SFG1993 V4

OYO STATE

Ibadan Urban Flood Management Project

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

For the

RECONSTRUCTION OF THE SAASA RIVER CULVERT, APETE ROAD-OSAJIN

FINAL REPORT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Ibadan Urban Flood Management Project (IUFMP)

FINAL REPORT

Submitted to:

Project Implementation Unit
Ibadan Urban Flood Management Project (IUFMP)
Ibadan Oyo State
NIGERIA

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LIST OF ABBREVIATIONS AND ACRONYMS

BP	Bank Policy
BOD	Biochemical Oxygen Demand
CBOs	Community Based Organizations
CDA	Community Development Associations
DO	Dissolved Oxygen
EA	Environmental Assessment
EC	Electrical Conductivity
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESO	Environmental Safeguard Officer
ESS	Environmental and Social Screening
FEPA	Federal Environmental Protection Agency
FMEnv	Federal Ministry of Environment
GoN	Government of Nigeria
GPS	Global Positioning System
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HSE	Health Safety and Environment
ISDS	Integrated Safeguards Data Sheet
Lexp	Exposure Levels
LGA	Local Government Area
Lmax	Maximum Noise Levels
Lmin	Minimum Noise Levels
MDAs	Ministries Departments and Agencies
MEH	Ministry of Environment and Habitat
MoW	Ministry of Works
ND	Not Detected
NESREA	National Environmental Standards and Regulations Enforcement Agency
NGOs	Non-Governmental Organization
NIMET	Nigeria Meteorological Agency (NIMET)
OP	Operational Policy
OYSG	Oyo State Government
PAD	Project Appraisal Document
PC	Project Coordinator
PDOs	Project Development Objectives
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
RAM	Risk Assessment Matrix
sp	Species
SPM	Suspended Particulate Matter
TOR	Terms of Reference
WMP	Waste Management Plan

Currency and Equivalents

Currency Unit = Nigerian Naira
US$ = N200

EXECUTIVE SUMMARY

ES 1: Project Background

The World Bank is supporting the Government of Nigeria and the Oyo State Government to prepare the Ibadan Urban Flood Management project (IUFMP) that aims at developing a long-term flood risk management framework by initiating risk assessment, community awareness, and providing enough flexibility in the project design to make changes based on learning. Specifically, the Bank's support will finance some priority investments related to improving the infrastructure of Ibadan City, especially those destroyed by August 26, 2011 floods.

ES 2: Triggered World Bank Environmental and Social Safeguard Policies

The proposed project has triggered the following policies: OP/BP 4.01: Environmental Assessment; OP/BP and OP/BP 17.50: Disclosure of Information. The project is categorized as a B in accordance to the provisions of the World Bank OP: 4.01 on Environmental Assessment. This implies that the potential environmental and social impacts likely to arise will be minor, site-specific and manageable to a reasonable level.

ES 3: Description of the Proposed Intervention Works

The reconstruction works proposed for this site will involve medium-sized civil works which is a replacement with a twin box culvert (3x2m), construction of a raised roadway across the valley of about 250m with a rectangular drainage (1x1m) and construction of 100m retaining wall of up to 3m high.

ES 4: Potential Positive and Negative Environmental and Social Impacts

Potential Positive Environmental Impacts	**Potential Positive Social Impacts**
• Improved solid waste management; • Soil stabilization and regeneration; • Improved soil quality and quantity through improved drainage and flood protection systems; • Reduction in the phenomenon of flooding in the project area; • Restoration of vegetative cover and ecosystem; • Improved ecological balance and biodiversity conservation; • Reduced siltation along stream course with resultant preservation of ecosystem and aquatic life; • Reduced risks of floods due to reduced siltation; and • Disaster Risk Reduction from flooding events.	• Job creation: Implementation activities will have a positive impact for the local economy, particularly with regard to job creation (labour for construction works, maintenance and monitoring) and related activities such as petty trading; • Preservation of infrastructure (culvert, drains, approach roads); • Employment of labour and development of personal skills; • Improved livelihood/welfare; • Construction of the culvert: Culvert will allow improved health conditions, health and safety of people, effective sanitation, reducing the mortality and morbidity associated with floods; • Construction of the culvert: This will increase the resilience of communities at risk of flooding, and the preservation of assets of households and businesses against flood risk; • Income generation: Civil works will have some impacts on the local economy, with the use of local SMEs whose project will lead to a high use of labour; • Increase in household savings and welfare; • Increased social interaction; • Diversification of livelihood and increased productivity; and • Lessening vulnerability of people and property.

Potential Negative Environmental Impacts	**Potential Negative Social Impacts**
• Air Quality Deterioration • Noise and Vibration • Surface and Ground Water Contamination • Vegetation Loss • Ecosystem Disturbance & Displacement/Destruction of Fauna • Soil Erosion and Loss of Soil Quality • Soil Contamination • Solid and Liquid Waste Generation	• Community Perception; • Traffic Congestion; • Temporal diversion of access to motorists and businesses; • Temporal Disruption of Public Utility Services • Gender Impacts • Occupational Health and Safety • Public Health and Safety

ES 5: Environmental and Social Mitigation and Monitoring Plan

The ESMP outlines the measures to be taken during project implementation and operation to control negative environmental and social impacts and the mitigation and monitoring actions needed. The ESMP components include recommended mitigation measures, description of monitoring program; institutional arrangement including capacity building; implementation schedule; and cost estimates. Table 3.3 chapter 3 gives a comprehensive detail of the ESMP.

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Mitigation Measures

Feasible, practical and cost effective measures to reduce the potentially significant negative environmental and social impacts to acceptable levels have been developed. These measures are described in Table 3.3 and mainly relate to the adoption of best environmental practices in the design, construction and operations of the project. Consequently the mitigation measures will be included in the bid and contract documents for the successful enterprise to implement. Some of the key mitigation measures proposed in the ESMP include; suppression of dust emissions, proper maintenance of vehicles and machinery, fitting of exhaust mufflers/silencers, control of oil spillages, storm and flood water, proper management of spoils, selective land clearance and re-vegetation. Other measures include adoption of best engineering practices, preparation and implementation of Waste Management Plan (WMP) and site specific Health, Safety and Environment (HSE) Plan to address occupational health issues.

Monitoring Program

In order to effectively and efficiently implement this ESMP, an environmental and social performance monitoring program has been designed to ensure implementation and check effectiveness of recommended mitigation measures. Internal and external monitoring will be conducted to ensure compliance with the ESMP. The detailed proposed mitigation measures and related monitoring activities are provided in the Environmental and Social Mitigation and Monitoring Plan in Table 3.3, Chapter 3

ES 6: Institutional Arrangements

The implementation of this ESMP requires the involvement of various institutions and stakeholders fulfilling roles to ensure sound environmental management during the life cycle of the project. The institutional arrangement as well as the roles and responsibilities of the various institutions and persons that will be involved in the implementation, monitoring and review of the ESMP are discussed in Section 3.5 in the main report. They include Oyo State Ministry of Environment and Habitat, FMEnv, Project Implementation Unit (PIU), World Bank, Contractor, CSOs/CBOs, Local Government as well as other relevant state MDAs. The safeguards unit will be responsible for the supervision of the ESMP under the project coordinator and ensuring that the environmental and social requirements are satisfied.

ES7: Capacity Building and Training

Capacity building measures will be required to ensure that institutions involved in implementing the various ESMP components have the necessary knowledge and skills to fulfill their roles. The broad areas of capacity building and proposed training programme are presented in Table 3.5, Chapter 3. The cost for capacity building is estimated at US$10,500 (N2, 100,000).

ES 8: Implementation Schedule

The activities related to environmental and social management and monitoring will be integrated in the overall construction schedule. The key elements of the implementation schedule are presented in Table 3.6, Chapter 3.

ES 9: Cost Estimate

The total indicative cost for implementing the ESMP is estimated **at Forty Thousand Four Hundred and Eighty Dollars only ($40,480)** which is **Eight Million and Ninety Six Thousand Naira Only (N 8,096,000).** The breakdown is as shown below:

Item	Responsibility	Cost Estimate in Nigerian Naira (N)	Cost Estimate In US Dollars (US$)
Mitigation	PIU, Contractor	3,240,000	16,200
Monitoring	PIU, Oyo State Ministry of Environment and Habitat, NESREA, Oyo State Waste Management Board	2,020,000	10,100
Capacity Building	PIU, Oyo State Ministry of Environment and Habitat/Other relevant MDAs	2,100,000	10,500
Sub- Total		7,360,000	36,800
Contingency	10% of Sub- Total	736,000	3680
Total		**8,096,000**	**40,480**

ES 10: Disclosure

After review and clearance by the World Bank, the ESMP will be disclosed at the Project Implementation Unit, Oyo State Ministry of Environment and Habitat, the Local Government Office, the host community as well as the World Bank Info Shop. The purpose will be to inform stakeholders about the project activities; environmental and social impacts anticipated and proposed environmental and social mitigation and monitoring measures.

ES 11: Public Consultation

Consultation was carried out at different levels with relevant stakeholders and members of the community. These included: State MDAs, Traditional Rulers, Community Leaders, Community Association Members, Women Groups, Youths and NGOs/CBOs. See chapter 4.

ES 12: Summary and Recommendations

The roadway that once connected two parts of the city suburbs is impassable. Alternative routes do exist but these are much longer. However, the following summary and recommendations are listed below.

- The contractor and PIU coordinate with the Oyo State Federal Road Safety Commission and Oyo State Traffic Management Agency all through construction works on site to ensure that safety is maintained and potential traffic impact managed;
- Design and construct a temporary alternative pedestrian access bridge for community members school children, the elderly, pregnant women, physically challenged etc) who use the existing dilapidated wooden access;
- Proper lightening and relevant road signages and barriers should be used during construction works for safety precautions;
- Community members sensitized and duly informed on the time and duration of civil works through consultations;
- Take into cognizance the topography of the approach roads during construction as well as side drains for proper discharge downstream and avoid sheet erosion;
- Vegetation covering stream banks be cleared and width widened along the project area of influence.
- The water ways have a lot of obstacles such as silt and solid waste which requires clearing and evacuation;

- Priority given to local workers during the construction phase. This would reduce social problems at the community levels;
- Carry the community along during project implementation and mobilize them to provide community security for personnel working on site;
- Construction works is carried out in an environmentally sustainable and socially responsible and inclusive manner;
- Potential environmental and social impacts of sufficient magnitude that could interrupt the execution of the project were not detected. Although, there were few negative environmental and social impacts that may potentially occur due to the activities associated with the proposed works but adequate mitigation measures have been provided to address them;
- The proposed intervention work is most desirable because of the obvious environmental, health and socio-economic benefits. These far out-weigh the negative environmental and social impacts that could arise in the course of implementation; and
- The combination of engineering and biological approach (Vegetative land management measures) adopted in slope stabilization work to forestall undermining and washing away of structure.
- Appropriate institutional framework has been drawn up to implement the mitigation measures and environmental management plan while the proposed monitoring programmes shall be set in motion as soon as possible.

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CHAPTER ONE: INTRODUCTION

1.1 Saasa River Culvert Study Area Apete Road Osajin

The Sassa River culvert is one of the priority sites for intervention under the Ibadan Urban Flood Management project (IUFMP). The culvert is located at about 1.7km from Ajibode junction in Ido Local Government Area. The site falls within the Ibadan Metropolis and lies between x and y coordinates N7.45768 and E3.87810 and at altitude 190msl. This area is an average of $25m^2$ around the culvert.

1.2 Description and Rationale of the Saasa River Culvert Study

The river culvert damaged by the flood of 26th August 2011 is located at Saasa - Osajin community in Apete; a sub- urban community in Iddo Local Government Area of Oyo State. The site falls within the Ibadan metropolis. A small catchment drains through a collapsed concrete (2m x 3m) box culvert, which served as a link between two communities that are presently cut off. The collapsed culvert is overgrown with weeds.

Presently, a wooden pedestrian bridge serves as the link between the two communities. The approach to the culvert on both sides of the river is highly eroded and would require re-construction together with a properly sized culvert across the river. The roadway that once connected two parts of the city suburbs is now impassable. Alternative parallel routes do exist but these are much longer.

The topography is a gentle slope and characterized by lateritic and sandy soil formations. The area receives surface water (upstream) from Saasa stream. Vegetation in the area is composed basically of sparse trees, high shrubs and grasses by the river banks downstream. However, the original vegetation has been undergoing modifications due to urban expansions and human activities.

Human activities have impacted on the environment resulting in series of environmental and social concerns such as Sheet erosion and a stagnant/dilapidated fresh water fish pond. The pictorial description of the environmental issues at the proposed site is shown in Figure 1.1.

1.3 Description of the Proposed Intervention Works

The reconstruction works proposed for this site will involve medium-sized civil works is a replacement with a twin box culvert (3x2m), construction of a raised roadway across the valley of about 250m with a rectangular drainage (1x1m) and construction of 100m retaining wall of up to 3m high.

The earth works includes site clearing, demolition of existing structure and disposal of debris at the approved dumpsites, relocation of six (6) numbers of electric poles and diversion of water body during the raining season.

Specifically, the design includes:

- Reclamation of the eroded part of the approaching roads by filling and compaction;
- Construction of chute channel to convey the flow from the area down to the culvert bed; and
- Rehabilitation and stabilization of the Saasa River Culvert.

The objective of the project is to allow for free flow of water and ease of crossing by both pedestrian and vehicles, and consequently prevent flooding. Figure 1 shows the engineering design (survey and topography) of the study area.

Figure 1.0 shows the engineering design (survey and topography) of the study area and the points of intervention

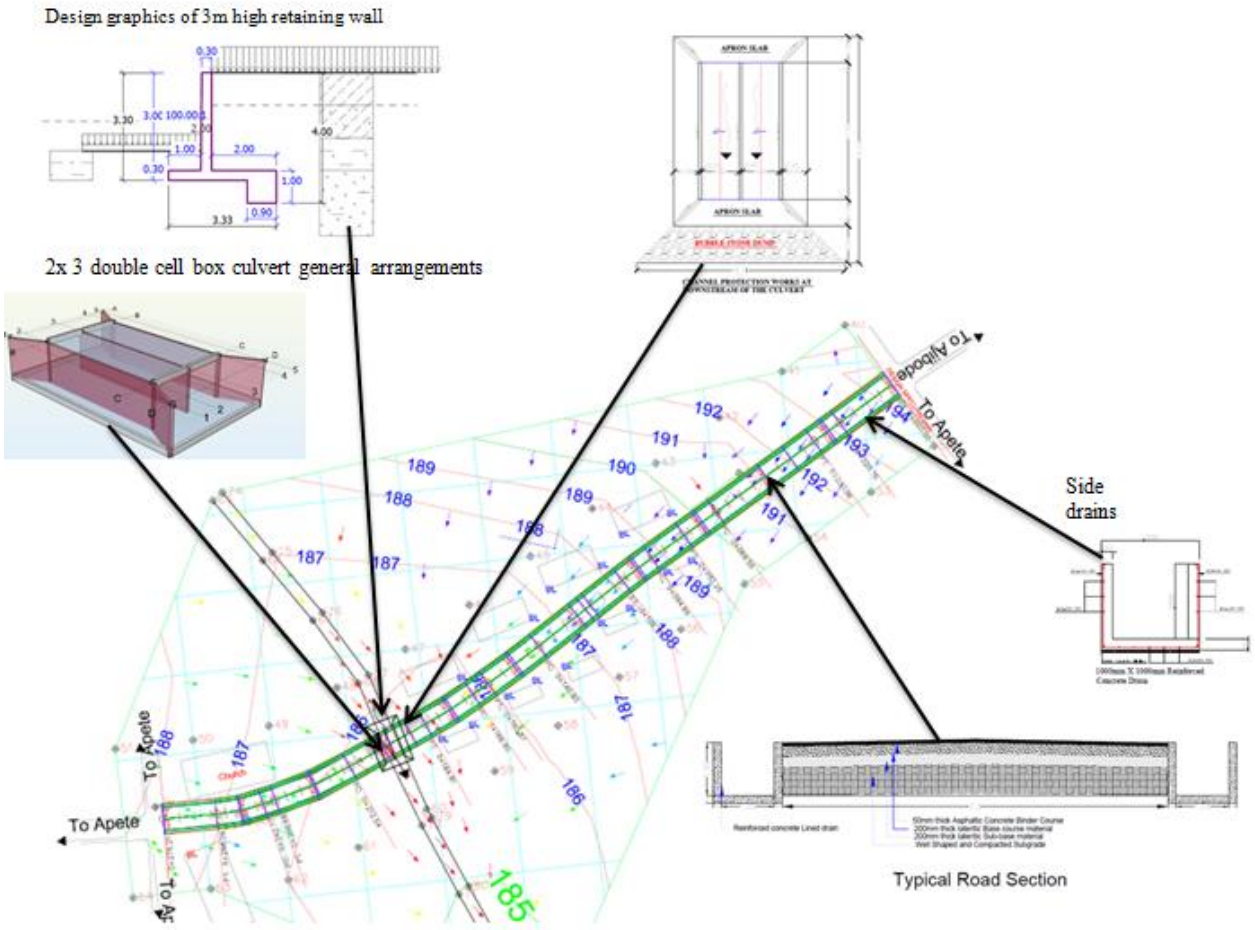
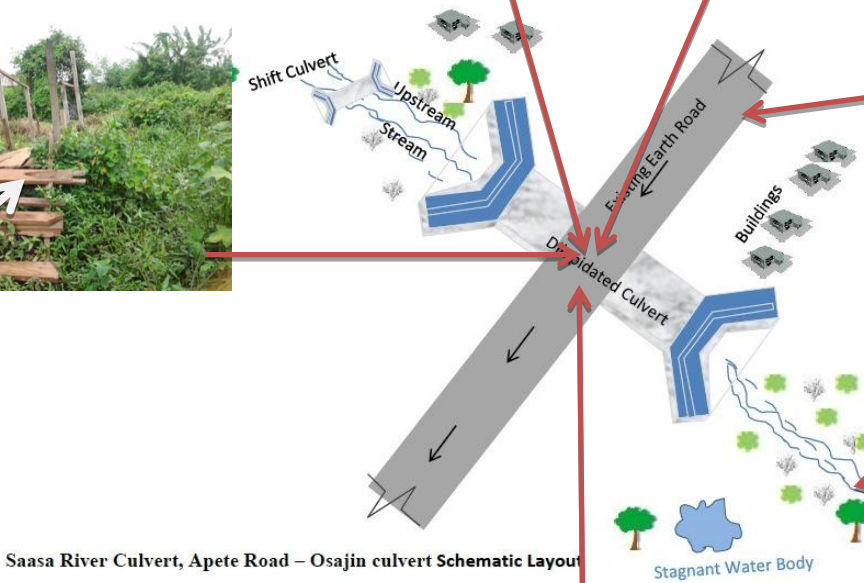


Figure 1.0: Engineering design (Survey and topographic map) of Saasa Osajin Site and points of intervention

Plate 1: Dilapidated make shift pedestrian cross over

Plate 2: Collapsed culvert overgrown with weeds

Plate 3: Solid waste in side drains



Saasa River Culvert, Apete Road – Osajin culvert Schematic Layout

Plate 4: Solid waste in River

Plate 5: School children using make shift cross over

Figure 1.1: Schematic diagram of project site showing environmental and social issues

1.4 Project Activities

The proposed works will be carried out in three phases namely; Pre-construction, Construction and Operational and Maintenance phases.

