281330		
BYAKATABA WILSON	D/PRINCIPAL		0772310213		
ARORA JACKLINE SUSAN	COMPUTER LAB ATTENDANT		0773615725	Susan.	
Kotaki Lay	Library assistant		0785482604		
NAMYALO Madinah Kasuku	Agriculture Ecology		0704165395		
KALYANGO RICHARD	SOCIOLOGIST		0705000425		

F) BISHOP STUART COLLEGE KIBINGO IN MBARARA DISTRICT

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Meeting Record

Week	**09**	Meeting date	**25 February 2015**
		Recorded by	**MN, RK**
Meeting/ subject	**Meeting with Bishop Stuart College Kibingo (Mbarara District); Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Mpora Nathan (NM)	Bishop Stuart College	Deputy Principal
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☐	☐	☐	Tuwesigye Francis (FT)	Bishop Stuart College	DOS/ Tutor
☐	☐	☐	Agaba Patience(PA)	Bishop Stuart College	Computer Instructor
☐	☐	☐	Naturinda Catherine (CN)	Bishop Stuart College	Librarian

	Item
1.	**Introduction**
	The Deputy Principal welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Have 45 desktops supplied by Uganda Communications Commission (UCC); ▪ No internet connection; **Challenges** ▪ Computers often get viruses and recovery software is very expensive; ▪ Students not get enough hands on training during computer skills lessons; ▪ The 45 computers are shared between 500 students and 25 tutors; ▪ Manual cataloguing and filing is tedious; **Needs/ suggestions** • More computers; • Internet connection; • Access to recent publication; • Staff will require training in e-service delivery; • e-library; • Have land to construct structures to house project equipment;
2.2.	**Current records keeping and instruction method**
	▪ Staff, students and any other official communication records are in hard copy paper form; ▪ Applications to the college and results from the examination board are received in hard copy paper form; ▪ Have a small college library accommodating 30 of 500 students; ▪ Use chalk and chalkboard; ▪ Use hard copy text book reference; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Some of the records get misplaced or destroyed; ▪ Some of the reference material is obsolete; ▪ Most of the library space is occurred by book shelves; ▪ Analysis of students' performance requires the Director of Studies (DoS) to prepare an excel sheet from the hard copy results sheet from the examination board. It is a tedious and time consuming exercise;
2.3.	**Benefits**
	• Access to current study material by both tutors and students; • E-results for easy analysis and distribution; • No need of travelling to Kampala to collect results from the examination board; • Access online courses to upgrade; • E-cataloguing
2.4.	**Other concerns**
	▪ Ministry needs to revisit the policy barring students to own and use mobile phones;

Stakeholder consultation record:

Name of agency/stakeholder/community: BISHOP STUART COLLEGE KIBINGO-MBARARA					
Purpose of consultation (*tick appropriate box*):	**Scoping:**			**ESIA:**	
	Sensitisation:			**RAP:**	
	Environmental Audit:			**Other (specify):** ESMF & RPF	
Date: 26-02-2015					
Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)					
Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA)					

Name of person	Designation	Contact	Sign/ Initial
MPORA NATHAN	DEPUTY PRINCIPAL	0772/0701-939357	
TUMWESIGYE FRANCIS	DIRECTOR OF STUDIES/TUTOR	0782734041/0702734041	TUMWESIGYE
AGABA PATIENCE	COMPUTER INSTRUCTOR	0775389788/0701908374	
NATURINDA CATHERINE	COLLEGE LIBRARIAN	0777826902/0754412219	
Mwije DINAH.	~~SENIOR PROCUREMENT OFFICER~~	0701969347	Mwije
Namyalo Madinah K.	Aquatic Ecologist	AWE 0704165395	
KAZYALO RICHIRA	SOCIOLOGIST	ANSE 0705000425	

G) BULEGA CORE PRIMARY TEACHERS COLLEGE (HOIMA DISTRICT)

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Meeting Record

Week	**10**	Meeting date	**3 March 2015**
		Recorded by	**MN, RK**
Meeting/ subject	**Meeting with Bulega Core Primary Teachers College (Hoima District); Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Name	Organisation	Designation
Kato Florence (FK)	Bulega C P T C	Deputy Principal
Madinah Namyalo (MN)	Air Water Earth	Ecologist
Richard Kalyango (RK)	Air Water Earth	Sociologist
Mukuye Dezzie (DM)	Bulega C P T C	Tutor
Tibaleka Anna (AT)	Bulega C P T C	Tutor

	Item
1.	**Introduction**
	The Deputy Principal welcomed the team to her office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	▪ Internet connection provided by Orange Uganda; ▪ Three desktops connected; ▪ Communication is by traditional methods; print and pinup on notices board, and suggestion box ▪ Tutors use internet to sourcing for instruction material; ▪ Students use internet to complete assignments; **Challenges** ▪ Three computers serving population of 450 students and 25 tutors; ▪ Slow data transfer; ▪ Unreliable connection; ▪ High data cost; ▪ Unreliable power supply; ▪ Information gets destroyed or blown off before it is consumed by all intended users; **Needs/ suggestions** • Connection for more computers; • Access to recent publication; • Staff will require training in e-service delivery;
2.2.	**Current records keeping, instruction methods and procurement status**
	▪ Paper copies kept in filing cabinets; ▪ Staff, students and any other official communication records are in hard copy paper form; ▪ Applications to the college and results from the examination board are received in hard copy paper form; ▪ Have a small college library accommodating 25 of 450 students; ▪ Use chalk and chalkboard; ▪ Use hard copy text book reference Challenges ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Some of the records get misplaced or destroyed; ▪ Some of the reference material is obsolete; ▪ Most of the library space is occurred by book shelves;
2.3.	**Benefits**
	• Access to current study material by both tutors and students; • E-results for easy analysis and distribution; • No need of travelling to Kampala to collect results from the examination board; • Access online courses to upgrade; • Minus book shelves, more library space will available for students' use; • E-cataloguing; • E-library
2.4.	**Other concerns**
	▪ Fear for e-waste accumulation; ▪ Ministry should come up with clear guidelines on e-waste disposal: recycling, reuse; ▪ Formulate a policy on computer training at all levels of learning, especially post primary learning institutions;

Stakeholder consultation record:

Name of agency/stakeholder/community:	BULERA CORE PRIMARY TEACHER COLLEGE - HOIMA				
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐		**ESIA:**	☐
	Sensitisation:	☐		**RAP:**	☐
	Environmental Audit:	☐		**Other (specify):**	ESMF & RPF
Date:	3rd March 2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)				

Name of person	Designation	Contact	Sign/ Initial
KATO FLORENCE	DEPUTY PRINCIPAL (P)	0772698619	
MUKUYE DEZZIE	TUTOR	0776010982	
TIBAMEKA ANNA	TUTOR	0774685392	
Nkunyabo Madinah	Aquatic Ecologist	0704165395	
KALYANGO RICHARD	SOCIOLOGIST	0705000425	