Table 1.0: Proposed activities

Phase	Proposed Intervention	Activities
Pre-Construction	Marking Clearing Mobilization	• Surveyors would mark the boundaries of the working areas around the site; • Vegetation that falls within the working areas will be cleared • project site will be cleared to allow for creation of access road to the site, • Mobilization of trucks, vehicles and other equipment as well as installation of camp offices and workshops.
Construction	Road works	• Bush clearing; • Scarification; • Sub-grade preparation; • Earthworks; and • Construction of base course and asphalt layers
	Side drains	• Site clearing and excavation; • Drainage structure and facilities; • Retaining walls and earth – filling; and • Any other ancillary works.
	Culvert works	• Excavation, and stabilization • Construction of bed, and concrete screeding. • Construction of reinforced concrete wall (Abutments), • Construction of deck concrete, • Construction of Parapet wall
Operational and Maintenance	Culvert and road maintenance	• Clearing of culverts and trenches of solid waste and silt; • Regular checks of road surface; • Regular checks and exchange of wearing course after number of years; • Exchange of binder course after number of years; • Inspections of foundations, joins etc; • Routine pavement inspections; • Routine maintenance condition surveys e.g. inspections of foundations, joins etc; and • Routine maintenance condition surveys etc.
	Others	• Maintenance of road restraint systems; • Maintenance of traffic control and information systems; • Maintenance of road markings and studs; • Maintenance of fencing walls screens and environmental barriers; and • Maintenance of the road verge (including landscaping and rehabilitation).

1.5 Objectives of the ESMP

The overarching objective of the ESMP is to ensure that the environmental and social impacts likely to arise from the project activities are addressed and appropriate mitigation measures integrated into project implementation and operation in order to protect human and environmental health.

The specific objectives of the ESMP are to:

- Comply with applicable national environmental legislations, standards and guidelines as well as the World Bank's environmental and social safeguard policies;
- Achieve and demonstrate sound environmental performance based on the principle of continual improvement;
- Identify potential positive and negative environmental and social impacts that may arise from the implementation and operation of the project;
- Proffer management actions that need to be implemented in order to mitigate the negative environmental and social impacts and enhance the positive impacts of the project;

- Propose environmental and social monitoring programmes that will ensure that mitigation measures are implemented and effective during project execution and timely corrective actions are taken where required;
- Propose institutional arrangements, incorporating roles and responsibilities of stakeholders involved in management actions and monitoring;
- Describe capacity building and training requirements for effective implementation of the ESMP;
- Outline the implementation schedule and reporting procedures for the ESMP;
- Communicate environmental and social expectations and requirements throughout the project life cycle; and
- Ensure the allocation of sufficient resources for effective implementation.

1.6 Rationale for ESMP

The proposed rehabilitation works at the Sassa River culvert according to the Environmental and Social Screening Checklist prepared for potential projects under the IUFMP is categorized as a Category "B" project according to the World Bank's Operational Policy on Environmental Assessment OP 4.01. The categorization is justified on the basis of the potential negative environmental and social impacts of the project on the biophysical and social environment.

It is therefore expected that this priority site is likely to have; (i) limited adverse impacts on the environmental and society living around the sites;(ii) the activities of the project are site specific and the impacts are irreversible; and (iii) defines the arrangements that will be put in place to ensure that mitigation measures are implemented by including recommendations of the roles and responsibilities of all critical stakeholders during project implementation.

These civil works raise environmental and social safeguards concerns and have triggered the World Bank's safeguard policies including Environmental Assessment OP 4.01. The environmental and social safeguard concerns are being addressed through two instruments already prepared under the project: Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF).

The sub-project activities in components 2 (sub component 2.1) will involve critical infrastructure improvements which includes the construction of a double cell box culvert and the construction of a raised roadway across the valley.

The OP 4.01 when triggered requires that an ESMP be prepared that will ensure environmental and social sustainability of the project.

1.7 Approach and Methodology

This ESMP was prepared in accordance with the World Bank safeguard policies and the Nigerian environmental assessment guidelines and procedures. The methodology essentially entailed: Preliminary site visits, literature review/desktop studies, field studies, community/stakeholder consultations and the preparation of the ESMP.

1.7.1 Literature Review/Desktop Studies

Literature review and desktop studies were undertaken to obtain information on the proposed project as well as the environmental and socio economic conditions in the project area.

The documents reviewed included:

- Project Appraisal Document (PAD);
- Environmental and Social Management Framework (ESMF);
- Resettlement Policy Framework (RPF); and
- Integrated Safeguard Data Sheet (ISDS) - Appraisal stage;
- Environmental and Social Screening Report;

- World Bank Safeguards Policies;
- Baseline information relating to the physical, biological and socio-cultural environment of the project site;
- Federal and state environmental laws regulations, decrees, acts, policies and guidelines;
- Detailed engineering designs for priority structural works;
- Oyo State profile, June 2013; and
- Baseline report on solid waste management component.

1.7.2 Field Studies

Field studies were carried out with a view to gather additional information on the baseline environmental and social conditions that may potentially be affected during project implementation and operation phases. This involved in-situ measurements, collection of environmental samples for laboratory analysis, questionnaire administration, focus group discussions and oral interviews.

1.7.3 Environmental Parameter Sampling Locations

The sampling points in the study area were geo-referenced and mapped using GPS Garmin model 76CSX. The overriding considerations in the selection of sampling points included ecological features, geographical location of communities/settlements within the project area and accessibility. Control points were situated in undisturbed areas outside the project area but within the same ecological zone. Figure 1.2 below shows the sampling locations for air, water and soil in the study area.

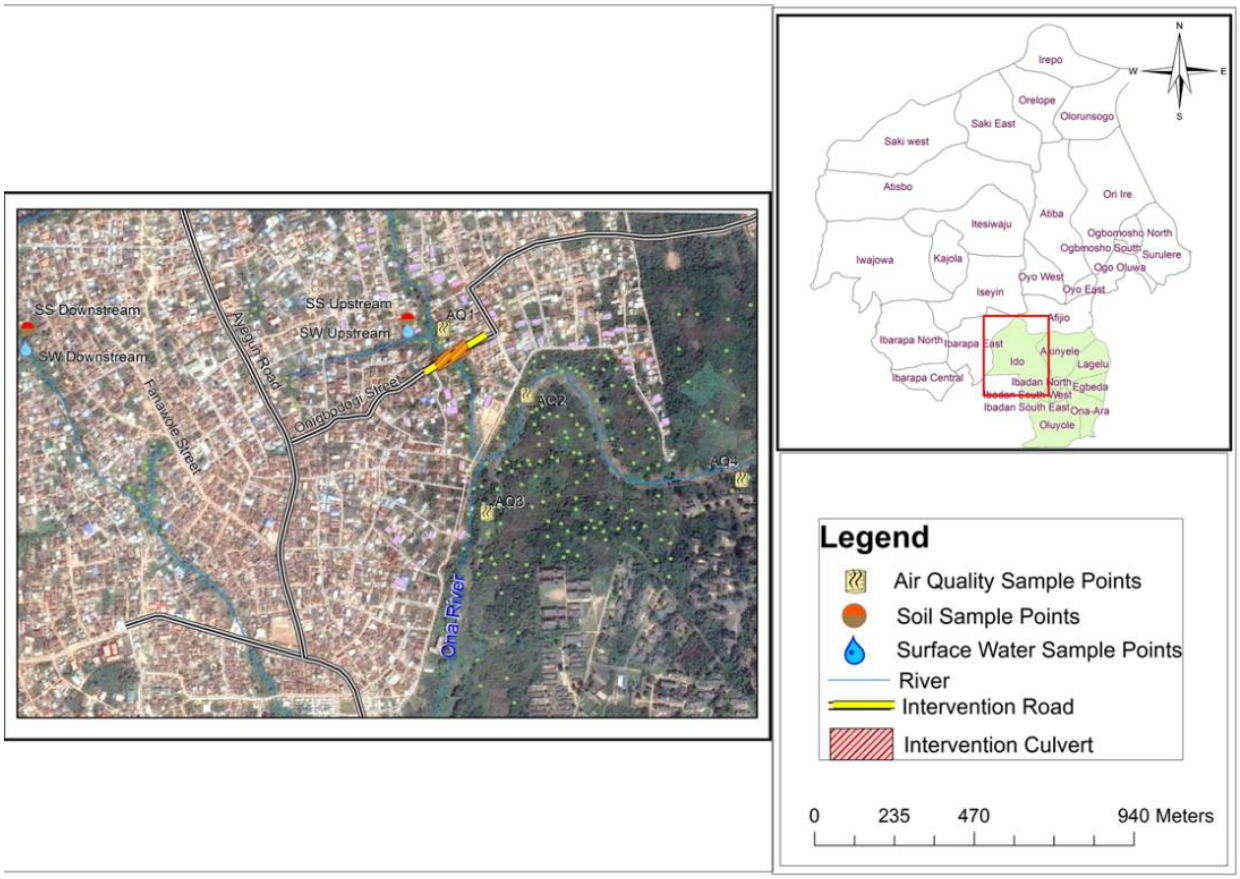


Figure 1.2: Sampling Locations (Air, water and soil quality) in the Study Area

1.7.3.1 Environmental Parameters

Table 1.1: Sampling methods for environmental parameters

<table>
<tr><th>S/N</th><th>Environmental Medium</th><th>Sampling Methodology</th></tr>
<tr><td></td><td>Climate & Meteorological Studies</td><td>The meteorological data of the project area were obtained from the Nigeria Meteorological Agency (NIMET) Oyo State Office whilst the prevailing climatic conditions were assessed in-situ.</td></tr>
<tr><td></td><td>Air Quality Studies</td><td>The list of equipment used for the ambient air quality monitoring within and around the site are shown in table below
<table>
<tr><th>EQUIPMENT USED</th><th>PARAMETERS ANALYSED</th></tr>
<tr><td>BW Multiple Gas Analyzer</td><td>NO, NO_X, CO, CO_2 and O_2</td></tr>
<tr><td>Sper Scientific Humidity/Temperature Meter</td><td>Relative Humidity And Temperature</td></tr>
<tr><td>Aerotrak Particulates Monitor, 9303</td><td>SPM (suspended particulate matter)</td></tr>
<tr><td>Sound Level Meter, Extech 407730</td><td>Noise level</td></tr>
</table></td></tr>
<tr><td></td><td>Noise Measurement</td><td>Noise levels were measured using the precision Sound Level Meter, Extech 407730. Measurement of minimum noise levels (L_{min}), maximum noise levels (L_{max}) as well as noise exposure levels, (L_{exp}) were recorded at four sampling points between the hours of 9.00am and 4.00pm on hourly basis.</td></tr>
<tr><td></td><td>Soil Studies</td><td>Surface and sub- soil samples were collected within a soil depth of 0 - 15cm and 15 - 30cm at geo-referenced locations using the Dutch Hand Auger. Soil samples for physico-chemical analyses were collected in polyethylene bags and wrapped in aluminum foil. Samples for microbial analyses were collected in sterilized 100 ml McCartney bottles and stored in a cool box. A total of two soil samples were collected</td></tr>
<tr><td></td><td>Surface & Ground Water</td><td>Water samples were collected from surface and groundwater points across the project area. Clean sampling bottles and sterile 20 ml plastic containers were used to collect surface water samples at the designated geo-referenced locations. Amber bottles of 250ml capacity were used to collect water samples for heavy metals analysis. These samples were acidified to pH of 2 in the field using concentrated nitric acid. Fast changing physico-chemical parameters such as pH, Total Dissolved Solids (TDS), Dissolved Oxygen (DO) and Temperature were measured in the field using the Corning M-90 Checkmate Deluxe field system. These samples were preserved by storing in ice-filled cooler boxes before transportation to the laboratory. A total of two (2) surface water samples - upstream and downstream were collected for laboratory analyses of various parameters.</td></tr>
<tr><td></td><td>Hydrobiology Studies</td><td>Physical features of the water body in the project area including, depth profiles, width, current velocity and direction were determined. The prevailing use of the surface water was determined by physical observation and interviews.</td></tr>
<tr><td></td><td>Flora & Fauna</td><td>A 5 x 50m^2 quadrant was selected randomly for the collection of full floristic and structural information. A species list defining the floristic assemblages was recorded as much as possible and unrecognized species were collected for identification in approved laboratories. Plants were examined in vivo for signs and evidence of environmentally induced stress as well as disease conditions. Information on fauna was acquired by direct/ indirect sighting of animals and interviews/discussions with natives and residents within and around the project area.</td></tr>
</table>

1.7.3.2 Quality Control

Quality assurance measures were applied during the field study. Samples were collected, handled and analyzed in accordance with FMEnv guidelines and international protocols.

1.7.3.3 Socio economics

The major instrument used in collecting data was the structured questionnaire which was used to elicit information from 103 randomly selected respondents (See Annex 3 for the structured questionnaire).The questionnaire was administered to Direct Project Affected Persons (PICs), Key Stakeholders, and other members of the community

Table 1.2 below shows details of the sampling methodology and the questionnaires administered. Finally, the analysis uses simple percentages, charts and figures to describe the results.

Table 1.2: Details of the Sampling Methodology and the Questionnaires Administered

Categories of Stakeholders Sampled	**Questionnaire Administered**	**Questionnaire Returned**	**IDI**	**FGD**	**Town Hall Meeting**
Direct Project Affected Persons (PICs)	30	30	1		
Key Stakeholders	10	10	1		
Other members of the community	63	63			
Total	103	103	2	2	1

1.7.4 Community and Stakeholder Consultations

Community and stakeholder consultations were held within the project area on 28 July 2015. Structured questionnaires (See Annex 3), in-depth interviews and focus group discussions were held with impacted communities, community representatives and stakeholders. Through this process, concerns and issues were addressed; views and inputs as regards the potential environmental and social impacts of the project and proposed mitigation/enhancement measures were obtained.

1.7.4.1 Approaches for Identification and Participation of Stakeholders

The stakeholders for the community consultations were identified by the staff of the social development unit of the PIU and the community members through different associations within the community. Both the qualitative and quantitative aspects of the socioeconomic impacts took cognizance of the vulnerable groups. Vulnerable individuals that were asked about include physically challenged, visually impaired, elderly ones, children, and pregnant women among others. Furthermore, focus group discussion was held with their representatives (a cross section of the women representing different groups) in a secluded place out of the view of men. In depth interview was also conducted with a woman leader in the community.

1.7.4.2 Stakeholder Categorization

The stakeholders were categorized into affected parties and other interested parties. The affected parties were those who the project will affect directly as well as those passing through the route where the construction would take place as well as those that will be directly affected by the construction. Their interest in the project is to see to the successful completion of the construction in order to have easy access to the community.

CHAPTER TWO: DESCRIPTION OF BASELINE CONDITIONS

2.1 Physical Environment

2.1.1 Climate /Meteorology

The project area falls within the same climatic conditions as the Ibadan metropolis. The climate of Ibadan is equatorial, notably with dry and wet seasons with relatively high humidity. The dry season lasts from November to March while the wet season starts from April and ends in October. Average daily temperature ranges between 25 °C (77.0 °F) and 35 °C (95.0°F), almost throughout the year. In situ weather parameters are shown in Tables 2.1 below.

Table 2.1: In situ Field Meteorological Measurements

Parameter	Unit	FMEnv Standards	Point 1	Point 2	Point 3	Point 4
			7.455 N	7.456 N	7.453 N	7.458 N
			3.891 E	3.880 E	3.879 E	3.878 E
Temperature	^{0}C	-	27	27	27	27
Humidity	%	-	72	71	72	72
Wind Speed/direction		9KPH SW				

Source: Fieldwork, 2015

2.1.2 Air Quality and Noise Level

The air quality in the study area is fairly good as shown in the results of the ambient air quality measurement in Table 2.2. Most of the in-situ air quality analysis shows that all parameters were below the FMEnv regulatory limits of 90 dB (A) over an 8 hour exposure period. The proposed project has the potential to negatively impact air quality through the release of dusts and gaseous emissions during site preparation and construction activities.