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Meeting Record

Week	**09**	Meeting date	**25 February 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Hoima Regional Referral Hospital; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Buliwa Sifura	Hoima RRH	Accountant
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☒	☐	☐	Kivijinja Salim	Hoima RRH	Principal Hosp. Admin.
☒	☐	☐	Were Mubaraka	Hoima RRH	Hosp. Admin.
☒	☐	☐	Dr Ediamu Tom	Hoima RRH	Hosp. Director
☒	☐	☐	Byarufu Habib	Hoima RRH	HRR HOSP
☒	☐	☐	Muyingo Edrisa	Hoima RRH	Records Ass.
☒	☐	☐	Ocen George	Hoima RRH	Lab. Technician

	Item
1.	**Introduction**
	The Principal Hosp. Admin welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Telemedicine equipment were supplied and installed but the project did not take off due to lack of connectivity ▪ The administration block has wireless internet connection, provided by Orange Uganda, accessible within 100m radius; ▪ HIV clinic connection is funded by Sustain; ▪ No ICT department/personnel for medical institutions; ▪ Do not have health management system linking in-patient department (IPD) and out-patient department (OPD); **Challenges** ▪ Internet connection is very expensive to maintain and therefore hospital relies on donor funding (Projects) which not always obvious to come by; ▪ Referral hospital is overwhelmed with minor cases which rather be handled at centre 4 clinic if telemedicine service were in place; ▪ Patients stay longer periods on hospital visits because the unnecessary movements and delays between reception areas, examination rooms, laboratory and scan; ▪ Patients take long in transition between OPD and IPD; ▪ Hospital departments are scattered and therefore sometimes staff to move and leave their work station to deliver documents/ information such HIV test results from laboratory to examinations rooms; ▪ Following patients history, which is every important in diagnostic medicine, is almost impossible; **Needs/ suggestions** • Reliable internet connection; • Standardised health management information system (HMIS); • ICT department/ personnel and technical support; • Training in e-medical service delivery;
2.2.	**Current records keeping**
	▪ At reception areas patients are recorded in form 031 which is a very big book; ▪ E-database project by M-jap collapsed; ▪ Records are manually filed and staked in shelves; **Challenges** ▪ Shelves occupy a lot of space and retrieval of desired information takes a bit of time; ▪ It tedious and time consuming to retrieve a patients file; ▪ Patients OPD don't have medical records kept, except for registration at the reception areas; ▪ Registration form 031 is very bulky and one entry covers several pages;
2.3.	**Benefits foreseen**
	• E-database; • Easy access and follow up on patients anywhere; • Reduced number of patients coming to referral hospital; more cases being handled at centre 4 level through tele-medical services and easy consultation between doctors at all levels.
2.4.	**Other concerns**
	▪ What is the timeline for project implementation? **Response:** These issues are noted and will be documented in the ESMF.

Stakeholder consultation record:

Name of agency/stakeholder/community: HOIMA REGIONAL REFERRAL HOSPITAL

Purpose of consultation (tick appropriate box):

Scoping:		ESIA:	
Sensitisation:		RAP:	
Environmental Audit:		Other (specify): ESMF & RPF	

Date: 03/03/2015

Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)

Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)

Name of person	Designation	Contact	Sign/ Initial
Sifuna Buluma	Accts	0772656449	[signature]
Kivejinja Salim	Principal Hosp Admin	0772459663	[signature]
Were Mubalalea	Hospital Administrator	0702-274494	[signature]
Dr. Ediamu Tom	Paediatric Director	0772471388	[signature]
Namyalo Madinah K	Aquatic Ecologist	0704165395	[signature]
BYARUFU HABIB	HRRHOSP	0772438307	[signature]
MUYINDA EDRISA	RECORDS ASST	0772-631025	[signature]
OCEN GEORGE	LAB TECHNICIAN	0782509172	[signature]
NAMYALO Madinah Kasauli	Aquatic Ecologist	0704165395	[signature]
KALYANGO RICHARD	SOCIOLOGIST	0705000425	[signature]

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Meeting Record

Week	**09**	Meeting date	**25 February 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Mbarara District Officials; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Byamukama Alfred(AB)	Mbarara District	Principal Ass. Secretary
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Aquatic Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☒	☐	☐	Tuhawe Cyril (CT)	Mbarara District	Sen. Information Scientist
☒	☐	☐	Kagaba Allan Rukira (AKR)	Mbarara District	Ag. Principal Human Resource
☒	☐	☐	Nimusiima D. Moreen (MND)	Mbarara District	Records Officer
☒	☐	☐	Katungye Francis I. (FKI)	Mbarara District	PSWO
☒	☐	☐	Isuba Edema Simon (SIE)	Mbarara District	DHO
☒	☐	☐	Mutungi Nathan (NM)	Mbarara District	DFO
☒	☐	☐	Baingana Benson (BB)	Mbarara District	HRO DSC
☒	☐	☐	Arinaitwe Patrick (PA)	Mbarara District	Wetlands Officer
☒	☐	☐	Tusiime Frank (FT)	Mbarara District	Sen. Forestry Officer
☒	☐	☐	Tumusiime Dez (DT)	Mbarara District	Sen. Educ. Officer
☒	☐	☐	Mwije Dinah (DM)	Mbarara District	Sen. Procurement Officer

	Item
1.	**Introduction**
	The Principal Ass. Secretary welcomed the team to the council room. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Majority of heads of department are computer illiterate; Born Before Computer (BBC); ▪ Most district officers do not have desktops nor laptops; ▪ Have an operational district ICT policy; ▪ Optic fibre cable is laid up to the server room but not connected; ▪ District governing structure does include ICT department/ personnel; ▪ Internet connection is on individual basis or ministry for representative at district; ▪ Mainstream ministries have parallel reporting systems handed down to district officers to use; **Challenges** • Use of personal resources such as purchase of airtime and internet data to use for official duties pinches on ones resources; • Transport costs to and from ministries and other meeting places are high; • High cost of accessing internet data; low data transfer rates and unreliability of connection; • Absence of ICT expert makes ICT equipment maintenance very expensive; **Needs** • The district governing structure should include and cater for ICT expert/ personnel; • The reporting and accounting systems of the different ministries should be harmonised; • District officers should be provided with desktops; • District officer will require training on ICT application use; • District has room/ space to house project equipment but security will required **Response** Project components 2 & 3 will provide solutions to challenges of such natural;
2.2.	**Current records keeping and procurement status**
	▪ Staff and service providers' records and other records are hard copy form and kept in box and files which are staked in cabinets or shelves; ▪ Procurement process involves preparation of hard paper document which goes through a number of stages for approval and award of contract or tender; **Challenges** ▪ Retrieval of records is tedious and sometimes risky; ▪ Procurement process is too long that sometimes it stretches beyond project/ services usefulness/ applicable period **Response** Project component 3 will provide solutions to challenges of such natural;
2.3.	**Current Natural resources Monitoring Methods**
	• The resources monitored include; wetlands and forests; • Quarterly physical visits; **Challenges**; • Lack of facilitation; no vehicle and fuel; • Quarterly monitoring regime is not sufficient to keep up with pace of encroachment activities; **Needs** • Access to current remote sensed images; • Training in the analysis and use of remote sensing;