Table 2.2: Air Quality and Noise Measurements in the Study Area

Parameter	Unit	FMEnv Standards	Point 1	Point 2	Point 3	Point 4
			7.455 N	7.456 N	7.453 N	7.458 N
			3.891 E	3.880 E	3.879 E	3.878 E
CO	Ppm	10	< 1.0	< 1.0	< 1.0	< 1.0
Methane	Ppm	-	< 1.0	< 1.0	< 1.0	< 1.0
SO_2	Ppm	0.14	< 0.01	< 0.01	< 0.01	<0.01
O_2	%	20.5-20.9	20.9	20.9	20.9	20.9
NO_2	Ppm	0.06	<0.01	<0.01	<0.01	<0.01
H_2S			<0.01	<0.01	<0.01	<0.01
CO_2	%		2.26	2.24	2.06	2.10
SPM	µg/m^3	150	16	18	16	21
Noise	Db	90	41.8	54.5	53.3	59.2

Source: Fieldwork, 2015

2.1.3 Geology/Hydrogeology

The site falls within the migmatite gneiss complex of the Southwestern Nigeria. The basement rock types in this region are characterized by low porosity and permeability in their unaltered form. The overburden is generally sand-clay mixtures with irregular surface exposure of outcrops, jutting out of the river channel.
Most of the less resistant parts of the rocks in these areas are already weathered leaving behind most of the resistant part forming landscapes of high and low reliefs.

2.2 Surface/Groundwater

2.2.1 Surface Water Hydrology

Saasa River, the main surface water body found in the study area is a tributary of Ona River. Table 2.3 shows the bathymetry data for the surface water.

Table 2.3: Surface Water Bathymetry in the Study Area

Location	Depth (m)	Width (m)	Flow Velocity (m/s)	Flow Direction
Upstream	0.2-0.4	≤ 1.5	0.01	NW–SE
Midstream		≤ 3.3		NW–SE
Downstream		≤ 3.0	0.01	NW–SE

Source: Fieldwork, 2015

2.2.2 Surface Water Quality

Physico-chemistry

The physico-chemical properties of surface water samples are presented in Table 2.4 below. All parameters sampled upstream and downstream were within acceptable FMEnv limits.

2.3 Soil Studies

The soils in the study area mainly fall within the migmatite gneiss complex of the South-western Nigeria. The basement rock types in this region are characterized by low porosity and permeability in their unaltered form. The overburden is generally sand-clay mixtures with irregular surface exposure of outcrops, jutting out of the river channel.

Soil Physico-chemical Characteristics

Table 2.5 below shows that the composite physicochemical analysis of the soil in the area is predominantly sandy and moderately acidic with pH values ranging from 6.93-7.31. Heavy metals, Mn, Fe and Zn content of the soil exceeded FMEnv limits. This may be attributed to the underlying rocks where the soils of Ibadan region were formed. The major soil groups are the ferruginous soils.

Table 2.4: Physicochemical Characteristics of Surface water

Parameter	**Downstream**	**Upstream**	**FMEnv Limits**
PH	7.67	7.61	6-9
Ec/ms	0.20	0.20	-
Temp C^o	27.2	27.1	<40
mg/l Mn	0.325	0.338	5
mg/l Fe	5.850	4.988	20
mg/l Cu	0.00	0.00	<1.0
mg/l Zn	0.063	0.038	<1.0
mg/l Cd	0.00	0.00	<1.0
mg/l Pb	0.00	0.00	<1.0
mg/l Cl	158.43	151.20	600
mg/l Carbonate	N/D	N/D	-
mg/l BI Carbonate	30.52	18.34	-
mg/l NO_3^-	0.040	0.149	*20*
mg/l SO_4^{2-}	0.292	0.257	*500*
mg/l Alkalinity	4.80	2.42	-
mg/l Po4	1.979	2.115	*5*
mg/l TDS	0.05	0.04	*2000*
mg/l TSS	0.94	0.92	*30*
Hardness mg/l	0.153	0.153	*200*
mg/l DO	5.91	5.40	-

Table 2.5: Physcio chemical characteristics of soils

mg/l BOD	4.50	4.81	*30*

Parameter	**Downstream**	**Upstream**	**FMEnv Limits**
PH(1:1)	6.93	7.31	6 -9
Ec/ms	0.15	0.12	1.00
Temp O^o	26.4	26.4	
% N	0.110	0.124	
% Oc	1.062	1.209	
Avail P mg/kg	0.064	0.024	1.00
Cmol/kg Ca	7.535	2.834	
Cmol/kg Mg	1.562	1.727	
Cmol/kg K	0.254	0.256	
Cmol/kg Na	1183	1169	
mg/kg Mn	4.325	0.672	0.20
mg/kg Fe	22.403	23.251	1.50
mg/kg Cu	0.018	0.021	0.10
mg/kg Zn	0.070	0.064	0.01
mg/kg Pb	0.00	0.00	
GRAIN SIZE DISTRIBUTION			
% Sand	77.8	59.8	-
% Silt	7.4	27.4	-
% Clay	14.8	12.8	-

Source: Fieldwork, 2015

Source: Fieldwork, 2015

2.4 Biological Environment

2.4.1 Flora & Fauna

Flora species identified in the study area include: Economic trees, shrubs and grasses. The principal grasses in the area are mostly high grasses such as *Pennisetum and Ageratum conyzoides*. Economic trees include: Sugar cane, Plantain, Banana, Palm trees, *Treculia africana* (African breadfruit) and Pawpaw (See figure 2.1).

Fauna diversity in the study area includes domestic animals like sheep, goats, cows and chickens. Other animals include snails, toads, spiders, ants, bush rats, alligators and monitor lizards. The River also harbors fishes and tadpoles.

Figure 2.1: Sections of the Vegetation in the Study Area

2.5 Waste Management

Waste management practice in the study area is characterized by indiscriminate disposal of solid waste into surface water course (Figure 2.2). The waste stream observed comprised of domestic wastes and organic wastes such as human faeces, animal droppings and plant materials.

Figure 2.2: Plastic bottles in the River

2.6 Socio-economics

According to the Federal Republic of Nigeria official gazette of 2nd February 2009 No. 2 Vol. 96, Ido Local Government area has a total population of 104,087 persons comprising of 52,465 males and 51,622 females with a 4.63 percent growth rate.

This section assesses the socio-economic characteristics and the likely socio economic impacts of the proposed intervention project. The socio-demographic characteristics include among others; age, gender, education, income, occupation, residential, health status, standard of living rating, vulnerability during project intervention etc. Table 2.6 presents the summary table of socio economic characteristics of the respondents. Annex 7 and 8 shows photographs during consultations with communities and attendance log of participants respectively.

Table 2.6: Summary table of socio economic characteristics of the respondents

Socioeconomic Characteristics	Label	Frequency	Percentage (%)
Age	19 – 35 years	38	36.9
	36 – 60 years	57	55.3
	61 and above	8	7.8
Sex	Male	49	47.6
	Female	54	52.4
Marital Status	Never married	18	17.5
	Married	83	80.6
	Separated	1	1.0
	Widowed	1	1.0
Religion	Christian	54	52.4
	Islam	48	46.6
	Traditional	1	1.0
Education	No formal education	4	3.9
	Primary school not completed	6	5.8
	Primary school completed	12	11.7
	Secondary school not completed	13	12.6
	Secondary school completed	45	43.7
	Post secondary school	23	22.3
Occupation	Civil servants	6	5.8
	Fishing	3	2.9
	Artisan	18	17.5
	Trading	52	50.5
	Professional	13	12.6
	Retired	5	4.9
	Others	6	5.8
Duration of Living	1 – 5 years	40	38.8
	6 – 10 years	33	32.0
	11 – 15 years	16	15.5
	16 – 20 years	8	7.8
	21 – 25 years	2	1.9
	26 – and above	4	3.9
	Total	103	100.0
Construction material (wall)	Plastered Mud	3	2.9
	Cement Block	89	86.4
	Brick	10	9.7

	Other	1	1.0
	Total	103	100.0
Toilet Facility	Flush or Pour Flush Toilet	92	89.3
	Pit latrine	8	7.8
	Bucket Toilet	3	2.9
	Total	103	100.0
Type of Building	Bungalow	70	68.0
	Duplet	4	3.9
	Detached	3	2.9
	Semi detached	2	1.9
	One room apartment	19	18.4
	Self contain	5	5.0
	Total	103	100.0
Source of drinking water	Bore hole	7	6.8
	Dug well	84	81.6
	Water from spring	1	1.0
	Rainwater	1	1.0
	Sachet/bottle water	10	9.7
	Total	103	100.0
Location of house	Flat ground	59	57.3
	Sloppy ground	33	32.0
	Flood Plains	1	1.0
	Steep slope	8	7.8
	Don't know	2	1.9
	Total	103	100.0
Solid waste management	Government	55	53.4
	Private	30	29.1
	Nobody	18	17.5
Effectiveness of solid waste management	Very effective	9	8.7
	Fairly effective	21	20.4
	Not effective	55	53.4
	No response	18	17.5
Methods of waste disposal	Bush	10	9.7
	Burning	83	80.6
	Open dump	4	3.9
	Organised collection	6	5.8
Population group mostly represented in the community	Elderly	19	18.4
	Middle age	36	35.0
	Youth	43	41.7
	Adolescent	2	1.9
	No response	3	2.9
Presence of unemployed youth	Yes	85	82.5
Provision of manpower for the project	Yes	87	84.5
Gender most mobile in the community	Male	87	84.5
	Female	14	13.6
	Both	1	1.0
	None	1	1.0
Gender mostly marginalized	Male	35	35.0
	Female	60	60.0
	Both	2	2.0
	None	3	3.0
Gender mostly employed	Male	20	19.4
	Female	80	77.7
	Both	1	1.0
	None	2	1.9
Amount spent on food on daily basis	Less than 500	29	28.2
	501 – 1000	34	33.0
	1,001 – 1,500	11	10.7
	1,501 – 2000	18	17.5
	2,001 – 2,500	1	1.0
	2,501 – 3000	4	3.9
	No response	6	5.8
Situation of Roads to the community	Good	5	4.9
	Fair	20	19.4
	Poor	77	74.8
	No response	1	1.0
Situation of roads within the community	Good	2	1.9
	Fair	14	13.6
	Poor	84	81.6
	No response	3	2.9
Situation of schools in the community	Excellent	1	1.0
	Very good	2	1.9
	Good	15	14.6
	Fair	14	13.6
	Poor	47	45.6
	Not applicable	24	23.3

Situation of public health institutions	Excellent	1	1.0
	Very good	2	1.9
	Good	8	7.8
	Fair	12	11.7
	Poor	53	51.5
	Not applicable	27	26.6
Primary source of electricity in the community	Hurricane Lamp	2	1.9
	Private	6	5,8
	Community	1	1.0
	IBEDC	94	91.3
Secondary source of electricity to the community	Hurricane lamp	16	15.5
	Private	59	57.3
	Community	2	1.9
	IBEDC	26	25.2
Main source of fuel for cooking	Firewood	5	4.9
	Charcoal	3	2.9
	Kerosene	82	79.6
	Gas	9	8.7
	Animal Waste	3	2.9
	Saw dust	1	1.0
Existence of public hospital	Yes	10	9.7
Existence of private hospital	Yes	71	68.9
Existence of maternity	Yes	24	23.3
Existence of dispensary	Yes	1	1.0
Existence of health center	Yes	20	19.4
Existence of private clinic	Yes	72	69.9
Existence of patent medicine store	Yes	56	54.4
Existence of pharmacy store	Yes	53	51.5
Traditional healing home	Yes	16	15.5
Has flooding negatively affected your health?	Yes	23	22.3
Effect of flooding on health	Skin disease		
	Yes	2	8.7
	Cough		
	Yes	3	13.0
	Catarrh		
	Yes	3	13.0
	Malaria		
	Yes	17	56.6
	Water borne diseases		
	Yes	2	8.7
	Total	27	100
Management of health during illness	Attend hospital/clinic	87	84.5
	Buy drugs from nearby chemist/pharmacy		
	Visit traditional healing home	12	11.7
	None	2	1.9
		2	1.9
Are there Security challenges in the community?	Yes	35	34.0
Concern about flooding in the community	Extremely concerned	58	56.3
	Very concerned	21	20.4
	Concerned	16	15.5
	Not concerned	8	7.8
Major floods that have impacted the community	2011		
	Yes	96	93.2
	2012		
	Yes	3	2.9
	2013		
	Yes	3	2.9
	2014		
	Yes	6	5.8
Impact of flooding on roads	Wash the road away		
	Yes	68	66.0
	Cause pot holes		
	Yes	18	17.5
	Cut off the road completely		
	Yes	37	35.9
Impact of Flooding on Bridge	Wash of the bridge		
	Yes	53	51.5
	Collapsed the bridge		
	Yes	56	61.2
	Undermine/Weaken the bridge		
	Yes	1	1.0

Impact of Flooding on Accessibility	Hinders movement		
	Yes	54	52.4
	Block access completely		
	Yes	27	26.2
	Block access for some time		
	Yes	27	26.2
	Block vehicular movement		
	Yes	23	22.3
Impact of flood on livelihood	Reduce business opportunity	95	92.2
	Erodes farmland	8	7.8
Level of awareness of the proposed project	Very aware	52	50.5
	Moderately aware	21	20.4
	Not aware	30	29.1
Concern about menace of flood	Yes	100	97.1
Awareness of proposed flood remedy	Yes	69	67.0
Source of information on awareness	Television		
	Yes	4	3.9
	Newspaper		
	Yes	1	1.0
	Government Official		
	Yes	6	5.8
	Friends/relatives		
	Yes	8	7.8
	Radio		
	Yes	5	4.9
	Community Association		
	Yes	50	48.5
Opinion about the project	Good	39	37.9
	Bad	64	62.1
Can project cause restiveness in community	Yes	16	15.5
Impact of construction on household	Reduce Business opportunity		
	Yes	41	39.8
	Not been able to go to farm		
	Yes	9	8.7
	Dusty environment during dry season		
	Yes	47	45.6
Impact of the intervention on the health of household	Yes	26	25.2
Changes in the Standard of living of Household members over the past four years	Same	41	39.8
	Better	45	43.7
	Worse	15	14.6
Modes of Transport own by the Households	Bicycle		
	Yes	2	1.9
	Motorcycle		
	Yes	44	42.7
	Tricycle		
	Yes	23	22.3
	Car		
	Yes	41	39.8
	Truck		
	Yes	2	1.9
	Bus		
	Yes	8	7.8
	None		
	Yes	20	19.4
Modes of Transport frequently use by the Households	Bicycle		
	Yes	5	4.9
	Motorcycle		
	Yes	68	66.0
	Tricycle		
	Yes	29	28.2
	Car		
	Yes	37	35.9
	Truck		
	Yes	1	1.0
	Bus		
	Yes	4	3.90
Perceived effect of Construction on Okada Riders	Improve their Business		
	Yes	33	32.0
	Reduce their Business		
	Yes	21	20.4
	Will have no effect		
	Yes	49	47.6
Perceived effect of Construction on Car	Improve their Business		
	Yes	32	31.1

	Reduce their Business Yes Will have no effect Yes	 19 52	 18.4 50.5
Perceived effect of Construction on School children	Stop them from going to school Yes Make them go late to school Yes Can cause injury while going to school Yes Make them return late from school Yes Have no effect Yes	 7 26 1 12 70	 6.8 25.2 1.0 11.7 68.0
Perceived effect of Construction on the Elderly	Disrupt their movement Yes Cause injury Yes Disallow relatives from visiting Yes No effect Yes	 35 4 3 63	 34.0 3.9 2.9 61.2
Perceived effect of Construction on the Pregnant women	Deny access to antenatal Yes Cause delivery at home Yes Cause injury Yes No effect Yes	 19 12 1 76	 18.4 11.7 1.0 73.8
Perceived effect of Construction on the handicap/visually impaired	Impaired Movement Yes Cause injury Yes No effect Yes	 28 6 70	 27.2 5.8 68.0

CHAPTER THREE: ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN

3.1 Discussion of Significant Potential Environmental and Social Impacts

The project is expected to have highly positive environmental and social impacts for impacted communities in the project area as it provides incentives for improved environmental management and livelihoods. However, the intervention works will inevitably have some negative environmental and social impacts on the biophysical and social environment, particularly during the pre-construction, construction and maintenance phases (See table 3.1)

The negative environmental and social impacts will largely be localized in spatial extent, short in duration, occurring within less sensitive environmental areas and are manageable through the implementation of appropriate mitigation measures. Most of these negative environmental and social impacts can be avoided by sound design, good construction practices, effective maintenance and adequate supervision and enforcement during construction and operational phases of the project.

This section contains a summary of the significant potential positive and negative environmental and social impacts. It also discusses the Environmental and Social Management and Monitoring Plan which includes the following components; Description of the recommended mitigation measures, Description of monitoring program, Institutional arrangement, Implementation schedule and reporting procedures, Cost estimates and sources of funds. Table 3.3 describes the environmental and social mitigation and monitoring plan for the project site.

3.2 Summary of Potential Environmental and Social Impacts

The significant potential environmental and social impacts are summarized in Table 3.1 below.