	Item
2.4.	**Benefits**
	• Reduced transport and operational costs; • Easy information sharing at office, district and national levels; • Improved service delivery; records and procurement; • Computerised planning and budgeting manuals; • Monitoring of natural resources using remote sensing.
2.5.	**Other concerns/ Social and Environment**
	• Implementation of project will reduce movement from one office to another and this might result into obesity and heart diseases; • Likely accumulation of e-waste; • Infrastructure installation is likely to have environmental (soil, soil organisms) impacts, though unable to assess impacts of underground installation at the moment;

Stakeholder consultation record:

- **Name of agency/stakeholder/community:** MBARARA DISTRICT HEAD QUARTERS
- **Purpose of consultation** (tick appropriate box): Scoping: ☐ | Sensitisation: ☐ | Environmental Audit: ☐ | ESIA: ☐ | RAP: ☐ | Other (specify): ESMF & RPF
- **Date:** 25 Feb. 2015
- **Project name:** REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECTS (RCIP)
- **Proponent:** NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA)

Name of person	Designation	Contact	Sign/ initial
BYAMUKAMA ACTIVES	PRINCIPAL ASST SECRETARY	0712543837	
TUHAIRWE CYRIL	SEN. INFORMATION SCIENTIST	0701036245	
Kagaba Allan Rukira	Ag. Principal Human Resource Officer	0701374824	
Rimusiima D. moreen	Records Officer	0779547779	
KATUMGYE FRANCIS I	PSWO	0772473891	
Suba Edema Simon	for DHO	0772446723	
Mutungi Nathan	for DHO	0772441150	
BAINGANA BENSON	HRO - DSC	0773877211	
Arinaitwe Patricia	Wetlands Officer	0772534194	
TUSIIME FRANK	SENIOR FORESTRY OFFICER	0772551151	
TUMUSIIME DEO	SENIOR EDUCATION OFFICER	0772887114	

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Week	**09**	Meeting date	**26 February 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Mbarara University of Science and Technology; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Byaryashaba Amos(AB)	MUST	Head Computing Services
☒	☐	☐	Namyalo Madinah (MN)	AWE	Ecologist
☒	☐	☐	Kalyango Richard (RK)	AWE	Sociologist

	Item
1.	**Introduction**
	The Head of Computing Services welcomed the team to office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**
	▪ Cable internet and ¾ wireless provided by UTL and RENU; ▪ Using bandwidth 30MB; ▪ UTL 1GB at $ 200 ▪ MUST is trying to automat academic registry and transcript services with the help of CEMAS-Ug- finance for academic, finance and human resource records; **Challenges** • High cost of internet data; • Slow response of services provider in case of problem; • ICT department is under staffed; • Unreliable power supply; • Unauthorised access; **Response** Project components 2 & 3 will provide solutions to challenges of such natural;
2.2.	**Current records keeping and procurement status**

	Item
	▪ Staff and students 'records and other records are 3/4 hard copy form and kept in box and files which are staked in cabinets or shelves; ▪ Procurement process involves preparation of hard paper document which goes through a number of stages for approval and award of contract or tender; **Challenges** ▪ Retrieval of records is tedious; ▪ Procurement process is too long; **Response** Project component 3 will provide solutions to challenges of such natural;
2.3.	**Needs**
	Suggestion: • Automate more university services; • Policy adjustment; • Strengthen ICT support; **Response** Project components 1 & 3 will provide for such needs;
2.4.	**Benefits**
	• Automation of more university services; • Reduced transport and operational costs; • Easy information delivery to students; • Improved service delivery; records and procurement; • Online courses for students and lecturers
2.5.	**Other concerns**
	Has the project provided for management of e-waste?

Stakeholder consultation record:

Name of agency/stakeholder/community:	MBARARA UNIVERSITY OF SCIENCE & TECHNOLOGY (MUST)				
Purpose of consultation (*tick appropriate box*):	Scoping:			ESIA:	
	Sensitisation:			RAP:	
	Environmental Audit:			Other (specify): ESMF & RPF	
Date: 26-02-2015					
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA)				

Name of person	Designation	Contact	Sign/ Initial
Amos Baryahaba	Head, Computing Services - MUST	0782 501454 amosbarya@must.ac.ug	Mbarara University

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Meeting Record

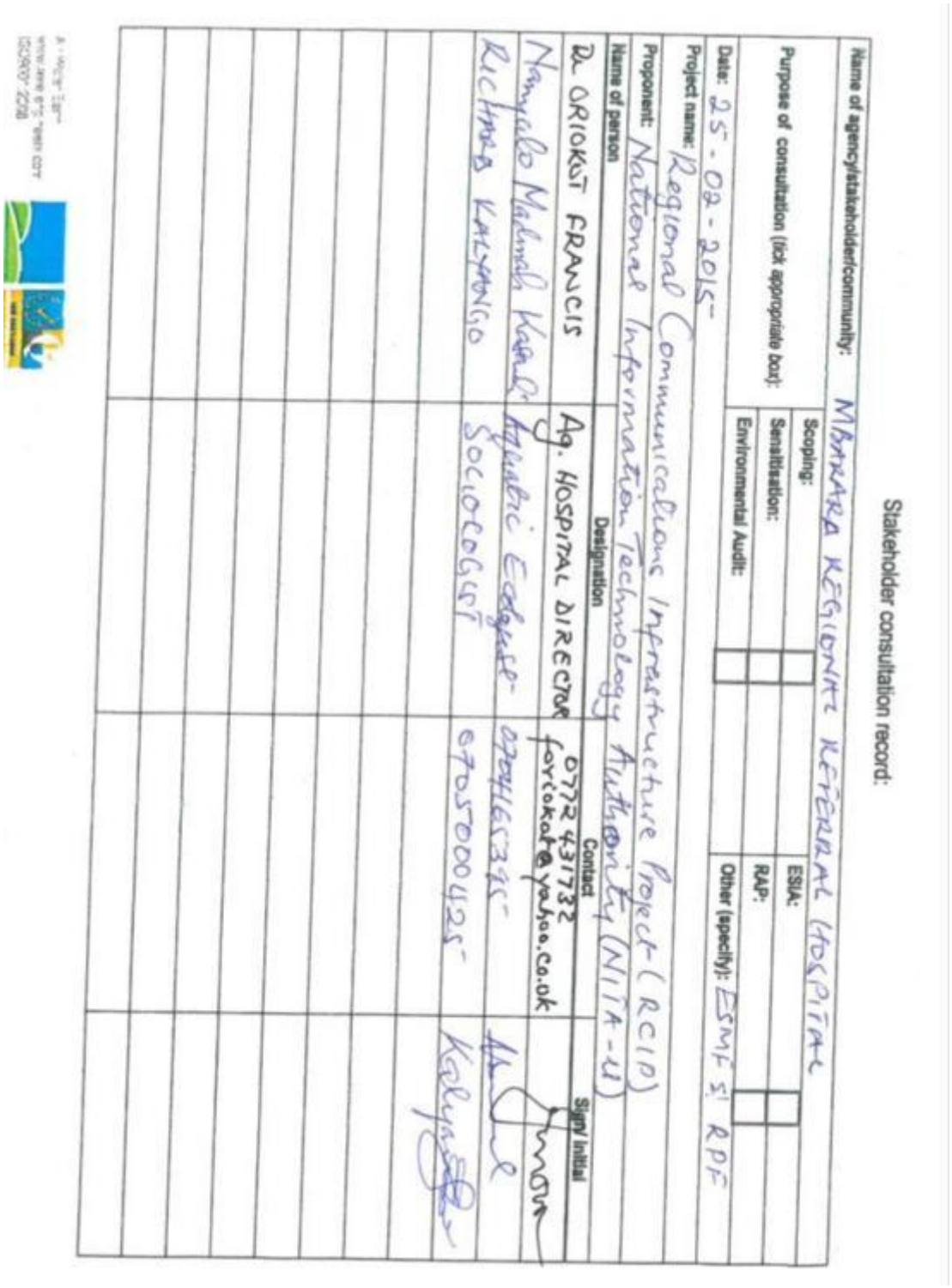
Week	**09**	Meeting date	**25 February 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Mbarara Regional Referral Hospital; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Dr Francis Oriokot	Mbarara RRH	Ag. Hospital Director
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☐	☐	☐			
☐	☐	☐			
☐	☐	☐			