Table 3.1: Summary of Significant Potential Environmental and Social Impacts

Project Phase	**Significant Potential Impacts**			
	Positive Impacts		**Negative Impacts**	
	Environment	**Social**	**Environment**	**Social**
Pre-Construction		• Employment of local labour for site clearing	• Ambient Air deterioration from release of dusts and gaseous emissions • Noise and Vibration from the use of machineries and motorized equipment • Vegetation loss from land clearing and preparation activities • Fauna Habitat alteration and displacement due to site clearing • Exposure of soil to erosion and loss of quality from devegetation • Generation of vegetal wastes, other cleared materials and construction wastes • Surface water contamination as a result of sediment run off from exposed soils	• Traffic congestion and increased risk of road traffic accidents and injuries • Risk of occupational accidents, injuries and .diseases
Construction	• Propagation of vegetal cover • Restoration of flora habitat • Ecological balance and conservation • Soil stabilization and regeneration	• Employment of local labour for construction and vegetation activities	• Ambient Air deterioration from release of dusts and gaseous emissions • Noise and Vibration from the use of machineries and motorized equipment • Soil erosion from exposure of soil to rain and wind • Slope instability arising from excavation in active areas • Predisposition of soil to erosion resulting from improper abandonment of borrow pit • Water pollution due to sedimentation and siltation from runoff from spoils • Soil contamination and loss of soil quality • Generation of spoils and other construction wastes • Underground water pollution from spillages & leakages from oil storage tanks.	• Damage to existing underground public utility cables and pipes and disruption of services • Traffic congestion and increased risk of road traffic accidents and injuries • Health and safety risks associated with falls and drowning in improperly abandoned borrow pits • Risk of occupational accidents, injuries and diseases • HIV/AIDS and other STDs arising from the interactions amongst the workforce and

			• Increased surface water run-off due to diversion during construction.	the host community • Injuries from accidental discharge of construction materials during transportation to site • Social stress and disruptions due to lack of local labour
Operation/ Maintenance	• Reduced vulnerability to flooding hazards • Lesser vulnerability of people and property, • Improved disaster preparedness for adverse events; • Increased resilience of communities at risk of flooding, and the preservation of assets of households and businesses against flood risk • Improved solid waste management	• Reduced mortality and morbidity from water related diseases • Diversification of livelihood and increased productivity. • Reduction in public spending on replacement and rehabilitation of infrastructure • Creation of employment	• Reoccurrence of flooding as a result of uncontrolled solid waste disposal in the stream or side drains causing blockage	• Occupational accidents and injuries • Risk of falls from unprotected culverts

3.3 Mitigation Measures

The feasible, practical and cost effective measures mitigation measures are based on recommended good practice, regulatory requirements and contributions received from relevant stakeholders. The primary objectives of the mitigation measures are:

The mitigation measures mainly relate to the adoption of best environmental practices in the civil engineering design, construction, operation and maintenance of the project as well as technical civil engineering measures.

3.4 Monitoring Program

3.4.1 Monitoring and Reporting Procedure

The environmental and social monitoring activities will be based on direct/indirect indicators of emissions, effluents, and resource use applicable to the project. Monitoring frequency will be sufficient to provide representative data for the parameter being monitored. Monitoring environmental and socio economic data will be analyzed and reviewed at regular intervals and compared with the operating standards for necessary corrective actions.

For effective monitoring, the following measures will be taken:

- Monitoring will be conducted by trained Environmental and Social Specialists and other relevant personnel;
- Measuring equipment will be accurately calibrated;
- Quality control of sampling undertaken will be ensured;
- Accredited laboratories will be used; and
- Certified methods of testing will be employed and where legal specifications exist for testing and sampling methods, these will be taken into account.

The activities during monitoring are highlighted in table 3.2

Table 3.2: Activities during monitoring

1	2	3	4
Internal Monitoring	**External Monitoring**	**Reporting**	**Record Keeping**
○ The first level of monitoring will be carried out by the Contractor on an ongoing basis as specified in the monitoring plan; ○ The second level of monitoring will be carried out by the PIU- Monitoring and Evaluation Specialist. ○ Monitoring by the ESO will be done by checking regular monitoring reports to be provided by the Contractor and by carrying out regular site visits.	○ External monitoring and supervision will be done by Oyo State Ministry of Environment and Habitat, FMEnv, World Bank and other relevant agencies as may be required; ○ check reports received periodically from the PIU and carry out inspections and/or audits on their own; ○ Using the monitoring indicators each responsible institution will seek to measure the project's progress	○ Monthly Progress and Monitoring Report: to be prepared by the Contractor's EO or Environmental representative providing relevant information on all monitoring activities- These reports are to be made available to the PIU and the Oyo State Ministry of Environment and Habitat/FMEnv; ○ Quarterly Reports: to be prepared by the Contractor, summarizing all observations of the period. Reports will also be made available to the PIU and the Oyo State Ministry of Environment and Habitat/FMEnv; ○ Quarterly Report by PIU: based on the Contractor's reports and on own activities, for the Oyo State Ministry of Environment and Habitat and World Bank. The quarterly monitoring report will contain the following aspects of the ESMP implementation: • Brief introduction to activities; • Objectives and scope of monitoring; • Monitoring parameters; • Field observations and analysis; • Percentage of safeguard compliance; • Non-compliance issues, gaps and weaknesses; • Recommendations for corrective measures; and • Data, analysis results and pictures	○ Procedures for the identification, collection, indexing, filing, storage, maintenance, retrieval and retention of records will therefore be established, implemented and maintained. ○ Records to be kept will include amongst others: •Complaint records; •Training records; •Inspection, maintenance and calibration records; •Monitoring data and audit results; •Pertinent contractor and supplier records; •Identified problems and corrective actions taken; •Incident reports; and •Significant communications with regulators.

Table 3.3: Environmental and Social Mitigation and Monitoring Plan

Potential Impacts		Mitigation Measures	Responsibility (Implementation)	Cost of Mitigation Dollars (USD)	Indicators/ Parameters	Method of Measurement	Sampling Location	Frequency of Monitoring	Responsibility (Supervision)	Cost of Monitoring Dollars (USD)
A		**PRE CONSTRUCTION PHASE**								
Community perception-		• Providing enlightenment forums to community members from the preparatory stage and on potential environmental and social concerns from civil works	IUFMP PIU-Environmental Specialist, Social development specialist, Community Development, Specialist, Communication specialist Oyo state Ministry of Information	400	•No of Complaints from community members and road users	Interviews	Construction Site	Once	PIU	-
1	Complaints from members of the community									
Mobilization of Equipment to Site		• Develop a Traffic Management Plan (TMP) . • Traffic control measures to include: strict enforcement of speed limits, use of appropriate road safety signages and signalers and minimization of movement at peak hours of the day. • Ensure submission of TMP is a condition in the procurement document for the contractor • Train drivers on haulage safety and pedestrian safety	•Contractor	800 300	• TMP Developed • Traffic flow • Safety signage & signalers installed at strategic locations • No of Complaints from residents and other road users • No of Road Traffic Accidents (RTA) • No of Drivers Trained	- Sighting Visual Observation Complaint Register Police/FRSC Report Interviews/ Training Records	Along transport corridor Construction Site	Once Daily Once	PIU Oyo State Road Traffic Management Authority, (OYRTMA) Federal Road Safety Corps (FRSC)- Oyo State	- **200**
2	Traffic congestion and increased risk of road traffic accidents and injuries as a result of movement of equipment									
3	Occupational accidents and injuries from the use of machineries and equipment	• Prepare a site specific HSE plan for workers addressing issues including; HSE rules and instruction; • Provision of PPE to workers; Emergency contingency plans; Education of workers; Incident/accident reporting; Provision of First Aid onsite	•IUFMP	1000 200	• HSE Plan Developed • Workers using PPE • First Aid Provision • No of accidents and injuries • HSE Statistics {First Aid Cases (FAC), Lost Time Injuries (LTI), etc}	• HSE Report • Sighting • Routine/ Unannounced Inspection	Construction Site	Once Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	-
Site Clearing		• Suppress dust emissions by appropriate methods such as spraying water on soil • Maintain vehicles in good working condition • Ensure exhaust fumes from vehicles conform to applicable National standards and specifications	• Contractor	200 - -	• Suspended Particulates (TSP, PM_{10}, or smaller), SO_2, NO_x, CO, THC • Vehicle Exhaust Measurements • Records of maintenance for all machineries and equipment	• In-Situ Measurement • Sighting	Construction Site and surrounding area	Daily Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**300**
4	Air quality deterioration from release of dusts and gaseous emissions from exposed soil surfaces and vehicles									
5	Noise and vibration from the use of machineries and motorized equipment	• Maintain equipment and machineries adequately to reduce their noise levels • Fit machineries and motorized equipment with exhaust mufflers/silencers to minimize	• Contractor	200	• Noise Levels (Not to exceed 90dB(A) • No of Complaints • Records of Equipment Maintenance	• In-Situ Measurement • Sighting • Complaint Register	Construction Site (high activity areas) and to some extent transport	Daily	Environmental specialist-IUFMP Oyo State Ministry of	**200**

		noise generation • Avoid unnecessary idling of internal combustion engines					corridor		Environment and Habitat	
6	Vegetation loss from land clearing	• Limit clearing strictly to necessary areas so as to minimize the destruction of flora and fauna. • Re vegetate areas likely to be impacted with indigenous plant species immediately	• Contractor	-	• Clearly Defined Boundaries • % of Vegetal Density Loss/Vegetal cover • Diversity of indigenous and exotic plant species • No of micro habitats	• Visual Observation • Visual Estimate of Cover • Framed Quadrants	Construction Site	Once during site clearing and quarterly afterwards	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	300 200
7	Disturbance/Destruction of flora and fauna habitat (ecosystem) and displacement/destruction of fauna due to site clearing		• Contractor	400						
8	Exposure of soil to sheet erosion and loss of quality from devegetation	• Avoid removal of vegetation and trees to the extent possible • Protect all vegetation not required to be removed against damage • Re vegetate exposed soil quickly	• Contractor	200	• % of Vegetal Loss • Ratio of Natural/Cultivated Cover	• Visual Estimate	Project area where vegetation was cleared	Once during site clearing and quarterly afterwards	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	200
9	Generation of vegetal wastes and other cleared materials from devegetation and site clearing activities	• Prepare a Waste Management Plan (WMP), using the waste minimization hierarchy principles of avoid-reduce- reuse- recycle-disposal. • Ensure proper handling, stockpiling and disposal of wastes (e.g cleared vegetation, timber, rubbles, etc.)	• IUFMP • Contractor	1000 300	• WMP Developed • Contractor's Compliance to WMP • Waste Handling and Disposal of Wastes	• Sighting • Visual Observation • Waste Tracking Report	Construction Site	Weekly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat Oyo state Solid waste management authority	**300**
10	Surface water contamination as a result of sediment run off from exposed soils	• Install silt fences or other similar devices at strategic locations to prevent run-offs of sediment/silt to surface water • Define flood plain boundaries and pollutants of concern, and conduct resource inventory and information analysis. • Regular inspection of the project sites will be needed. • Identify sensitive areas in order to protect surface water and prevent non-point source pollution.	• Contractor	400	• Surface Water Quality (pH, TDS, TSS, BOD, COD, Turbidity, THC, Heavy Metals)	• In-Situ/Laboratory Measurements	Discharge point, mid-stream & downstream	Once during Pre-Construction	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**300**
11	Risk of occupational diseases such as respiratory and eye disorder, noise related problems, stings and bites as a result of exposures to occupational hazards.	• Develop a site specific HSE plan	• IUFMP	See A3	• Contractors Compliance • Workers Using PPE • HSE Statistics (FAC, LTI, etc)	• Routine Inspection • HSE Reports	Construction Site	Once during Pre-Construction	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat Oyo State Ministry of Health	-

12	Employment of local labour for site clearing	• Maximize employment of local labour by ensuring the submission of statement of intent to employ local labour as a condition in the procurement document for the contractor.	• Contractor	-	• No of local labour used	• Log book	Construction Site	Once during Pre-Construction	IUFMP- Social Development Specialist	200
Installation of Equipment and Site Structures										
13	Noise and vibration from the use of machineries and motorized equipment during construction of site structures	• Maintain equipment and machineries adequately to reduce their noise levels • Fit machineries and motorized equipment with exhaust mufflers/silencers to minimize noise generation • Avoid unnecessary idling of internal combustion engines	• Contractor	300	• Noise Levels (Not to exceed 90dB(A) • Records of Equipment Maintenance	• In-Situ Measurement • Sighting	Construction Site (high activity areas) and to some extent transport corridor	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	200
14	Generation of construction wastes	• Develop a Waste Management Plan (WMP) • Promote waste avoidance; reduction; reuse and recycling as applicable • Ensure proper handling, and disposal of wastes (especially contaminated soil, concrete, oils, grease, lubricants, metals, etc.)	• IUFMP • Contractor	See A9	• Contractors Compliance to WMP • Waste Handling and Disposal	• Visual Observation • Waste Tracking Report	Construction Site	Weekly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat Oyo state Solid waste management authority	See A9
15	Risk of noise related problems amongst workers from exposure to excessive noise.	• Develop a site specific HSE Plan and Noise Control plan for workers to include use of hearing protective devices	• IUFMP	See A3	• No of workers using hearing protective devices (ear plugs) • Workers with noise related problems	• Routine Inspection • HSE Report	Construction Site	Weekly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	-
	• **SUB TOTAL**			**5,700**	**SUB TOTAL**					**2,400**
B	**CONSTRUCTION PHASE**									
Excavation , Borrowing, Filling, Back filling and Compaction		• Suppress dust emissions by appropriate methods such as spraying water on soil • Maintain vehicles in good working condition • Ensure exhaust fumes from vehicles conform to applicable National standards and specifications	• Contractor	300 - -	• Suspended Particulates (TSP, PM_{10}, or smaller), SO_2, NO_x, CO, THC • Vehicle Exhaust Measurements • Records of maintenance for all machineries and equipment	• In-Situ Measurement • Sighting	Construction Site and surrounding area	Daily Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**300**
1	Air quality deterioration from dusts generated during excavation , borrowing, filling, backfilling and compaction activities									
2	Noise and vibration from the use of heavy duty vehicles during excavation, borrowing, backfilling and compaction	• Maintain equipment and machineries adequately to reduce their noise levels • Fit machineries and motorized equipment with exhaust mufflers/silencers to minimize noise generation • Avoid unnecessary idling of	• Contractor	300	• Noise Levels (Not to exceed 90dB(A) • No of Complaints • Records of Equipment Maintenance	• In-Situ Measurement • Sighting • Complaint Register	Construction Site (high activity areas) and to some extent transport corridor	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**200**

	activities	internal combustion engines								
3	Soil erosion from exposure of soil to rain and wind	• Avoid removal of vegetation and trees to the extent possible • Protect all vegetation not required to be removed against damage • Apply best engineering practices to minimize soil structure damage and adhere strictly to design specifications • Work on exposed areas and re vegetate quickly • Control off-site storm & flood water before it reaches areas being excavated to prevent run-off of sediment. This can be achieved by construction of temporary drainage channels with sedimentation traps and/or screens	• Contractor	700	• % of Vegetal Loss • Compliance with Design Specification • Ratio Natural/Cultivated Cover • Evidence of drainage channels,etc	• Visual Estimate/ Observation	Excavated Area	Once during project activity and quarterly afterwards	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	500
4	Generation of Spoils	• Reuse excavated materials immediately as fill, or stockpile for later use or dispose off appropriately • Ensure stockpile and disposal areas are stable and protected against erosion and not interfere with run off or subsequent construction activities. Stockpile to be covered and stored in a sealed and bonded area in order to prevent run-off • As part of the WMP, implement Spoil Handling Management (SHM) Sub-Plan that will identify how spoil will be handled, stockpiled, reused and disposed	• Contractor	600	• Spoil Handling Management Sub-Plan • Contractors compliance	• Visual Observation	Construction Site	Weekly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat Oyo state Solid waste management authority	**450**
5	Predisposition of soil to erosion resulting from improper abandonment of borrow pit	• Implement Site Reclamation Plan to ensure that site is rehabilitated and restored to a safe and stable state	• Contractor	-	• Site Reclamation Plan • Contractor's Compliance	• Sighting • Visual Observation	At the worksite and material borrow area	Once during construction	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	400
6	Water pollution due to sedimentation and siltation from runoff from spoils	• Control off-site storm and flood water before it reaches areas being excavated to prevent run-off of sediment. This can be achieved by construction of temporary drainage channels with sedimentation traps and/or screens • Install sediment silt fences or other similar devices at strategic locations to prevent run-offs of sediment/silt to surface water • Implement SHM Sub-Plan	• Contractor	650	• Surface Water Quality (pH, TDS, TSS, BOD, COD, Turbidity, THC, heavy metals) • Contactor's Compliance to SHM Sub-Plan	• In-Situ/ Laboratory Measurements • Visual Observation	Discharge point, mid-stream and downstream	Monthly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**450**
7	Damage to existing underground public utility	• Use utility survey maps to identify existing underground facilities before excavation works to prevent	• Contractor	400	• Complaints to Utility Service Providers	• Complaints Register • Visual Observation	Construction Site (excavated areas)	During excavation	Engineer-IUFMP Oyo State	300

	cables and pipes during excavation works and disruption of services	damages and disruption of services • Where a need for shut down of service is necessary, it should be as temporal as possible to avoid significant adverse effect on the people							Ministry of Works	
8	Health and safety risks associated with falls, injuries in improperly abandoned borrow pits	• Implement Site Reclamation Plan • Take appropriate measures to ensure borrow pits are secured where borrow pit is likely to pose significant risk after rehabilitation e.g. stock proof fencing in concert with signages	• Contractor	600	• Contractor's Compliance • Warning Signages • No of Incidents	• Visual Inspection • Incident Reports	Construction Site and material borrow area	During borrowing	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	300
9	Risk of occupational accidents and injuries from the use of machineries & equipment	• Implement site specific HSE plan	• Contractor	600	• HSE Statistics (FAC, LTI, etc) • # Accidents/Injuries • Workers using PPEs	• HSE Reports • Routine Inspection	Construction Site	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	400
Civil Engineering Works • **Alternative pedestrian bridge;** • **Approach Roads** • **Side drains** • **Culvert**		• Maintain equipment and machineries adequately to reduce their noise levels • Fit machineries and motorized equipment with exhaust mufflers/silencers to minimize noise generation • Avoid unnecessary idling of internal combustion engines	• Contractor	600	• Noise Levels (Not to exceed 90dB(A) • No of Complaints • Records of Equipment Maintenance	• In-Situ Measurement • Sighting • Complaint Register	Construction Site (high activity areas) and to some extent transport corridor	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	**300**
10	Noise and vibration from the use of machineries and motorized equipment									
11	Soil contamination and loss of soil quality from waste water and spills of oil and other petroleum products from leakages and/improper handling.	• Implement WMP including measures to control oil spillage from machinery • Proper maintenance of equipment to avoid oil spillages. • Refueling and maintenance of vehicles should conform to best practices to ensure there are no spillages or leakages.	• Contractor	800	• Soil Quality Test (Biological, Chemical and Physical Properties such as Nitrate, pH, Heavy Metals) • Contractor's Compliance • Evidence of leakages of oil and fuels	• In situ / Laboratory Measurement • Visual Observation • Spot Check	Soil Quality Sample Points Construction Site	Monthly Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	300
12	Waste generation from cement and concrete works such as cement bags and metal scraps etc.	• Implement the Waste Management Plan (WMP) • Promote avoidance; reduction; reuse and recycling; • Enhance proper handling and disposal of wastes (especially contaminated soil or water, concrete, demolition materials, oils, grease, lubricants, metals, etc.)	• Contractor	See B11 700	• Contractors Compliance • Waste Handling, and Disposal	• Visual Observation • Waste Tracking Report	Construction Site	Weekly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat Oyo state Solid waste management authority	300
13	HIV/AIDS and other STDs arising	• Provide education , guidance and counseling on HIV/AIDS and	• Contractor	600	• No of workers educated on IV/AIDS & other STDs	• Interview	Construction Site	Once (before start of	IUFMP-Social development	-

	from interactions amongst the workforce and the host community.	other STDs for workers • Provide condoms to construction staff						construction)	specialist, Communication specialist	
14	Risk of occupational accidents and diseases such as noise related problems, respiratory and eye disorders from exposure to health and safety hazards.	• Implement site specific HSE plan	• Contractor	See B9	• HSE Statistics (FAC, LTI, etc) • # Accidents/Injuries • Workers using PPEs	• HSE Reports • Routine Inspection	Construction Site	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat; Oyo State Ministry of Health	See B9
Transportation of Construction Materials		• Implement Traffic Management Plan (TMP) .	•Contractor	See A2	• TMP Implemented	-		Once	PIU	**See A2**
15	Injuries from accidental discharge of sand and stones during transportation to site	• Traffic control measures to include: strict enforcement of speed limits, use of appropriate road safety signages and signalers and minimization of movement at peak hours of the day. • Ensure submission of TMP is a condition in the procurement document for the contractor • Train drivers on haulage safety and pedestrian safety		500	• Traffic flow • Safety signage & signalers installed at strategic locations • No of Complaints from residents and other road users • No of Road Traffic Accidents (RTA) • No of Drivers Trained	Sighting Visual Observation Complaint Register Police/FRSC Report Interviews/ Training Records	Along transport corridor Construction Site	Daily Once	Oyo State Road Traffic Management Authority, (OYRTMA) Federal Road Safety Corps (FRSC)- Oyo State	**300**
Operations of Site Installations-office, workshops, storage materials		• Implement the Waste Management Plan • Promote waste avoidance; reduction; reuse and recycling; • Ensure proper handling and disposal of wastes (especially oils, grease, lubricants, sanitary wastes, metals, etc.)	• Contractor	See B11	• Contractors Compliance	• Visual Observation	Construction Site	During construction	Environmental specialist-IUFMP	See B11
16	Waste generation from site office & maintenance activities such as used containers, scraps and office waste			600	• Waste Handling, and Disposal	• Waste Tracking Report		Weekly	Oyo State Ministry of Environment and Habitat Oyo state Solid waste management authority	300
17	Underground water pollution from spillages and leakages from oil storage tanks.	• Implement measures to control oil spillages & procedures for storage handling of hazardous wastes and raw materials (e.g. batteries, chemicals, fuels). • Ensure refueling, maintenance as well as storage of diesel and oil conforms to best practices to ensure there are no spillages or leakages • Ensure fuel storage tanks are leak-proof and checked daily. The tanks should be installed in a bonded area and should be replaced in	• Contractor	650	• Written Spills &Leaks Response Procedures • Evidence of bond around storage tanks • Visual Signs of leakages of oils/ fuels • Underground Water Quality (pH, TDS, TSS, BOD, COD, Turbidity, THC, Heavy Metals)	• Visual Observation • Spot Check • Lab Measurement	Storage Area Water Quality Sampling Point	Monthly Monthly	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	500

		cases of leakage; • Store oils in original drums and kept on top of impermeable surface preferably in contractors store								
18	Risk of occupational accidents and injuries from activities carried out in site offices and workshop including maintenance works	• Implement site specific HSE plan	• Contractor	See B9	• HSE Statistics (FAC, LTI, etc) • # Accidents/Injuries • Workers using PPEs	• HSE Reports • Routine Inspection	Construction Site	Daily	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	See B9
Vegetative land management measures										
19	Impact on soil-Soil stabilization and regeneration as result of vegetation	• Nurture vegetation and prevent deforestation activities • Use vegrtal waste as compost to aid rapid vegetal propagation	• Contractor	900	• No of indigenous trees planted	• Routine Inspection	Construction Site	At completion of civil works	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	400
20	Employment of local labour for re vegetation activities resulting in improved livelihood and welfare	• Maximize employment of local labour by ensuring the submission of statement of intent to employ local labour as a condition in the procurement document for the contractor. • Target women, poor and vulnerable groups within the community for employment. • Train employed locals to acquire skills that will be useful after the completion of the project.	• Contractor	-	• No of local labour used	• Log book	Construction Site	During land vegetative measures	IUFMP- Social Development Specialist	500
	SUB TOTAL			**9,500**	**SUB TOTAL**					**6,200**
Maintenance of Culvert, approach roads, side drains and other Flood Control Structures		• Implement site specific HSE Manual	• IUFMP • Relevant line MDAs	See B9	• HSE Manual Submitted	• Sighting • HSE Reports	Project Site	During maintenance	Environmental specialist-IUFMP Oyo State Ministry of Environment and Habitat	See B9
1	Occupational accidents and injuries as a result of falling and tripping during routine maintenance	• Train maintenance and other workers on HSE • Provision of PPE to workers		500	• HSE statistics • Contractors Compliance • Training Records • Workers using PPE	• Routine Inspection				
2	Waste generation from operations and maintenance works	• Implement the Waste Management Plan (WMP) • Promote avoidance; reduction; reuse and recycling; • Enhance proper handling and disposal of wastes (especially	• IUFMP • Relevant line MDAs	See B11	• Contractors Compliance • Waste Handling, and Disposal	• Visual Observation • Waste Tracking Report	Construction Site	During maintenance	Environmental specialist-IUFMP Oyo State Ministry of	See B11 200

		contaminated soil or water, concrete, demolition materials, oils, grease, lubricants, metals, etc.)	Contarctor	500				Weekly	Environment and Habitat Oyo state Solid waste management authority	
3	Creation of employment by training locals as maintenance officers	• Maximize employment of local labour for maintenance activities by enhancing their skills through appropriate training. •	• Contractor	-	• No of local labour used	• Log book	Construction Site	Daily	IUFMP- Social Development Specialist	500
Disaster Risk Reduction/Management (DRR/DRM)		• Reduce exposure to flooding hazards, • Lesser vulnerability of people and property, • Improve disaster preparedness for adverse events	• IUFMP • Relevant line MDAs	-	• Vulnerability index	• Vulnerability maps	Project site	Annually	IUFMP OYSEMA	800
4	**Flooding events** Prevention of landslides as a result of land and drainage stabilization due to civil engineering works and vegetation									
	SUB TOTAL			**1000**	**SUB TOTAL**					**1500**
	GRAND TOTAL			**16,200**						**10,100**

3.5 Institutional Arrangement

The successful implementation of this ESMP depends on the commitment and capacity of various institutions and stakeholders to implement the ESMP effectively. Thus, the arrangement as well as the roles and responsibilities of the institutions and persons that will be involved in the implementation, monitoring and review of the ESMP are discussed below.

Annex 5 gives detailed general environmental management conditions during civil works while the roles and responsibilities of the various institutions in the implementation of this ESMP are outlined in Table 3.4

Table 3.4: Institutional Safeguards Responsibilities

S/No	Category	Roles & Responsibilities
1.	Safeguards Unit	**Environmental Safeguards** • Collate environmental baseline data on relevant environmental characteristics of the selected project sites; • Analyze potential community/individual sub-projects and their environmental impacts; • Ensure that project activities that are implemented will in accordance to best practices and guidelines set out in the site specific ESMP; • Identify and liaise with all stakeholders involved in environment related issues in the project; and be responsible for the overall monitoring of mitigation measures and the impacts of the project during implementation. **Social Safeguards** • Develop , coordinate and ensures the implementation of the social aspects of the ESMP • Identify and liaise with all stakeholders involved in social related issues in the project; • Conduct impact evaluation and beneficiaries assessment; and • Establish partnerships and liaise with organizations, Community Based Organizations (CBOs) and Civil Society Organizations (CSOs).
2.	PIU	• Liaise closely with Oyo State Ministry of Environment and Habitat in preparing a coordinated response on the environmental and social aspects of project development respectively; • Safeguards due diligence
3.	Ministry of Environment and Habitat	• Environmental compliance overseer at the State level • Lead role - provision of advice on screening, scoping, review of draft ESMP report (in liaison with Federal Ministry of Environment) • Site assessment and monitoring of ESMP implementation
4.	Federal Ministry of Environment	• Implementing authority, has the mandate to: • Ensure the smooth and efficient implementation of the project's various technical programmes • Cooperate through a Steering Committee that provides guidance to the technical aspects of all project activities; • Maintain and manage all funds effectively and efficiently for the projects
5.	Federal Ministry of Environment/EIA Department and NESREA	• Lead role - provision of advice on screening, scoping, review of draft ESMP report (in liaison with State Ministry of Environment), receiving comments from stakeholders, public hearing of the project proposals, and convening a technical decision-making panel, Project categorization for EA, Applicable standards, Environmental and social liability investigations, Monitoring and evaluation process and criteria
6.	Other relevant State Government MDAs	• Other MDAs come in as and when relevant areas or resources under their jurisdiction or management are likely to be affected by or implicated projects. • They participate in the EA processes and in project decision-making that helps prevent or minimize environmental and social impacts and to mitigate them. These institutions may also be required, issue a consent or approval for an aspect of a project; allow an area to be included in a project; or allow impact to a certain extent or impose restrictions or conditions, monitoring responsibility or supervisory oversight
7.	World Bank	• Overall supervision and provision of technical support and guidance. • Recommend additional measures for strengthening the management framework and implementation performance; • Supervising the application and recommendations of sub- project ESMPs.
8.	Contractor	• Compliance to BOQ specification in procurement of material and construction
9.	Site Engineers/Supervisors	• Provide oversight function during construction and decommissioning
10.	Local Government	• Provide oversight function across subproject in LGAs for ESMP compliance • Liaising with the PIU. Engage and encourage carrying out comprehensive and practical awareness campaign for the proposed sub-projects, amongst the various relevant grass roots interest groups
11.	Local Community	• Promote environmental awareness • Assist and Liaise with other stakeholders to ensure proper siting and provision of approval for such sites • Support with provision of necessary infrastructures and engage/ encourage carrying out comprehensive and practical awareness campaign for the proposed projects, amongst the various relevant grass roots interest groups.
12.	CDA	• Ensure Community participation by mobilizing, sensitizing community members;
13.	NGOs/CSOs	• Assisting in their respective ways to ensure effective response actions, Conducting scientific researches alongside government groups to evolve and devise sustainable environmental strategies and rehabilitation techniques, Organizing, coordinating and ensuring safe use of volunteers in a response action, and actually identifying where these volunteers can best render services effectively & Providing wide support assistance helpful in management planning, institutional/governance issues and other livelihood related matter, Project impacts and mitigation measure, Awareness campaigns
14.	Others/General Public	• Identify environmental and social issues that could derail the project and support project impacts and mitigation measures, Awareness campaigns

The proposed institutional arrangement for the ESMP implementation is shown in Figure 3.1 below.

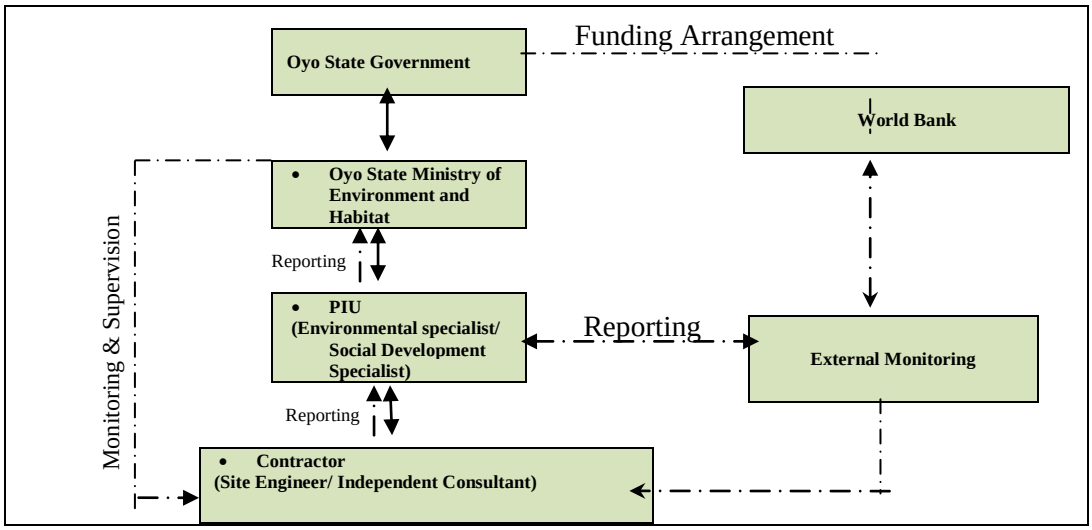


Figure 3.1: Institutional Arrangement for ESMP Implementation

3.6 Training and Capacity Strengthening Plan

Training is essential for ensuring that the ESMP provisions are implemented efficiently and effectively. Based on the assessment of the institutional capacities of the different agencies that will be involved in the implementation of the ESMP, the following broad areas of capacity building have been identified and recommended for the PIU and other relevant agencies for effective implementation of the ESMP.

- Environmental and Social Management Plan (ESMP);
- Environmental and Social Monitoring and Audit;
- Solid waste Management;
- Disaster Risk Reduction/Management;
- Environmental and Social Reporting;
- Construction Health Safety and Environment.

The type of trainings proposed to be organized during the project period and estimated cost is given in Table 3.5. The cost estimates are based on the assumption that the training program will be held in Ibadan Oyo State; resource persons are likely to come from other parts of the country and therefore require travel allowances; participants will come from institutions at state levels.

3.6.1 Training of Contractor Personnel

The Environmental and Social Consultant will be required to provide sufficient training to the contractor's team in order to ensure they are fully aware of the relevant aspects of the ESMP and are able to fulfill their roles and functions.

This training will be a requirement of contract for the Contractor. Specific training should be provided for workers that have specific tasks associated with the implementation of the ESMP such as Training on General Environmental Awareness to foster the implementation of environmentally sound practices.

Table 3.5: Proposed Training Programme for the Implementation of the ESMP

Capacity Building Activity	**Proposed Topics**	**Target Audience**	**Duration**	**Estimated Budget $**
Module 1: Training on Environmental and Social Management Plan Implementation	• Overview of Environmental and Social Impact Assessment Process • Overview of Potential Environmental and Social Impacts of Project • Environmental Pollution & Control • Environmental Engineering • Environmental and Social Management Plan • Environmental Performance Monitoring – Monitoring Mitigation Measures in ESMP • Environmental and Social Audits • Environmental Reporting	Relevant staff of Oyo State Ministry of Environment and Habitat FMEnv (EA) Officers of PIU-Environmental Specialist/Social Development Specialist Oyo State Waste Management Board and other relevant MDAs LGA departments, NGOs, CBOs., Contractor	1 day	4000
Module 2: Training on Construction HSE	• Introduction to Construction HSE • Overview of Health and Safety Hazards in Construction • Incidents: Causation, Investigation & Reporting • Excavation Safety • Construction Site Inspection • Personal Protective Equipment	Relevant staff of Oyo State Ministry of Environment and Habitat FMEnv (EA) Officers of PIU-Environmental Specialist/Social Development Specialist, and other relevant MDAs LGA departments, NGOs, CBOs, Contractor	1 day	3500
Module 3: Training on Disaster Risk Reduction/Management	• DRR/DRM concepts and applications	Relevant staff of Oyo State Ministry of Environment and Habitat FMEnv (EA), OYSEMA Officers of PIU-Environmental Specialist/Social Development Specialist, and other relevant MDAs LGA departments, NGOs, CBOs.	½ day	3000
TOTAL			**2½ days**	**$10,500**

3.7 Implementation Schedule

The activities related to environmental and social management and monitoring have to be integrated in the overall construction schedule. As discussed, most of the environmental management actions are standard or "good housekeeping" measures applicable to construction projects. These have to be observed throughout the construction activities and are shown as an overall activity. The key elements of the implementation schedule presented in Table 3.6 include the following:

- Inclusion of environmental and social requirements in bid documents and contract;
- Review and approval of Contractor's ESMP;
- Preparation and submission of construction schedule;
- Implementation of mitigation and enhancement measures;
- Training;
- Environmental and Social Auditing; and
- Monitoring and reporting of ESMP implementation.

Table 3.6: Tentative ESMP Implementation Schedule

S/N	Activity	Responsibility	Pre-Construction (Month)		Construction (Month)				Operation & Maintenance
Environmental & Social Management			**1**	**2**	**3**	**4**	**5**	**6**	
1	Clearance and Formal Disclosure of ESMP	PIU							
2	Inclusion of Environmental & Social Requirements in Bid Documents	PIU							
3	Allocating Budget for ESMP	PIU							
4	Appointing Support Staff for ESMP	PIU							
5	Review and Approval of Contractor's ESMP, Waste & Safety Plan	PIU							
6	Finalization of Engineering Designs	PIU/Engineering Design Consultant							
7	Implementation of Environmental and Social Mitigation Measures	Contractor							
8	Supervising ESMP Implementation	PIU							
9	Environmental and Social Auditing	PIU/Oyo State Ministry of Environment and Habitat/Consultant							
10	Monitoring & Reporting on ESMP Implementation	PIU/Relevant MDAs							
11	Environmental and Social Training	Environmental and Social Consultant							

3.8 Contractual Measures

It has been mentioned that most of the mitigation measures, since they are to be implemented during the construction period, will be the obligation of the Contractor. Table 3.7 below describes the actions to be taken.