	Item
	Introduction
	The Ag. Hospital Director welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
1.	**Question and Answer Session**
1.1.	**Current ICT status**

	Item
	▪ The hospital has two direct mobile telephone lines for use in case of emergency; ▪ Have internet provided by Uganda Telecom Limited (UTL). Its use is minimal because it is only connected to the Director's office and is very costly to maintain; ▪ The intercom system is down; ▪ The CTV is also down; ▪ Tele-medical facilities were installed but non-functional due to expensive and unreliable internet connection; ▪ No ICT staff at the hospital; **Challenges** ▪ internet connection is restricted to administration; it is slow, unreliable and expensive; ▪ computer maintenance/ replacement is very hard because of absence of ICT expert at the hospital and lack funds; **Response** Project component 3 will provide solutions to challenges of such natural;
1.2.	**Current records keeping and procurement status**
	▪ Patients' records and other records are hard copy form and kept in box and files which are staked in cabinets; ▪ Medical supplies are requisitioned from the National Drug Stores (NDS) with hard paper copy which needs to be prepared in Mbarara and sent to Kampala; **Challenges** ▪ patient's history is hard to follow because of poor retrieval mechanism of the current record keeping method; ▪ delayed medical supplies; ▪ Box and folder files, and cabinets occupy space; ▪ Some records get destroyed by water or termites; **Response** Project component 3 will provide solutions to challenges of such natural;
1.3.	**Needs**
	Suggestion: • The hospital should be provided with ward to wards, ward to administration and hospital to university medical school connection, and the required hardware and software; • The hospital should be supplied with at least two (2) LCDs the visual display of patients in Out-patient department (OPD) and in-patient department (IPD) and for X-ray result analysis; • The hospital should have ICT staff to maintain and service equipment; • Staff training in ICT applications will be required at all levels; • Hospital may not have room and security for the project equipment;
1.4.	**Benefits**
	• Tele-medical services will reduce movement of patients and number referral cases to the National Referral Hospital, Mulago; • E-patients' records keeping which are easy to retrieve any time anywhere; • Reduce patient visit stay time in hospital; reduced movement between examination room and laboratory and/ or scan; • E-medical supplies requisition will ensure timely supplies ;

	Item
1.5.	**Other concerns**
	▪ Hospital and University should agree on sharing modalities; ▪ Staff will be distracted by internet and easy communication for some time;



Stakeholder consultation record:

Name of agency/stakeholder/community: MBARARA REGIONAL REFERRAL HOSPITAL

Purpose of consultation (tick appropriate box): Scoping: ☐ Sensitisation: ☐ Environmental Audit: ☐ ESIA: ☐ RAP: ☐ Other (specify): ESMF & RPF

Date: 25-02-2015

Project name: Regional Communications Infrastructure Project (RCIP)

Proponent: National Information Technology Authority (NITA-U)

Name of person	Designation	Contact	Sign/ Initial
Dr ORIOKOT FRANCIS	Ag. HOSPITAL DIRECTOR	0772 431732 foriokot@yahoo.co.uk	
Namyalo Maimah Kaali	Aquatic Ecologist	0794163315	
Richard Kalyango	Sociologist	0705000425	

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Meeting Record

Week	**10**	Meeting date	**6 March 2015**
		Recorded by	**MN, RK**
Meeting/ subject	**Meeting with Nakasongola District; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Byekwanso Fredrick	Nakasongola District	Ag. COA
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☒	☐	☐	Nawatti Madiinah	Nakasongola District	Ag. Records Officer
☒	☐	☐	Sanyu Damalie	Nakasongola District	Ass. Records Officer
☒	☐	☐	Semambo Sam Maxiwel	Nakasongola District	Ag. Head PDU

	Item
1.	**Introduction**
	The Ag. COA welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Internet connection is down due to high subscription cost and yet it would be slow and unreliable; ▪ No ICT technical personnel; ▪ Most personnel have basic computer knowledge; ▪ No formal telecommunications facility; **Challenges** ▪ Unreliable power supply; ▪ High internet connection costs and ICT equipment service and maintenance; ▪ Lack ICT personnel and technical support; ▪ The district administration is scattered and often people absent themselves in pretence to have travelled to Kampala on official duties; ▪ Internet and telecommunications use is at individual basis making execution of duties sluggish; **Needs/ suggestions** • Affordable and reliable internet; • Training in ICT applications (e-service delivery); • ICT personnel at the district; • District departments interlink;
2.2.	**Current records keeping, reporting and procurement status**
	• Records are in hard paper format and filed in filing cabinets; ▪ Procurement process is long and tedious with lots of lags; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Policy (Procurement)requires that records older than seven years may be disposed of; ▪ Records users sometimes mishandle or misplace documents; ▪ Paper work in procurement and records require space for storage; ▪ Paper work requires stationary which is often in short supply;
2.3.	**Benefits**
	• Reduced line of communication; • Reduced travel cost and time wastage; • Reduced absenteeism of officers; • ICT equipment, software and hardware and technical support; • Better communication within district administration and across the country; • E-database, easy to access and large storage; • Reduced procurement process period; improved unit's efficiency in service delivery; • Reduced paper work and storage bulk
2.4.	**Other concerns**
	Wish for project implementation in the shortest time possible.

Stakeholder consultation record:

Name of agency/stakeholder/community:	NAKASONGOLA DISTRICT				
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐		**ESIA:**	☐
	Sensitisation:	☐		**RAP:**	☐
	Environmental Audit:	☐		**Other (specify):**	ESMF & RPF
Date:	6th March 2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY				

Name of person	Designation	Contact	Sign/ Initial
BYEKWASO FREDRICK	FOR CAO	0772 966324	
NAWATTI MADINAH	AG RECORDS OFFICER	0789-742959	
SANYU DOMANIC	ASSISTANT RECORDS	0778 089431	
SEMAKULA SAM MAXWELL	FOR HEAD PDU	0775-191983	
Namyalo Madinah	Aquatic Ecologist	0704165395	
KALYANGO RICHARD	SOCIOLOGIST	0705000425	

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Meeting Record

Week	**10**	Meeting date	**5 March 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Gulu District Headquarters; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Amono Joyce	Gulu District	Records Officer
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☒	☐	☐	Uhuru Kibwoita Severino	Gulu District	Deputy COA
☒	☐	☐	Oboni Alfonse	Gulu District	PHRO
☒	☐	☐	Labongo Godfrey L.	Gulu District	PHRO/SEC DSC
☒	☐	☐	Oola Eugene	Gulu District	District Planner
☒	☐	☐	Kibwota Denis	Gulu District	Statistcian
☒	☐	☐	Alii George William	Gulu District	Information Management Scientist
☒	☐	☐	Ongom Robert	Gulu District	Ag. DHO
☒	☐	☐	Alobo Betty	Gulu District	Ag. HPAU
☒	☐	☐	Odwar Santa	Gulu District	ALCAO

	Item
1.	**Introduction**
	The Deputy CAO welcomed the team to the council room. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Most of districts officers do not have computers in their offices; ▪ Official communication is paper based; ▪ No formal internet connection; ▪ computer laboratory is inactive since ending of DFID project; ▪ No ICT personnel; ▪ **Challenges** ▪ Unreliable power supply ; ▪ Running costs and sustainability; ▪ Political wing; ▪ Ability engage with equipment; **Needs/ suggestions** • Provision with computers; • Affordable and reliable internet; • Training in ICT applications (e-service delivery); • ICT personnel and technical support; • Government should put strategy for sustainability of equipment software and hardware;
2.2.	**Current records keeping, reporting and procurement status**
	▪ The records office had an isolate database which collapsed with closure of DFID project; ▪ Currently hard paper records keeping is being used; ▪ Records department staff have knowledge capacity to implement the project however will need orientation training in networked database systems; ▪ Planning, budgeting and reporting require to travel to Kampala; ▪ Ministries over different reporting systems running parallel; ▪ Procurement process is long and sometime longer by absenteeism of officers; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Travelling to and fro Kampala is time costly, time consuming and risky; ▪ Its tedious and sometimes confusing to operation more the one reporting system; ▪ Awarding tenders/ contracts and payment to service providers sometimes take too long delay supply/ deliverables;
2.3.	**Benefits**
	• Reliable and affordable internet connection; • Improve performance and efficiency in service delivery; • ICT equipment, software and hardware; • ICT personnel and technical support; • Teleconference to reduce travel and absenteeism frequency; • E-planning and reporting; • Harmonised reporting systems; • Procurement and finance linked to make process shorter and transparent; **Response** Noted

Stakeholder consultation record:

Name of agency/stakeholder/community:	GULU DISTRICT HEAD QUARTERS				
Purpose of consultation (*tick appropriate box*):	**Scoping:**		**ESIA:**		
	Sensitisation:		**RAP:**		
	Environmental Audit:		**Other (specify):**	ESMF & RPF	
Date:	05-03-2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)				

Name of person	Designation	Contact	Sign/ initial
AMONO JOYCE	Records Officer	0773456989	
Ojwoya David	Deputy CAO	0772902468	
UHURU KIBWOTA SEVERINO	SAS/CC	0772574814	
Obori Alfonse	PHRO	0772523806	
Labongo Geoffrey L.	PHDO/SEC DSC	0772580028	
OOLA EUGENE	DISTRICT PLANNER	0772358696	
KIBWOTA DENIS	STATISTICIAN	0757550332	
ALII GEORGE WILLIAM	INFORMATION MGT. SPECIALIST	0787322224	
ONGOM ROBERT	Ag DHO	0774941543	
Akello Betty Moses	Ag HPAM	0772693562	
Odwar Santa	ACAO	0772594299	

N) GULU CORE PRIMARY TEACHERS COLLEGE

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Meeting Record

Week	**10**	Meeting date	**6 March 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Gulu Core Primary Teachers College; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**02**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Akwar C. Denis	Gulu Core PTC	Head of ICT Department
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☐	☐	☐	Akongo Jovannah Sabera	Gulu Core PTC	Librarian/ Tutor

	Item
1.	**Introduction**
	The HOD ICT welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Computer laboratory with 40 desktops with 4 CPUs supplied by UCC; ▪ No formal internet connection, once had internet sponsored by a USAID project; ▪ Have a print book library; **Challenges** ▪ Unreliable power supply; ▪ High internet connection costs and ICT equipment service and maintenance; ▪ Lack of funding; ▪ Some of the reading material is obsolete in relation to new thematic curriculum; **Needs/ suggestions** • Affordable and reliable internet; • Training in ICT applications (e-service delivery); • E-library; • Develop ICT integrated curriculum;
2.2.	**Current records keeping, reporting and procurement status**
	• Records are in hard paper format and filed in filing cabinets; • Students college entry applications and registration are hard paper based; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Retrieval of students records more than five years of completion takes some time;
2.3.	**Benefits**
	• Reliable and affordable internet connection; • Increased enrolment due to e-learning option; • ICT equipment, software and hardware and technical support; • Easy access to e-books and recent publication/ instruction and learning material; • Better communication within the college and between college and ministry;
2.4.	**Other concerns**
	Underground installation might not have significant impact on environment, except where it crosses crop fields and development; In long-time e-waste will accumulate and its final disposal may be a problem;

Stakeholder consultation record:

Name of agency/stakeholder/community: GULU CORE PRIMARY TEACHERS COLLAGE

Purpose of consultation (*tick appropriate box*):			
Scoping:	[ ]	**ESIA:**	[ ]
Sensitisation:	[ ]	**RAP:**	[ ]
Environmental Audit:	[ ]	**Other (specify):**	

Date: 4th – March 2015

Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT

Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U

Name of person	Designation	Contact	Sign/ Initial
DENIS C. AKWAR	TUTOR/H.O.D-ICT	0772-003100/dcakwar@gmail.com	[illegible]
Akongo Jovannah Sabina	Tutor/Librarian	0775779324/akongojovannah@gmail.com	[illegible]
Nanyalo Madinah	Aquatic Ecologist	AWE 0704165395	[illegible]
KAHANGO RICHARD	SOCIOLOGIST	AWE 0705000425	[illegible]

O) GULU REGIONAL REFERRAL HOSPITAL

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Meeting Record

Week	**10**	Meeting date	**5 March 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Gulu Regional Referral Hospital; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Dr Apiyo Paska	Gulu RRH	Deputy Director/ Physician
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist
☐	☐	☐	Omara Julius	Gulu RRH	Med. Records Officer