Table 3.7: Contractual Measures

Step	Action	Remarks
1	The measures as described in this ESMP be included in the tender documents with appropriate flexibility to adjust these measures to site circumstances, and that the potential contractor will have to prepare their proposals taking into account these measures	The non-inclusion of these measures in the proposal will lead to a disqualification of the proponent; The contract with the successful bidder should contain these environmental management measures as firm conditions to be complied with
2	Cost of mitigation measures of **$**13,800 which is **N** 2,760,000 Naira only be added to the cost of the contractual document	The contactor must take into account and put the cost for the environmental and social requirements specified in the ESMP.

3.9 Indicative Budget for ESMP Implementation

The tentative budget for the project includes the environmental and social mitigation cost, management costs, cost of environmental monitoring and capacity building. All administrative costs for implementing the ESMP shall be budgeted for as part of the PIU costing.

The total indicative cost for implementing the ESMP is estimated **at Forty Thousand Four Hundred and Eighty Dollars only ($40,480)** which is **Eight Million and Ninety Six Thousand Naira Only (N 8,096,000).** The table 3.8 below shows an indicative budget breakdown and responsibility of the cost for implementing the ESMP in the project.

Table 3.8: Estimated Budget for the Implementation of ESMP

Item	**Responsibility**	**Cost Estimate in Nigerian Naira (N)**	**Cost Estimate In US Dollars (US$)**
Mitigation	PIU, Contractor	3,240,000	16,200
Monitoring	PIU, Oyo State Ministry of Environment and Habitat, NESREA, Oyo State Waste Management Board	2,020,000	10,100
Capacity Building	PIU, Oyo State Ministry of Environment and Habitat/Other relevant MDAs	2,100,000	10,500
Sub- Total		7,360,000	36,800
Contingency	10% of Sub- Total	736,000	3680
Total		**8,096,000**	**40,480**

Currency Unit = Nigerian Naira
US$ = N200

3.10 ESMP Disclosures

After the ESMP review and clearance by the World Bank, the following below in table 3.9 describes the process of disclosure.

Table 3.9: Disclosure procedure

	Action	Remarks
1	Disclosure on 2 state newspapers	The PIU will disclose the ESMP as required by the Nigeria EIA public notice and review procedures
2	Disclosure on 2 local newspapers	The PIU will disclose the ESMP as required by the Nigeria EIA public notice and review procedures
3	Disclosure at the Oyo State Ministry of Environment and Habitat	The PIU will disclose the ESMP as required by the Nigeria EIA public notice and review procedures
4	Disclosure at the IUFMP office	The PIU will disclose the ESMP as required by the Nigeria EIA public notice and review procedures
	Disclosure at the Local Government Office & the host community	The purpose will be to inform stakeholders about the project activities; environmental and social impacts anticipated and proposed environmental and social mitigation measures.
	Disclosure at the World Bank Info Shop	The ESMP will be disclosed according to the World Bank Disclosure Policy- OP/BP 17.50

CHAPTER FOUR: PUBLIC CONSULTATION

4.1 Summary of the proceedings of consultations

An overview of the IUFMP, the proposed intervention as well as the scope and objectives of the ESMP were presented to the community. Furthermore, the challenges that could impede the implementation of the project, potential environmental and social impacts that could arise from civil works and the support needed from beneficiary communities to ensure successful implementation were also discussed with the stakeholders. Annex 4 describes a plan for public consultations for the period of the project.

Below is a summary of the issues/comments raised by the various stakeholders and how the issues were addressed at the meeting.

Table 4.1: Summary of proceedings of consultations

Items	**Description**
Date of Public consultation	28 July 2015
Name of Stakeholders (community)	Odjayi Apete
Key Stakeholders	Community leaders; Landlord association; Women wing Youth wing; Religious groups (Christian and Muslim); Opinion groups; Youth groups; Tradesmen and artisans; NGOs; Okada riders association; Trades men (See Annex 8)
Language of communication	*English/Yoruba*
Introduction	The Social Development Specialist, IUFMP gave an opening remark, while the Environmental Specialist, IUFMP gave an overview of the IUFMP background and sub project intervention. The ESMP consultant highlighted on the scope of the ESMP study and the need of a public community consultation in order to more efficiently deliver improved project sustainably and to protect the interest of affected communities, especially the poor and vulnerable.

Issues/Comments Raised by the stakeholders	**How they were/are addressed by the Consultant or Project Officers**
A community leader sought to identify where the stream expansion begins and end and asked if the road would be constructed from Ola-Adura to the garage?	The Project Engineer stressed that the intervention is a culvert. The approach to the culvert, 250m from the road and 250m after the road would be done. He further stated that the proposed civil works would also protect water flows up and downstream.
The Community Leader further inquired if the road construction will get to Onigbodogi because the stream flows there too.	Onigbodogi is downstream, and the proposed intervention will accommodate water flow downstream during heavy rains.
An Opinion Leader, remarked that local government surveyors had come to mark out certain houses and sought to know if the intervention will affect those houses?	The Project Engineer posited that he was not aware of the exercise and IUMFP is primarily focused on flood related issues.
A Youth Leader sought to be enlightened on what measures and relief accrues to the individuals and communities should heavy machinery affect people's properties and the duration of proposed works.	The Project engineer offered that there would be no disruption of properties during construction. The ESMP consultant further stated that the contractor is obligated to follow through the mitigation measures outline din the report during the phases of reconstruction works.
Children take this way to school, so which alternative road would you make during the construction? What is the time frame for the project?	The Project Social Specialist offered that pedestrian crossways would be provided for the community as alternative during the construction. And works is expected to be completed in 6 months.

4.2 Concerns from FGDs and IDIs

Focus group discussions and in depth interviews were conducted to elicit more information about the concerns of the members of the community. The information gathered through this means is as follows:

Issues Raised	Responses from the Participants
Access to the community	The participants at the FGD and IDI sessions were of the opinion that the road to the community is in a bad state due to the eroded culvert since the flood of year 2011. They maintained that the road is not accessible to vehicles and motorcycles. It could be said that the community is not accessible. There is only a makeshift wooden bridge for pedestrians. It was further said that it is difficult to enter the community when rain falls.
Description of the means of livelihood of the community	The community is made up of civil servants, farmers, traders, transporters, business men of high repute. The means livelihood is diverse. There are also artisans.
Description of the health status of members of the community	Malaria was mentioned as the most prevalent illness in the area due to swamps and pool of water. All the participants in the different interview sessions mentioned malaria as a problem in the community.
Communities most likely to be affected as a result of the intervention and how they will be affected	Communities that were mentioned by the respondents include, Osajin, Lakoto, Masoke, Cele, Onigbodigi, Ariyibi, Apete, Ajibode. and others.
Description of the Population of the community	The respondents maintained that the predominant population in the area are youth. There are also children and the elderly. It was also said that there are many University and Polytechnic undergraduates living in the area
How the intervention will impact on the health of the people of the community	The negative impact they foresee is with regards to trucks and machinery that can cause environmental hazard and noise pollution.
How will the construction affect the economic activities of the people in the community	Some of the respondents were of the opinion that the construction will create some difficulties for businesses temporarily, but once construction is completed, it will have positive effect on business activities in the area.
Effect of the construction on the accessibility to the community	Since the culvert has not been passable for quite some time, they don't believe that the construction period will have any negative effect.
Effect of the construction on vulnerable groups	The respondents were of the opinion that there will be no negative impact on the vulnerable groups during the construction of the culvert. They were of the view that it will make life easier for them at completion of the construction of the culvert.
How will the construction affect men and women differently?	The respondents were of the opinion that men and women are likely to be affected the same way.
What will be the effect of the construction on those whose livelihood are tied to the route	The members of the community were of the view that if the construction takes a long time to be completed, it will have negative effect on those whose livelihood are tied to the route.
Suggested measures to mitigate the negative environmental and socio economic impacts of the civil works	• The contractor should make use of sound proof machine to reduce noise • The project should not become an abandoned project. • The contractor is to be mandated to frequently wet the road during construction in the dry season. • Alternate routes should be made motor able to mitigate accessibility problem • For those whose livelihoods are tied to the route, provision of alternate route and temporary bridge were suggested to keep them in operation. • The contractor should complete the project within the allotted time. • Members of the community should be employed to work during civil works

CHAPTER FIVE: SUMMARY AND RECOMMENDATIONS

The roadway that once connected two parts of the city suburbs is impassable. Alternative routes do exist but these are much longer. However, the following summary and recommendations are listed below.

- The contractor and PIU coordinate with the Oyo State Federal Road Safety Commission and Oyo State Traffic Management Agency all through construction works on site to ensure that safety is maintained and potential traffic impact managed;
- Design and construct a temporary alternative pedestrian access bridge for community members school children, the elderly, pregnant women, physically challenged etc) who use the existing dilapidated wooden access;
- Proper lightening and relevant road signages and barriers should be used during construction works for safety precautions;
- Community members sensitized and duly informed on the time and duration of civil works through consultations;
- Take into cognizance the topography of the approach roads during construction as well as side drains for proper discharge downstream and avoid sheet erosion;
- Vegetation covering stream banks be cleared and width widened along the project area of influence.
- The water ways have a lot of obstacles such as silt and solid waste which requires clearing and evacuation;
- Priority given to local workers during the construction phase. This would reduce social problems at the community levels;
- Carry the community along during project implementation and mobilize them to provide community security for personnel working on site;
- Construction works is carried out in an environmentally sustainable and socially responsible and inclusive manner;
- Potential environmental and social impacts of sufficient magnitude that could interrupt the execution of the project were not detected. Although, there were few negative environmental and social impacts that may potentially occur due to the activities associated with the proposed works but adequate mitigation measures have been provided to address them;
- The proposed intervention work is most desirable because of the obvious environmental, health and socio-economic benefits. These far out-weigh the negative environmental and social impacts that could arise in the course of implementation; and
- The combination of engineering and biological approach (Vegetative land management measures) adopted in slope stabilization work to forestall undermining and washing away of structure.
- Appropriate institutional framework has been drawn up to implement the mitigation measures and environmental management plan while the proposed monitoring programmes shall be set in motion as soon as possible.

REFERENCES

- Project Implementation Manual (PIM)
- Integrated Safeguards Data Sheet (ISDS)
- Project Appraisal Document (PAD)
- Oyo State Ministry of Environment and Habitat Edicts
- FEPA (1991): S.I.15 - National Environmental Protection Management of Solid and Hazardous Waste Regulation.
- IUFMP (2013) – Environmental and Social Management Framework (ESMF)
- IUFMP (2013) – Resettlement Policy Framework (RPF)
- UNEP (2002): Environmental Impact Assessment, Training Resource Manual
- World Bank (1999): Environmental Management Plan , OP 4.01 - Annex C
- World Bank (1996): Environmental Performance Monitoring and Supervision Update No 14
- World Bank (1999): Environmental Performance Indicators

ANNEX 1: TERMS OF REFERENCE

IBADAN URBAN FLOOD MANAGEMENT PROJECT (IUFMP)

TERMS OF REFERENCE

FOR THE PREPARATION OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS (ESMPs) FOR FOUR PRIORITY SITES UNDER THE IBADAN URBAN FLOOD MANAGEMENT PROJECT (IUFMP)

1.0 Background

The World Bank is supporting the Oyo State Government to implement the Ibadan Urban Flood Management project (IUFMP) that aims at developing a long-term flood risk management framework by initiating risk assessment, community awareness, and providing enough flexibility in the project design to make changes based on learning. The project also supports capacity building for flood risk management in the city of Ibadan. It reinforces Oyo State government's early warning and response capabilities and leverages existing World Bank projects in Oyo State in support of the IUFMP.

Specifically, the Bank's support will finance some priority investments related to improving the infrastructure of Ibadan City, especially those destroyed by August 26, 2011 floods. The Bank's support will help Ibadan reduce flood risks, improve waste collection and treatment, while developing and improving the quality of existing infrastructural assets.

The project would be designed to keep a good balance between urgent post disaster needs (dredging, reconstruction of bridges, roads, etc.) and medium-to-long term needs (institutional support, upgrading existing and building new infrastructure to upgrade services and mitigate future risks). Selected sub - projects should comply with regional and local government plans, address critical issues described above to integrate planning and operational aspects that maximize the benefits of infrastructure investments to the beneficiary communities in the long run.
The Project Development Objective (PDO) is to "improve the capacity of Oyo State to manage flood risk and to respond effectively and promptly to flooding in the city of Ibadan".

In Oyo State, IUFMP activities involve medium-sized civil works such as construction of infrastructure and/or stabilization or rehabilitation in and around the Ibadan city. These could result in environmental and social impacts thus triggering the World Bank's Safeguard Policies including Environmental Assessment OP 4.01; Involuntary Resettlement OP4.12; Natural Habitats OP 4.04; Physical Cultural Resources OP 4.11, and Safety of Dams OP 4.37.

The environmental and social safeguards concerns are being addressed through several instruments such as the Environmental and Social Management Framework (ESMF) already prepared under the project.

AIM of the ESMP:

According the Environmental and Social Screening Checklist prepared for potential projects under the IUFMP, the 4 priority sites were categorized as Category "B" project. It is therefore expected that the 4 priority sites are likely to have; (i) limited adverse impacts on the environmental and society living around the sites;(ii) the activities of the project are site specific and the impacts are irreversible; and (iii) defines the arrangements that will be put in place to ensure that mitigation measures are implemented by including recommendations of the roles and responsibilities of all critical stakeholders during project implementation.

Furthermore, the nature of the proposed activities in the 4 priority sites is such that they will not represent large-scale interventions in the site and will not fundamentally change the environment, if adequately mitigated.

The Environmental and Social Management Plan has the following goals:

- Identifying activities that may have detrimental impact on the environment, health & social life of the neighbouring people;
- Identify expected environmental impacts of various activities to be carried out under IUFMP;
- Detailing the mitigation measures that will need to be taken, and the procedures for their implementation;
- Prepare institutional arrangement for the implementation of the ESMP;
- Prepare cost estimates for mitigation and monitoring; and
- Establishing the reporting system to be undertaken during the implementation of the proposed project activities

The ESMP also serve to highlight specific requirements that will be monitored during the development and should the environmental impacts not have been satisfactorily prevented or mitigated, corrective action will have to be taken. The document should, therefore, be seen as a guideline that will assist in minimizing the potential environmental impact of activities.

2.0 SPECIFIC OBJECTIVES:

The specific objective of the consultancy is to assist Government of Oyo State to undertake the preparation of an Environmental and Social Management Plan (ESMP) for the proposed sub-project in compliance with the World Bank safeguards policies as well as the Oyo State Ministry of Environment and Habitat and the Federal Ministry of Environment guidelines and procedures.

The selected consultant will prepare four (4) seperate ESMPs reports for the following 4 priority sites: (i) Pegba - Egbada Tuba Road – Pegba (Ogbere River) bridge; (ii) Saasa River Culvert, Apete Road-Osajin; (iii) Cele-Rainbow – Agara (Ona River) Culvert; and (iv) Ola Adua stream – Akufo Road – Ola Adua (Ona River) Culvert sites.

This Terms of Reference (TOR) defines the scope of work and core tasks to be undertaken by the Consultant. The Consultant is expected to make reference to the feasibility study report and engineering designs of the proposed bridge/culverts to be constructed. The documents should be obtained from the Project Implementation Unit (PIU).

3.0 GOAL OF THE CIVIL WORK

The proposed civil work activities in the 4 priority sites is to: (i) rehabilitate and stabilize the hydraulic structures in the 4 priority sites in order to reverse the current trend as much as possible and preserve the by-pass that is being degraded by the flooding pattern in the area; and (ii) reconstruct bridges, culverts and approach roads.

5.0 SAASA RIVER CULVERTS, APETE ROAD-OSAJIN;

The sub-project activities in components 2 (sub component 2.1) will involve critical infrastructure improvements which includes the construction of a double cell box culvert and the construction of a raised roadway across the valley.

5.1 SAASA RIVER CULVERT STUDY AREA:

The culvert is located at about 1.7km from Ajibode junction in Ido Local Government Area. The site falls within the Ibadan Metropolis and lies between x and y coordinates N7.45768 and E3.87810 and at altitude 190msl. In the Saasa intervention site, the consultant will visit the whole area as delimited in the given culvert stabilization design. This area is an average of $25m^2$ around the culvert.

5.2 RATIONALE OF SAASA RIVER CULVERT STUDY

The river culvert damaged by the flood of 26th August 2011 is located at Saasa - Osajin community in Apete; a sub- urban community in Iddo Local Government Area of Oyo State. The site falls within the Ibadan metropolis. A small catchment drains through a collapsed concrete (2m x 3m) box culvert, which served as a link between two communities that are presently cut off. The collapsed culvert is overgrown with weeds. Presently, a wooden pedestrian bridge serves as the link between the two communities. The approach to the culvert on both sides of the river is highly eroded and would require re-construction together with a properly sized culvert across the river. The roadway that once connected two parts of the city suburbs is now impassable. Alternative parallel routes do exist but these are much longer.

The topography is a gentle slope and characterized by lateritic and sandy soil formations. The area receives surface water (upstream) from Saasa stream. Vegetation in the area is composed basically of sparse trees, high shrubs and grasses by the river banks downstream. However, the original vegetation has been undergoing modifications due to urban expansions and human activities.

Human activities have impacted on the environment resulting in series of environmental and social concerns such as Sheet erosion and a stagnant/dilapidated fresh water fish pond.

Fig.1 Make shift pedestrian bridge

Fig.2 Active Sheet erosion affecting existing earth road

Fig. 3 Collapsed culvert overgrown with weeds

Fig.4 Stagnant fresh water fish pond

The best option for reconstruction is a replacement with a twin box culvert ($3x2m^2$), construction of a raised roadway across the valley of about 250m with a rectangular drainage ($1x1m^2$) and construction of 100m retaining wall of up to 3m high. The minimum land area required for the proposed intervention is estimated at about $25m^2$

The earth works includes site clearing, demolition of existing structure and disposal of debris at the approved dumpsites, relocation of six (6) numbers of electric poles and diversion of water body during the raining season.

Specifically, the design includes:

- Reclamation of the eroded part of the approaching roads by filling and compaction
- Construction of chute channel to convey the flow from the area down to the culvert bed.
- Rehabilitation and stabilization of the Saasa River Culvert.
-

The objective of the project is to allow for free flow of water and ease of crossing by both pedestrian and vehicles, and consequently prevent flooding.

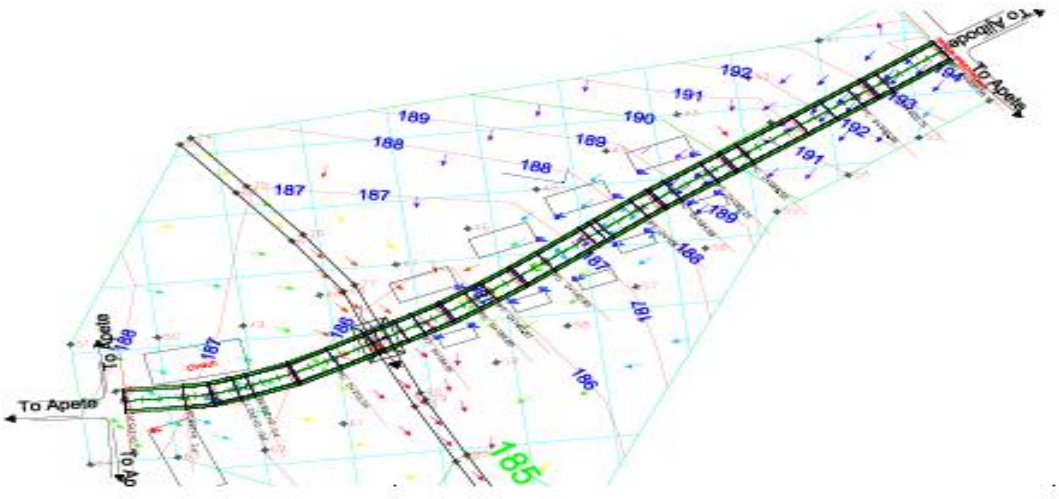


Fig. 5: Engineering design (Survey and topographic map) of Saasa Osajin Site

8.0 SCOPE OF WORK:

The objective of the consulting services is to prepare an environmental and social management plans (ESMPs) for the proposed construction at the priority sites itemized above.

The ESMP should consist of a well-documented set of mitigation, monitoring, and institutional actions to be taken before and during implementation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. It should also include the measures needed to implement these actions, addressing the adequacy of the monitoring and institutional arrangements at upstream and downstream in the intervention site.

The consultant is expected to work in close collaboration with the engineering design consultants and IUFMP Project Implementation Unit (PIU) safeguard team, and with other actors and consultants as directed by the PIU. The consultant will have to receive the Engineering design in order to take into account the technical variants of the proposed activities and also in return, inform the technical design consultants of any major constraint that may arise due to the social and environmental situation on the ground.

The consultant will take into consideration the proposed civil engineering designs, vegetative land management measures and other activities aimed at reducing or managing runoff that would be carried out within the sub-watershed. The consultant will assess natural resources and infrastructures potentially affected during project implementation and operation and select the management strategies needed to ensure that environmental and social risks are appropriately mitigated.

8.1.0 THE CORE TASKS FOR THE CONSULTANT

These shall include:

- Reviewing existing documentation of the IUFMP , all relevant safeguards documents and the PAD;
- Review Environmental Assessment procedures of the World Bank safeguards policies especially Environmental Assessment (OP 4.01);
- Assess the potential environmental and social impacts related to project activities and recommend adequate mitigation measures, including costs estimation..
- Review institutional assessment and framework for environmental management.
- Identify responsibilities and actors for the implementation of proposed mitigation measures
- Assess the capacity available to implement the proposed mitigation measures, and suggest recommendation in terms of training and capacity building, and estimate their costs.
- Develop a Environmental and Social Management Plan (ESMP) for the project. The ESMP 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 calendar of implementation.
- Public consultations. The ESMP results and the proposed mitigation measures will be discussed with relevant stakeholders, NGOs, local administration and other organizations mainly involved by the project activities. Recommendations from this public consultation will be include in the final ESMP report.
- Preparing the ESMP according to the generic contents presented hereafter.

8.1.1 The following socio-economic issues shall be addressed in the ESMP:

- Establish social baseline for pre project intervention
- Determine the project's social impacts on health and social well-being ; quality of the living environment; economic material well-being ;Family and community ; and gender relations
- A summary of the impacted communities for the project: location, access, population (number, demographic and social characteristics); economy (employment rate, income distribution); services (types, capacity, and adequacy) and housing. Concern is the ability to provide work force, service new development and absorb and adjust to growth (worker/family).
- The report should identify and assess the social impacts identified during the public consultation process and those that, based on consultant's experience, are also likely to occur. In some instances the affected communities may not be aware of or be in a position to identify all the social impacts that may occur. However, this does not mean that they will not occur. In such cases the consultant should use his/her experience to identify additional social impacts that have not been raised by the public. A summary of the views of the population including vulnerable groups, determined through thoroughly documented discussions with local communities. These meetings and discussions must be documented and should show how issues and problems raised are or will be resolved
- Pay particular attention to the impacts of the project on vulnerable and marginalized individuals and groups (including but not limited to mobility impaired individuals and groups and People Living with Disability)
- Detail measures that will need to be taken to mitigate the negative social impacts identified and the procedures for their implementation;
- Identifying key uncertainties and risks**:** Identify and communicate any key uncertainties and risks associated with the accuracy of the findings of the social assessment, as well as of the proposed project. Some sources of uncertainty and risk commonly associated with projects are linked to: (a) Lack of adequate information at the community level; (b) Creation of employment and business

opportunities for members from the local, historically disadvantaged communities; (c) The influx of job seekers and construction workers to the area and the impact on services; etc.

- Assess the impact of the construction on individuals and groups whose livelihoods are tied to the route/road (motor cycle taxi and tricycle operators etc.). As part of consultations, the ESMP should identify the potential negative impact on the livelihoods of these individuals and groups and propose appropriate mitigation measures
- Assess potential impact of the project on property access and suggest measures to minimize the effects on property access
- Information will be gathered from field surveys and secondary data sources (interviews, structured questionnaires, in-depth interviews and focus group discussions).

8.2.0 CONTENT OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The 4 ESMP reports to be prepared shall be presented in a concise format containing all studies, processes, analyses, tests and recommendations for the proposed intervention. The report shall focus on the findings, conclusions and any recommended actions, supported by summaries of the data collected and citations for any references used. The ESMP report will include the following topics:

Preliminary pages

Cover page
Table of contents
List of acronyms and their definitions
Executive Summary

Chapter 1: Introduction

- Description of the proposed intervention
- Objectives of ESMP
- Rationale for ESMP
- Relevant Maps

Chapter 2: Institutional and Legal Framework for Environmental and Social Management

- Discussion of the World Bank safeguards policies triggered by IUFMP and the intervention at Saasa site.
- Summary of relevant local and federal policy, legal, regulatory, and administrative frameworks

Chapter 3: Biophysical and Socio Economic Characteristics

- Description of the area of influence and environmental baseline conditions
- Analysis of existing livelihoods opportunities, income, gender characteristics, age profile, health, transport access, existing community structures.

Chapter 4: Institutional Assessment and framework for Environmental and Social Management.

- Highlight and define the roles, responsibilities and institutional arrangements for the implementation of the ESMP, as they are fundamental to the effective implementation of the environmental and social safeguard measures.

Chapter 5: Assessment of Potential Adverse Environmental and Social Impacts and Analysis of Alternatives

- Methods and techniques used in assessing and analyzing the environmental and social impacts of the proposed project

- Discussion of alternatives to the current project and reasons for their rejection, including short description of likely future scenario without intervention;
- Discussion of the potentially significant adverse environmental and social impacts of the proposed project

Chapter 6: Environmental and Social Management Plan (ESMP), including:

- Including the proposed mitigation measures(including cultural heritage management);
- Institutional Responsibilities for Implementation;
- Monitoring indicators;
- Institutional responsibilities for monitoring and implementation of mitigation;
- Summarized table for ESMP including costs
- ESMP Training requirements

Chapter 7: Consultation with Stakeholders

- This chapter shall summarize the actions undertaken to consult the groups affected by the project, as well as other concerned key stakeholders including Civil Society Organizations. The detailed record of the consultation meetings shall be presented in annex to the ESMP.

Chapter 8: Summary and Recommendations

Annexes

Annex 1: List of Stakeholders consulted
Annex 2: Summary of World Bank Safeguard Policies
Annex 3: General Environmental Management Conditions for Constructions/Civil Works.
Annex 4: References
Annex 5: Photos
Annex 6: Checklist for Field data gathering

The main text of the ESMP should focus on findings, conclusions and recommended actions, supported by summaries of data collected and citations for any references used in interpreting those data. It should provide a description of the specialist studies undertaken and the report should include a bibliography, maps, photographs, diagrams and any other diagrammatic representation needed to facilitate understanding of the main text, detailed data should be presented in annexes or a separate volume. Unpublished documents used in the assessment should also be included or referenced in an appendix and the location of the originals of such documents indicated.

9.0 Qualifications and Experience of the Consultant:

The consultant should have:

- Experience with, and a professional/technical background appropriate for understanding both the environmental and social management implications of flood risk intervention projects, especially in urban areas, including their design, construction, operation and monitoring.
- At least five (5) years' experience in practical safeguards, social and environmental management with demonstrated proficiency in the preparation, review, and approval of EAs/ESIAs/ESMPs to meet World Bank standards
- Excellent analytical, communication and writing skills.
- It is highly desirable that the consultant have experience with working with international development institutions like the World Bank, and on infrastructure related projects.

9.1.0 Deliverables and timing:

Inception reports: Inception reports should be submitted about one week after awarding/signing of contract. The PIU shall double-check and ensure that the consultant has actually commenced work and that the consultant understands tasks.
Week 2: A draft ESMPs will be submitted for comments in **Two weeks** from the date of signing the contract. It will identify all the areas, the mitigation measures, and the environmental and social issues associated with the site intervention sub-projects, as well as the adequacy of the monitoring and institutional arrangements in the intervention site.
Week 3: The draft final ESMP Reports will take into account all comments, and will be submitted to the PIU at the end **of Three weeks** after commencement of contract.
Week 4: The Final ESMPs will be submitted to the PIU **Four weeks** after commencement of the consultancy.

The consultant will submit six (6) hard copies and a soft copy at each stage of the report.

Activities	Week 1	Week2	Week3	Week4
Contract Signing	X			
Submission of Inception Reports	X			
Meeting with the PIU		X		
Submission of Draft Reports		X		
Submission of Draft Final Reports			X	
Submission of Final Reports				X

9.2.0 Responsibilities of IUFMP

- The Consultant shall report to the Project Coordinator of the Project Implementation Unit of IUFMP.
- The PIU would review and discuss the Inception reports with the Consultant and necessary adjustment will be embarked upon.
- The Consultant would especially carry the PIU along in the Stakeholders consultative forum.
- The Consultant may seek Technical assistance from the PIU Specialists, especially the Safeguards Specialists of the PIU.
- The Draft Reports and Draft Final Reports would be reviewed by the PIU and relevant MDAs.
- In addition to the supervision and other responsibilities contained in the contract for this consultancy, the IUFMP shall provide the consultant with the following:
    - All relevant project instruments ;
    - Project Appraisal Document
    - Project Implementation Manual
    - World Bank safeguards policies;
    - Intervention design ;
    - Access to relevant officials, groups and communities

9.3.0 Payment Schedule

10% of Contract sum on submission of inception report
30 % of Contract sum on submission of Draft Report
40% of Contract sum on submission of Draft Final Report
20% of Contract sum of submission and Acceptance of Final Report

ANNEX 2: SUMMARY OF TRIGGERED WORLD BANK ENVIRONMENTAL AND SOCIAL SAFEGUARD POLICIES

The World Bank has 10 + 2 Safeguard Policies to reduce or eliminate the negative environmental and social impacts of potential projects, and improve decision making. Details of the safeguard policies can be seen in Annex 2. These World Bank safeguard operational policies are:

- OP/BP 4.01: Environmental Assessment
- OP/BP 4.04: Natural Habitats
- OP 4.09: Pest Management
- OP/BP 4.12: Involuntary Resettlement
- OP 4.10: Indigenous Peoples
- OP 4.11: Physical Cultural Resources
- OP 4.36: Forests
- OP/BP 4.37: Safety of Dams
- OP/BP 7.50: Projects on International Waters
- OP/BP 7.60: Projects in Disputed Areas

Plus 2

- OP/BP 4.00: Use of Country System

Safeguard Policies	**Triggered by IUFMP?**		**Triggered by the reconstruction of the Saasa River Culvert Project?**		**Applicability to Project due to**	**How Project Address Policy Requirements**
	Yes	**No**	**Yes**	**No**		
Environmental Assessment (OP/BP 4.01)	[x]	[ ]	[x]	[ ]	Civil works with site-specific environmental and social impacts	ESMF prepared for IUFMP & site specific mitigation measures developed in this ESMP
Natural Habitats (OP/BP 4.04)	[x]	[]	[ ]	[x]	NA	NA
Pest Management (OP 4.09)	[ ]	[x]	[ ]	[x]	NA	NA
Physical Cultural Resources (OP/BP 4.11)	[x]	[]	[ ]	[X]	NA	NA
Involuntary Resettlement (OP/BP 4.12)	[x]	[ ]	[ ]	[x]	NA	NA
Indigenous Peoples (OP/BP 4.10)	[ ]	[x]	[ ]	[x]	NA	NA
Forests (OP/BP 4.36)	[]	[x]	[ ]	[x]	NA	NA
Safety of Dams (OP/BP 4.37)	[x]	[]	[ ]	[x]	NA	NA
Projects in Disputed Areas (OP/BP 7.60)*	[ ]	[x]	[ ]	[x]	NA	NA
Projects on International Waterways (OP/BP 7.50)	[]	[x]	[ ]	[x]	NA	NA

ANNEX 3: HOUSEHOLD QUESTIONNAIRE FOR THE ESMP

QUESTIONNAIRE FOR THE PREPARATION OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR THE IUFMP PRIOIRITY SITES

The Oyo State Government via Ibadan Urban Flood Management Project (IUFMP) intends to: (i) rehabilitate and stabilize the hydraulic structures in this priority site in order to reverse the current trend as much as possible and preserve the by-pass that is being degraded by the flooding pattern in the area; and (ii) reconstruct bridges, culverts and approach roads. IUFMP is financed with credit from the World Bank. The project is aimed to improve the capacity of Oyo State to manage flood risk and to respond effectively and promptly to flooding in the city of Ibadan.

This interview forms part of the Environmental and Social Management Plan (ESMP) of the project. The aim is to find out how the project' civil works and process activities may affect the social wellbeing and quality of living environment in the area. We need your cooperation in answering the questions asked below. Your answers will be treated as confidential.

Please Tick the Appropriate Answers

SECTION A: IDENTIFICATION AND BACKGROUND CHARACTERISTICS

NO.	QUESTION AND FILTERS	CODING CATEGORIES	CODES	SKIP
A1	Name of State			
A2	LGA			
A3	Name of Town/City/ Community			
A4	Stratum	Urban	1	
		Rural	2	
A5	Email (Optional)			
A6	Phone number (Optional)			
A7	Age Last Birthday			
A8	Gender of Respondent	Male	1	
		Female	2	
A9	Marital Status	Never Married	1	
		Married	2	
		Separated	3	
		Divorced	4	
		Widow	5	
A10	What religion do you practice?	Christian Muslim Traditional Others Specify	1 2 3 4	
A11	Highest Educational Attainment	No Formal	1	
		Primary School Not Completed	2	
		Primary School Completed	3	
		Secondary School Not Completed	4	
		Secondary School Completed	5	
		Post Secondary Education	6	
		Koranic Education	7	
		Other (specify)		
A12	Occupation of respondents	Civil servants Farming Fishing Artisan Trading Professional Retired	1 2 3 4 5 6 7	

		Others Specify	8	
A13	How long have you lived in this community? (Years)			
A14	• What sort of housing does your household live in?	Bungalow Duplex Detached Semidetached One room apartment Self-contain Tent	1 2 3 4 5 6 7	
A15	What materials are used for your house?	Plastered mud Cement block Brick Others, Specify	1 2 3 4	
A16	What is the main source of drinking water for members of your household	Piped water Dug well Water from spring Rainwater Tanker/Truck Cart with small tank Surface water Sachet/bottle water Others, Specify	1 2 3 4 5 6 7 8 9	
A17	What kind of toilet facility do members of your household usually use?	Flush or pour flush toilet Pit latrine Composting toilet Bucket toilet No facility/Bush field Others, specify	1 2 3 4 5 6	
A18	How would you describe the location of your home?	Flat ground Sloppy ground Flood plains Steep slope	1 2 3 4	
A19	Which population group is mostly represented in this community?	Elderly Middle age Youth Adolescent Children Handicap	1 2 3 4 5 6	
A20	Are there many unemployed youth in this community?	Yes No	1 2	
A21	In your opinion, do you think this community can provide the manpower need for the construction?	Yes No	1 2	
A22	Which gender is the most mobile in this community?	Male Female	1 2	
A23	Which gender is the most marginalize in this community?	Male Female	1 2	
A24	Which gender is likely to be mostly employed in this community?	Male Female	1 2	

SECTION B: SOCIOECONOMIC ATTRIBUTES
Part A: Household Composition

Please report the household composition. Please note: A "household" includes all members of a common decision making unit (usually within one residence) that are sharing the same household resources. These include dependents that are away from home.