	Item
1.	**Introduction**
	The Deputy Director welcomed the team to her office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ No formal internet connection and telecommunication facility; ▪ HIV clinic has internet connection support but its use is restricted; ▪ Tele-medicine equipment were installed in 2012 but did not work due to poor/ no internet connection; ▪ Most of staff used personal Orange Uganda modems; ▪ No ICT personnel; ▪ Have a print book and e-library resource centre, for medical students, which has two computers with internet connection; **Challenges** ▪ Unreliable power supply; ▪ Internet is slow and unreliable; ▪ Running costs and sustainability of internet connection to resource centre; ▪ Formal communication is done on individual expense basis; ▪ Acquisition of print books is very expensive and delivery is often slow; ▪ Have collaborating organisations that are have pledged to provide eBooks but internet connection is poor; **Needs/ suggestions** • Affordable and reliable internet; • Training in ICT applications (e-service delivery); • ICT personnel and technical support; • E-library; **Response** Noted;
2.2.	**Current records keeping, reporting and procurement status**
	• Records are in hard paper format and filed in filing cabinets; • Patients are registered at reception areas in the Form 031, • Medical supplies are ordered for using paper requisition forms; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Sending medical supply requests and delivery of supplies take a bit of time; ▪ Retrieval of patients medical records is almost impossible; Response Noted;
2.3.	**Benefits**
	• Reliable and affordable internet connection; • Tele-medical services applicability improved and Teleconference to reduce travel and absenteeism; • ICT equipment, software and hardware, personnel and technical support; • Easy access to e-books and e-learning; • Easy resource and research sharing between universities at national, regional and international levels; • Harmonisation of payrolls; **Response** Noted

Stakeholder consultation record:

Name of agency/stakeholder/community:	GULU ~~NATIONAL~~ REGIONAL REFERRAL HOSPITAL				
Purpose of consultation (*tick appropriate box*):	**Scoping:**			**ESIA:**	
	Sensitisation:			**RAP:**	
	Environmental Audit:			**Other (specify):**	ESMF & RPF
Date:	5th March 2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT (RCIP)				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY (NITA-U)				

Name of person	Designation	Contact	Sign/ Initial
Dr. Pasko APIYO	Physician (Deputy Director)	0777485242 apiyopasko2004@yahoo.co.uk	
OMARA JULIUS	MED. RECORDS OFFICER I/C Library	omarajulius@gmail.com	
KALYANGO RICHARD	Sociologist	AWE 0705000425	Kalyango
Namyalo Madinah K	Aquatic Ecologist	AIR WATER EARTH 0704165395	

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Week	**10**	Meeting date	**4 March 2015**
		Recorded by	**MN, RK**
Meeting/subject	**Meeting with Gulu University; Consultation on Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Regional Communications Infrastructure Project (RCIP)**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Ojera Adad Ogira	Gulu University	Head PDU
☒	☐	☐	Madinah Namyalo (MN)	Air Water Earth	Ecologist
☒	☐	☐	Richard Kalyango (RK)	Air Water Earth	Sociologist

	Item
1.	**Introduction**
	The Head PDU welcomed the team to his office. There were self-introductions of AWE team members. The consultant representative explained the purpose of the visit and scope of the project; gave a brief description of the project and encouraged stakeholder to provide input the ESMF and RPF.
2.	**Question and Answer Session**
2.1.	**Current ICT status**

	Item
	▪ Have internet connection provided by private service provider; ▪ Internet connection is not distributed to all departments; wireless is weak; ▪ Information sharing is through print and pinup, telephone call and email; ▪ The library is most print book based with limited e-library access; **Challenges** ▪ Unreliable power supply ; ▪ Running costs and sustainability; ▪ Ability engage with equipment; **Needs/ suggestions** • Provision with computers; • Affordable and reliable internet; • Training in ICT applications (e-service delivery); • ICT personnel and technical support; • Government should put strategy for sustainability of equipment software and hardware;
2.2.	**Current records keeping, reporting and procurement status**
	▪ The University Academic Registrar's office has e-database and to some extent departments have partial databases; ▪ Currently hard paper records keeping also is being used; ▪ Procurement requires advert in paper media; ▪ Procurement protocol is long with some lags; **Challenges** ▪ Filing cabinets occupy a lot of space and retrieval of desired information takes a bit of time; ▪ Bidding document are usually bulk and require space for storage; ▪ User, budgeting and planning departments do not direct link during procurement process, causing unnecessary delays; ▪ Awarding tenders/ contracts and payment to service providers sometimes take too long delay supply/ deliverables;
2.3.	**Benefits**
	• Reliable and affordable internet connection; • Improve performance and efficiency in service delivery; • ICT equipment, software and hardware; • ICT personnel and technical support; • E-planning, budgeting and reporting; • Improved business to business and business to consumer transaction; • Reduced transaction cost; no media adverts and purchase of bid document; • Reduced operation cycle; bottlenecks sorted out; • Easy monitoring of budgets against planning and controlling expenditure on different lines; • Timely payment to service providers;

Stakeholder consultation record:

Name of agency/stakeholder/community: GULU UNIVERSITY					
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐		**ESIA:**	☐
	Sensitisation:	☐		**RAP:**	☐
	Environmental Audit:	☐		**Other (specify):** ESMF & RPF	
Date: 4 MARCH 2015					
Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT					
Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY					

Name of person	Designation	Contact	Sign/ Initial
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KALYANGO RICHARD	SOCIOLOGIST	0705000425	
NAMYALO MARIAM	AQUATIC ECOLOGIST	0701165395	

Photographs of consultation meetings

	Consultation with Mbarara District Principal Assistant Secretary office of the CAO.
	Consultation with Mbarara District Technical Team.
	Consultation with Gulu District Technical Team.

	Consultations with Hoima District Technical Team.
	Consultation with Deputy director Gulu National Referral Hospital.
	Consultation at Resource Centre, Gulu School of Medicine.

Q) NATIONAL STAKEHOLDERS (MINISTRIES, DEPARTMENTS AND AGENCIES – MDAS)

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Week	**14**	Meeting date	**31 March 2015**
		Recorded by	**LK, MN**
Meeting/subject	**Meeting with National Stakeholders; Consultation on ESMF and RPF for Regional Communications Infrastructure Project (RCIP)-5**	Total pages	**03**

Present	Apology	Copy	Name	Organisation	Designation
☒	☐	☐	Madinah Namyalo	Air Water Earth	Ecologist
☒	☐	☐	Hajj Abdul Nsubuga	NITA	Project Manager
☒	☐	☐	Julian Rweju	NITA	BA
☒	☐	☐	Elizabeth Aisu	Social Consultant	Social Specialist Development
☒	☐	☐	Stephen Mugabi David	MWE	Assistant Commissioner
☒	☐	☐	Charles Kalule (MEng.)	UNBS	Senior Materials Engineer
☒	☐	☐	Julius Mughuma Masereka	MoLG	Principal Urban Officer
☒	☐	☐	Rukundo Tom Ndamira	NFA	EIA Specialist
☒	☐	☐	Kahuuta Godwin J	MoICT	SITO
☒	☐	☐	Eng.Lammeck Kajubi	Air Water Earth	ESMF, RPF Team Leader
☒	☐	☐	John Kyazze	UNBS	Senior Standards Officer
☒	☐	☐	Willie Epalitai	Social Consultant	
☒	☐	☐	Dr. Kitoogo Fredrick	NITA	
☒	☐	☐	Stella Alibateese	NITA	Director, Regulation & Legal Services
☒	☐	☐	Edwin Kiyaga	UNRA	
☒	☐	☐	Justine Namara	UWA	Senior Planning & EIA Officer, SPEA
☒	☐	☐	John Makombo	UWA	Director Conservation
☒	☐	☐	Annet Nannyonga	MoES	SIS/CIM

Item	Update
1.	**Introduction**
	NITA-U representative at the meeting opened the meeting with a welcoming note. There were self-introductions of all members. The consultant presented the ESMF and RPF.

Item	Update
2.	**Question and Answer Session**
	Regulations
2.1.	**Information:** • MICT hired a consultant to prepare regulations, guidelines and standards for e-waste management in Uganda and these are expected to be in place in August 2015; • MICT and Ministry of Public Service are developing a policy to institutionalise ICT in all ministries, local governments, departments and agencies. This will streamline interagency cooperation and communication.
	Operational Status
2.2.	**Inquiry:** Does it mean that areas covered by Phases I & II are already accessing ICT services proposed by this project? **NITA response:** They have infrastructure installed but not yet connected.
2.3.	**Inquiry:** Why is it called "regional" communication infrastructure when it is connecting sites only in Uganda? **NITA response:** This project is part of one that has seen communication infrastructure developed in countries around Uganda. It will also have board connection to neighbouring countries;
2.4.	**Inquiry:** Will internet connection in district local government offices come with cost? **NITA response:** • Government departments and institutions will have to include connection budgets in their financial plans; • In future budget for ICT services will be centrally paid by the Ministry of Finance.
2.5.	**Suggestion:** In national e-Waste regulations, data safety and proof of destruction should be a legal requirement.
	Location of ICT infrastructure
2.6.	**Comment** • The legality and demarcation of road reserves in Uganda is often in dispute, this will cause numerous grievances or legal suits for the project unless compensation is provided in such cases. • If roads along which infrastructure is laid are expand in future, what would happen to project infrastructure? • It is highly recommended that Government plans for communal ducts for all infrastructure along roads which can be used/ rented by any entity wishing to lay lines along or across roads. This will avoid prevalent and never-ending destruction of roads by different infrastructure developers. **Response** • UNRA is demarcating all road reserves of highways in the country.

Item	Update
2.7.	**Recommendations made:** • Development of a permanent duct through all linear infrastructure is past at hire basis; • MoLG is suggesting a forum for urban infrastructure services which will require all infrastructure crossing roads to be approved by a committee; • WMD has a policy for fragile environment (wetlands) that require works crossing such environment to use bridges so that continuity of a given wetland ecosystem is not effected.
2.8.	**Information:** UNRA is formulating a policy that will require any entity using road reserves to pay a fee. **Response:** NITA-U will discuss this issue with UNRA.
2.9.	**Challenges:** There are some places in Uganda that are "hard to reach", "hard to work", "hard to live in" and have no internet networks. These may not benefit as much from such a project due to poor/low cellular network strength.
	e-waste
2.10.	**Inquiry:** Does the project plan to establish regional e-Waste collection and dismantling centres; for re-use, recycle & disposal? **Response:** EU has earmarked Euro 70 million for global management of e-waste and East African states can access this funding as a bloc, to enable development of facilities for proper e-waste management.
2.11.	**Information:** In Uganda , UCC and MICT are taking lead in development of e-waste regulations and standards; Standards on e-waste have been developed by major equipment manufacturers: DELL, HP, MICROSOFT and ones for Uganda just need to bench mark those already developed.
2.12.	**Suggestions:** Government through NITA-U, MICT should provide site for collection of e-waste.
	Stakeholders
2.13.	The following should be involved among project stakeholders; • Uganda Cleaner Production Center because they were the first to collect data on e-waste; • Uganda Investment Authority and indeed Ministry of Trade, Tourism and Industry (MTTI) aid development of facilitation in e-waste management investment; • Ministry of Works and Transport, MoWT • Ministry of Education and Sports Science and Technology • Public Procurement and Disposal of Public assets Authority, PPDA
	Other concerns
2.14.	• NITA-U should have plan for end-of-life for ICT equipment which certainly will turn to e-waster and requiring proper disposal. • There is currently no proper coordination between ministries and MICT for connectivity and ICT systems upgrading but this is essential. • How will the project continue beyond donor funding?

Stakeholder consultation record:

Name of agency/stakeholder/community:	NATIONAL STAKEHOLDERS				
Purpose of consultation (*tick appropriate box*):	**Scoping:**	☐	**ESIA:**	☐	
	Sensitisation:	☐	**RAP:**	☐	
	Environmental Audit:	☐	**Other (specify):**	ESMF & RPF	
Date:	31-03-2015				
Project name:	REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT				
Proponent:	NATIONAL INFORMATION TECHNOLOGY AUTHORITY				

Name of person	Designation	Contact	Sign/ initial
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Mugabi Stephen David	Astrcom / MWE	0782059294	
Kalule Charles (MEng)	S/Materials Engineer (UNBS)	075239157 6(UNBS)	
Julius Mughuma Masereka	Principal Urban Officer (MOLG)	0772506345/0702-	
RUKUNDO TOM NDAMIRA	GIA SPECIALIST / NFA	0772591205	
KAHUTA GODWIN J	SITO - MoICT	070/1/801834	
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Willie Epaliatu	Social Dev't Specialist	0782-444953	
Elizabeth Atim	Social Dev't Specialist	0772-616489	

Stakeholder consultation record:

Name of agency/stakeholder/community: NATIONAL STAKEHOLDERS					
Purpose of consultation (*tick appropriate box*):	**Scoping:**	✓	**ESIA:**		
	Sensitisation:		**RAP:**		
	Environmental Audit:		**Other (specify):**	ESMF & RPF	
Date: 31-03-2015					
Project name: REGIONAL COMMUNICATIONS INFRASTRUCTURE PROJECT					
Proponent: NATIONAL INFORMATION TECHNOLOGY AUTHORITY					

Name of person	Designation	Contact	Sign/ initial
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ANNEX 6: GRIEVANCE REDRESS MECHANISM

The World Bank has introduced a Grievance Redress Service (GRS) requiring the Borrower to provide a grievance mechanism, process, or procedure to receive and facilitate resolution of stakeholders' concerns and grievances arising in connection with the project and the Borrower's environmental and social performance.

According to the GRS project-affected communities and individuals may submit complaints regarding a Bank-financed project to the project grievance redress mechanism, appropriate local grievance mechanism, or the World Bank's corporate Grievance Redress Service (GRS).

Table below shows a generic grievance redress mechanism that can be applied to the project.

Steps	Process	Description	Time frame	Other information
1	Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction;	1 Day	Email address; hotline number
2	Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	4-7 Days	Significance criteria Level 1 – one off event; Level 2– complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions
3	Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	
4	Development of response	• Grievance assigned to appropriate party for resolution • Response development with input from management/ relevant stakeholders	4-7 Days 10-14 Days	
5	Response signed off	Redress action approved at appropriate levels	4-7 Days	Senior management staff of NITA-U should sign off
6	Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days	
7	Complaints Response	Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	
8	Close grievance	Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party	4-7 Days	Final sign off on by General Manager or Managing Director of NITA-U

		arbitration or resort to court of law		

ANNEX 7: PLAN FOR INVOLVING STAKEHOLDERS IN RCIP

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
National	National Forestry Authority, NFA	Conservation of central forest Reserves	Control and monitoring impact on Mabira Forest	No	Yes especially in regard to Mabira Forest
	Ministry of Information and Communications Technology (MICT)	Provide strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT sector	- Coordination and supervision; - Enabling policy formulation;	No	Yes especially in regard to policy advocacy and formulation for enabling policies
	National Information Technology Authority (NITA-U)	Project proponent	Project implementation	No	Yes
	Uganda Communications Commission (UCC)	Regulate; i. Licensing and standards; ii. Spectrum management; iii. Tariff regulation; iv. Research and development; v. Consumer empowerment; vi. Policy advice & implementation; vii. Rural communications development; and Capacity building.	- Advice and implement enabling policies; - Issue license to operators; - Tariff regulation; and - Capacity building	No	Yes regarding policy implementation; licensing and standards; and capacity building for ESMF and RCIP implementation

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
	Ministry of Energy & Mineral Development (and other related agencies: UETCL, UEGCL, REA, ERA)	MEMD has the mandate to establish, promote the development, strategically manage and safeguard the rational and sustainable exploitation and utilization of energy and mineral resources for social and economic development. ERA works to regulate the generation, transmission, distribution, sale, export & import of electrical energy in Uganda, and to guide the liberalization of the electricity industry, manage licensing, rates, safety and other matters concerning the electricity industry. REA has the mandate to facilitate the provision of electricity for social - economic rural transformation in an equitable and sustainable manner.	MEMD also works to create an enabling environment in order to attract investment in the development, provision and utilisation of energy and mineral resources. ERA works to establish a tariff structure and to investigate tariff charges; to approve rates of charges and terms and conditions of electricity services provided by transmission and distribution companies; and to approve standards for the quality of electricity supply services provided; REA made recommendation to the Rural Electrification Board to prioritize project sites for Rural Electrification Programme.	No	Yes

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
	Ministry of Gender, Labour and Social Development The Directorate of Gender and Community Development; The Directorate of Labour, Employment and Occupational Safety and Health: The Directorate of Social Protection comprises of three departments:	MGLSD has the mandate to empower communities to harness their potential through cultural growth, skills development and labour productivity for sustainable and gender responsive development. The Directorate focuses on formulation and review of policies, standards and guidelines, co-ordination and monitoring the implementation of Government policies and plans for social transformation. Inspects quality of occupational health and safety in workplace environment Formulate and review policies for specified vulnerable groups; develop guidelines and action plans; develop training manuals; carry out monitoring and evaluation and impact assessment; promote equal opportunities and rights for all; and direct special interventions in areas like human rights, HIV/AIDS and skills development	Initiate, formulate, implement and evaluate laws, policies and programmes that address issues of gender, culture, community development; and the family institution Inspection of labour conditions during dam/ line construction	No	Yes

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
	Ministry of Tourism, Trade & Industry (MTTI) Department responsible for museums and monuments in Ministry of Tourism, Trade & Industry (MTTI)	Formulates and reviews, policies, legislation, regulations and standards for sustainable development of tourism in Uganda Preservation of artifacts and antiquities of cultural heritage value	Provide policy guidance during project development Salvage of "chance-finds"; monitoring major excavations to ensure resources of cultural heritage value are not destroyed	No	Yes
	National Environment Management Authority, NEMA	Responsible for coordinating, monitoring, regulating and supervising environmental management in Uganda	Review of Scoping Report, approval of ToR, review of ESIA report and its approval.	No	Yes
	Ministry of Local Government	Sets policy for local governments	Will provide policy overview on mandate, role and responsibilities of district local governments during project implementation and subsequent monitoring	No	Yes
	Ministry of Agriculture, Animal Industry & Fisheries, MAAIF	To support production of crops, livestock and fisheries so as to ensure improved quality and quantity of agricultural produce for domestic consumption, food security and export	Expected to provide guidance on soil productivity which will be one of the key factors in selecting resettlement host sites for physically displaced subsistence farmers.	No	Yes

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
	Ministry of Water & Environment (MoWE)	The MoWE has the mandate to promote and ensure rational and sustainable utilization and development and safeguard of water resources and environment for social and economic development as well as for regional and international peace.	Rational and sustainable utilization of water resources	No	Yes
	Directorate of Water Development (DWD)	DWD works to promote coordinated, integrated and sustainable water resources and provision of water for all social and economic activities including power generation	DWD also issues permits for construction of structures across watercourses Issue permit for contractor to abstract/ use water during project construction		
	Directorate of Water Resources Management (DWRM)	DWRM is responsible for developing and maintaining national water laws, policies and regulations; managing, monitoring and regulation of water resources through issuing water use, abstraction and wastewater discharge permits.			
	Makerere University	To provide innovative teaching, learning, research and services responsive to National and Global needs	Innovative teaching	No	Yes
Local Governments	Nebbi, Arua, Lira, Kitgum, Mbale, Tororo, Masaka, Mubende, Mbarara and Kasese districts, and District Local Governments	Have jurisdiction over project areas	Political goodwill; community sensitization; monitoring construction and operation activities	No	Yes

Category	Stakeholder	Mandate	Potential role	Marginalized?	Key?
	Local Council Leaders (LC I-V) KCCA				
Similar investments	Telecommunications, postal, and broadcasting operators	Private partners in the sector	Provide insight and practical experiences on possible impacts and feasible control actions	No	Yes
Funding agencies	World Bank; IDA; ADB; IDB	Key stakeholder will be one funding the project	Ensure requirements pegged to funding are met	No	Yes
Tourism industry	Uganda Tourist Board Private tourism operators	Promote tourism in Uganda	Be involved in identification of potential impact on tourism	No	Yes
National Trade manufacturer's associations	▪ Uganda Manufacturers Association (UMA), ▪ Uganda Investment Authority (UIA), ▪ Uganda National Chamber of Commerce and Industry (UNCCI)	Inform government policies to ensure conducive investment climate in Uganda	Provide views of industrialists and manufacturers about potential benefits of the project to national economy (e-commerce and e-signatures)	No	Yes

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