Part B: Sources of income and livelihood		
B1	What is your regular source of income? (Naira)	
B2	How much did you earn in the last one month	

B3	If you are in a wage employment, how much do you receive monthly?			
B4	Did you receive any financial or in-kind support from relatives, friends or charitable organizations in the last 12 months?	Yes No	1 2	 If no, skip to B6
B5	If yes, complete the following table.			

Source of financial support	1. Total amount (cash) received in the last 12 months (Naira)	2. Value of in-kind support received in the last 12 months (Naira)
1. Relatives & family members away from home		
2. friends		
3. charitable organizations from outside this community		
4. Mutual support groups (local)		
5. other sources financial support(specify)		

B6	What is your Annual Income?	<50,000 50,001-100,000 100,001-500,000 500,001 and above	1 2 3 4	
B7	**If Annual Income is not known**, what is your Monthly income (Naira)			
B8	Estimate the total annual incomes of other members of your household. (Naira)	<50,000 50,001-100,000 100,001-500,000 500,001 and above	1 2 3 4	
B9	**If Annual Income is not known**, what their Total Monthly Incomes…(Naira)			
B10	How much do you spend on food on average every day in your household? (Naira)			
B11	How much did your household spend on food in the last seven days? (Naira)			

SECTION C: AVAILABILITY OF AMENITIES

C1 How would you describe the condition of the following amenities in your community?

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
Roads to the community					
Roads within the community					
Schools in the community					
Public Health Institutions					
Potable Water					
Public Electricity					
Communication facilities (Postal Service, Telephone)					
Public recreation facilities					

C2	What is the major source of water available to your household? **(Please Tick One)**	River Bore hole Commercial Bore hole Private Pond Public Pipe borne Well Water Vendor Others, Specify	1 2 3 4 5 6 7 8	
C3	If a public pipe borne water, how regular does the tap flow in a week?	Regularly Occasionally Rarely	1 2 3	
C4	What is the primary source of electricity/ light to this community? **(Please Tick One)**	Hurricane Lamp Private Generators Community Generators State Government Utility board Company operating in your community IBEDC (National Grid)	1 2 3 4 5	

			6	
C5	What is the secondary source of electricity? **(Please Tick One)**	Hurricane Lamp Private Generators Community Generators State Government Utility board Company operating in your community IBEDC (National Grid)	1 2 3 4 5 6	
C6	What is the main fuel you use for cooking? **(Please Tick One)**	Firewood Charcoal Kerosine Gas Electricity Animal waste Crop residue Saw dust Others, specify	1 2 3 4 5 6 7 8 9	
C7	How do you dispose your household waste?	Burying Bush Burning Open dump Organised Collection Others, Specify.....	1 2 3 4 5 6	
C8	Who is responsible for solid waste management?	Government Private	1 2	
	How effective is solid waste management in your community?	Very effective Fairly effective Not effective	1 2 3	
C9	Indicate types/ of health care institutions in your community			

Types	Exists (yes/no)	Near from my house (yes/no)	Medical personnel always available (yes/no)	Drugs in stock most times (yes/no)
Hospital (public)				
Hospital ((private)				
Maternity				
Dispensary				
Health center				
Private clinic				
Patent medicine store				
Pharmacy (chemist)				
Traditional healing home				

C10	Is your present state of health affected in any way by flooding?	Yes No	1 2	
C11	If yes to C9, in what way?	Skin diseases Cough Catarrh Malaria Water-borne diseases Other, Specify.....	1 2 3 4 5 6	
C12	How do you manage your health conditions when sick?	Attend hospital/clinic Buys drugs from nearby chemist Traditional medicine None Others Specify.....	1 2 3 4 5	
C13	If you do attend hospital/clinic, when last did you visit one?	Last six months Last one year Last five years More than five years ago Never visited one.	1 2 3 4 5	

C13	Do you have a fire management agency in the community?	Yes No	1 2	
C14	How effective is fire service in your community?	Very effective Fairly effective Not effective	1 2 3	
C15	Have you had any security challenges in this community?	Yes No	1 2	
	How effective is policing in your community?	Very effective Fairly effective Not effective	1 2 3	
C16	Where is the nearest police station?			
SECTION D FLOODING AND IMPACTS				
D1	How concerned are you personally about the occurrence of flooding in your city/community?	Extremely concerned Very concerned Concerned Not concerned	1 2 3 4	
D2	Please indicate the major floods that have impacted your community in past 4 years	2011 2012 2013 2014	1 2 3 4	
D3	What areas of your community were impacted (Please include description with street names)			
D4	What has been the impact of the flood event on road infrastructure	Wash the road away Cause pot holes Cut off the road completely Others, specify.....	1 2 3 4	
D5	What has been the impact of the flood event on bridge/culvert infrastructure	Wash off the bridge Collapsed the bridge Undermine/Weaken the bridge Others, Specify.....	1 2 3 4	
D6	What has been the impact of the flood event on accessibility to the community?	Hinders movement Block access completely Block access for some time Block vehicular movement Others specify.....	1 2 3 4 5	
D7	What has been the impact of the flood event on Livelihood in the community?	Reduce business Erodes farmlands Others specify	1 2 3	
D8	Describe the level of awareness about this project in your community?	Very aware Moderately aware Not aware	1 2 3	
D9	Are you concerned about the menace of flooding events in your community?	Yes No	1 2	
D10	Are you aware of the proposed flood remedial development?	Yes No	1 2	If No, go to D 11
D11	If yes, what is the source?	Television Newspaper Government official Friend/relative Radio Community association Others, Specify.....	1 2 3 4 5 6 7	
D12	What is your opinion about the project?	Good Bad Can't say	1 2 3	
D13	Do you think the project can cause restiveness in your community?	Yes No	1 2	
D14	If D12 is yes how will the proposed	• Disrespect of norms and	1	

	intervention result in restiveness	culture by contractors • Loss of farmland / Property • Possible theft of sacred/archaeological items • Local people not employed during construction • Others, specify:	 2 3 4 5	
D15	If good, what positive impacts do you perceive (Tick as many as applicable)?	Increase in employment opportunity Increase in land price More value for local product Better infrastructure Facility Increase in business opportunity. Others Specify	1 2 3 4 5 6 7	
D16	If bad, what negative impacts do you perceive (Tick as many as applicable?	Pressure on existing infrastructure Influx of population Conflict with outsiders Increase in antisocial elements Others Specify	1 2 3 4 5	
D17	What impact do you think the construction work to be carried out will have on members of your household?	Reduce business opportunity Not been able to go to farm Dusty environment during dry season Others Specify	1 2 3 4	
D18	Do you think the intervention will have any effect on the health of your household?	Yes No	1 2	
D19	If yes to D15, what effect do you think the intervention will have on the health of your household members?	Skin diseases Cough Catarrh Malaria Water-borne diseases Other, Specify.....	1 2 3 4 5 6	
D20	What effect will the construction or rehabilitation have on accessibility to your property?	Serious Negative effect Slight negative effect No effect Others Specify	1 2 3 4	
D21	How do you think this problem can be mitigated?			
D22	In your opinion, do you think the intervention will affect male and female differently?	Yes No	1 2	
D23	Who are likely to be more negatively affected?	Male Female	1 2	
D24	In your opinion, how has the standard of living of your household changed over the previous four years?	Same Better Worse	1 2 3	
D25	Is the option in D17 propelled by the flooding problem	Yes No	1 2	
D26	If D18 is yes, do you think the proposed intervention will improve the situation?	Yes No	1 2	
D27	If D19 is yes specify how the project will improve the situation			
D28	How do you suggest that the flooding problem in this community can be arrested?			
D29	What sort of transport does your family own?	Bicycle Motorcycle Tricycle Car Truck Bus Others, Specify.....	1 2 3 4 5 6 7	
D30	What mode of transport do you frequently	Bicycle	1	

	use?	Motorcycle Tricycle Car Truck Bus Others, Specify.....	2 3 4 5 6 7	
D31	In what ways do you think the construction will affect Okada riders in this community?	Improve their business Reduce their business Will have no effect	1 2 3	
D32	In what ways do you think the construction will affect Tricycle operators in this community?	Improve their business Reduce their business Will have no effect	1 2 3	
D33	In what ways do you think the construction will affect Car/Bus drivers in this community?	Improve their business Reduce their business Will have no effect	1 2 3	
D34	How will the construction affect school children?	Stop them from going to school Make them go late to school Can cause injury while going to school Make them return late from school Have no effect	1 2 3 4 5	
D35	What effect will the construction have on the elderly?	Disrupt their movement Cause injury Disallow relatives from visiting Have no effect	1 2 3 4	
D36	What effect will the construction have on pregnant women?	Deny access to ante natal clinic Cause delivery at home Cause injury Have no effect	1 2 3 4	
D37	What effect will the construction have on the handicap/visually impaired?	Impaired movement Cause injury Have no effect	1 2 3	

SECTION E: ENVIRONMENT			
E1	On what scale has damage to wildlife habitats occurred due to past flooding events	Large Medium Small None	1 2 3 4
E2	What species of animals exist in the community?	Fishes Amphibians Reptiles Aves Mammals None	1 2 3 4 5 6
E3	What are the major sources of air pollution?	Car fumes Industrial fumes Animal husbandry Burning Others Specify	1 2 3 4 5
E4	What are the major sources of noise pollution?	Transportation Construction Commercial and Industrial activities Social events household sources Others Specify	1 2 3 4 5 6
E5	What effects/changes have you noticed on the landscape due to flooding?	Increased sedimentation Increased runoff Soil contamination Erosion Salinization Land degradation Others Specify	1 2 3 4 5 6 7
E6	Are there any changes to the natural vegetation in the area	Yes No	1 2

E7	What are the major sources of natural vegetation loss in your area	Cleaning of drainage Channels along flood plains Land clearing Burning Urbanization Agriculture Others Specify	1 2 3 4 5 6 7
E8	What are the sources of surface/ground water pollution	Municipal wastewater Household waste Human waste Septic tanks Others Specify	1 2 3 4 5

ANNEX 4: PLAN FOR CONSULTATIONS FOR THE PERIOD OF THE PROJECT

Timing/Phasing	Stakeholder Groups	Key consultation points	Language of Communication	Responsibility	Items	Indicative Cost USD$
Pre – Construction Phase	• Landlord Association • Opinion Leaders • Community Based Organizations • Women Groups • Okada Riders Organization • Youths Wing • Religious Organizations • Tradesmen and artisans • NGOs • Physically Challenged Associations	• Community perception and measures for enforcing social protection and social accountability • Environmental sustainability and measures for enforcing environmental sound management • The cooperation of the community members with the contractor • Security of lives of the construction workers • Safe work procedures for operations and activities • Security of equipment brought to the site by the contractor • Sensitizing communities on alternate routes • Availability of local workforce within the community	English/Yoruba	IUFMP- Social Development Specialist, Environmental specialist & Communication Specialist /Consultant	• Consultants fees • Hiring and outfitting of meeting venues • Public opinion surveys • Preparation and distribution of materials • Staff time preparing, attending, and keeping records on public meetings • Maintenance of channels of communication (telephone • Hotline, radio announcements , or other • means) • Travel expenses	1000
Construction Phase	•	• Review of cooperation with the contractor • Review of security situation in the environment • Discussion of emerging issues not anticipated as a result of the construction • Review of accessibility to the community • Discussions on how the vulnerable and marginalized groups are coping	English/Yoruba	IUFMP- Social Development Specialist, Environmental specialist & Communication Specialist /Consultant	Same as above	2000
Operations and	•	• Appreciation of	English/Yoruba	IUFMP- Social	Same as above	1700

Maintenance Phase		the community members for their support and cooperation during the construction • Enlightenment on how to maintain the bridge/culvert constructed • Enlightenment on proper solid waste disposal to prevent blockage of water ways • Discussion on proper ways to maintain side drains along the approach roads. • Enlightenment on Disaster Risk Reduction measures.		Development Specialist, Environmental specialist & Communication Specialist /Consultant		
TOTAL						**3700**

ANNEX 5: GENERAL ENVIRONMENTAL MANAGEMENT CONDITIONS FOR CONSTRUCTION CONTRACTS

General

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) or Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the Supervising Engineer (SE) to fulfil his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.
2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an EMP. In general these measures shall include but not be limited to:
(a) Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.
(b) Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.
(c) Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.
(d) Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering into rivers, streams, irrigation channels and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.
(e) Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.
(f) Upon discovery of ancient heritage, relics or anything that might or believed to be of archaeological or historical importance during the execution of works, immediately report such findings to the SE so that the appropriate authorities may be expeditiously contacted for fulfilment of the measures aimed at protecting such historical or archaeological resources.
(g) Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
(h) Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.(i) Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.
(j) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.
(k) Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.
3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.
4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan / strategy to ensure effective feedback of monitoring information to project management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.
5. Besides the regular inspection of the sites by the SE for adherence to the contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the SE, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

Worksite/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be bunded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed off at designated disposal sites in line with applicable government waste management regulations.
7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.
8. Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.
9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.
10. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.
11. If disposal sites for clean spoil are necessary, they shall be located in areas, approved by the SE, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.
13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.
14. New extraction sites:
a) Shall not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.
b) Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.
c) Shall not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.
d) Shall not be located in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities and an environmental impact study shall be conducted.
e) Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.
f) Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.

15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.
16. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.
17. The Contractor shall deposit any excess material in accordance with the principles of the general conditions, and any applicable EMP, in areas approved by local authorities and/or the SE.
18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the SE and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

Rehabilitation and Soil Erosion Prevention
19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.
20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.
21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.
22. Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.
23. Locate stockpiles where they will not be disturbed by future construction activities.
24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.
25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.
26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
27. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.
28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.
29. Minimize erosion by wind and water both during and after the process of reinstatement.
30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.
31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

Water Resources Management
32. The Contractor shall at all costs avoid conflicting with water demands of local communities.
33. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.
34. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.
35. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities down stream, and maintains the ecological balance of the river system.
36. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.
37. Wash water from washing out of equipment shall not be discharged into water courses or road drains.
38. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

Traffic Management
39. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.
40. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
41. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

Blasting
42. Blasting activities shall not take place less than 2km from settlement areas, cultural sites, or wetlands without the permission of the SE.
43. Blasting activities shall be done during working hours, and local communities shall be consulted on the proposed blasting times.
44. Noise levels reaching the communities from blasting activities shall not exceed 90 decibels.

Disposal of Unusable Elements
45. Unusable materials and construction elements such as electro-mechanical equipment, pipes, accessories and demolished structures will be disposed of in a manner approved by the SE. The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.
46. As far as possible, abandoned pipelines shall remain in place. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes shall be safely removed and stored at a safe place to be agreed upon with the SE and the local authorities concerned.
47. AC-pipes as well as broken parts thereof have to be treated as hazardous material and disposed of as specified above.
48. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

Health and Safety
49. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS.
50. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.
51. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

Repair of Private Property
52. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.
53. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the SE. This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation.

Contractor's Environment, Health and Safety Management Plan (EHS-MP)

54. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's EHS-MP will serve two main purposes:

- For the Contractor, for internal purposes, to ensure that all measures are in place for adequate EHS management, and as an operational manual for his staff.
- For the Client, supported where necessary by a SE, to ensure that the Contractor is fully prepared for the adequate management of the EHS aspects of the project, and as a basis for monitoring of the Contractor's EHS performance.

55. The Contractor's EHS-MP shall provide at least:

- a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an EMP;
- a description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
- a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and
- the internal organizational, management and reporting mechanisms put in place for such.

56. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts, and has defined appropriate measures to counteract any potential impacts.

EHS Reporting

57. The Contractor shall prepare bi-weekly progress reports to the SE on compliance with these general conditions, the project EMP if any, and his own EHS-MP. An example format for a Contractor EHS report is portrayed below. It is expected that the Contractor's reports will include information on:

- EHS management actions/measures taken, including approvals sought from local or national authorities;
- Problems encountered in relation to EHS aspects (incidents, including delays, cost consequences, etc. as a result thereof);
- Lack of compliance with contract requirements on the part of the Contractor;
- Changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects; and
- Observations, concerns raised and/or decisions taken with regard to EHS management during site meetings.

58. It is advisable that reporting of significant EHS incidents be done "as soon as practicable". Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keep his own records on health, safety and welfare of persons, and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. A sample format for an incident notification is shown below. Details of EHS performance will be reported to the Client through the SE's reports to the Client.

Training of Contractor's Personnel

59. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own EHS-MP, and are able to fulfil their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP. General topics should be:

- EHS in general (working procedures);
- emergency procedures; and
- social and cultural aspects (awareness raising on social issues).

Cost of Compliance

60. It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers this cost. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable EHS impact.

3. **Example Format:** EHS **Report**

Contract: **Period of reporting:**

EHS management actions/measures:

Summarize EHS management actions/measures taken during period of reporting, including planning and management activities (e.g. risk and impact assessments), EHS training, specific design and work measures taken, etc.

EHS incidents:

Report on any problems encountered in relation to EHS aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

EHS compliance:

Report on compliance with Contract EHS conditions, including any cases of non-compliance.

Changes:

Report on any changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects.

Concerns and observations:

Report on any observations, concerns raised and/or decisions taken with regard to EHS management during site meetings and visits.

Signature (Name, Title Date):

Contractor Representative

4. Example Format: EHS Incident Notification

EHS Incident Notification

Provide within 24 hrs to the Supervising Engineer

Originators Reference No:.....

Date of Incident:..... **Time:**.....

Location of incident:.....

Name of Person(s) involved:.....

Employing Company:.....

Type of Incident:.....

Description of Incident:

Where, when, what, how, who, operation in progress at the time (only factual)

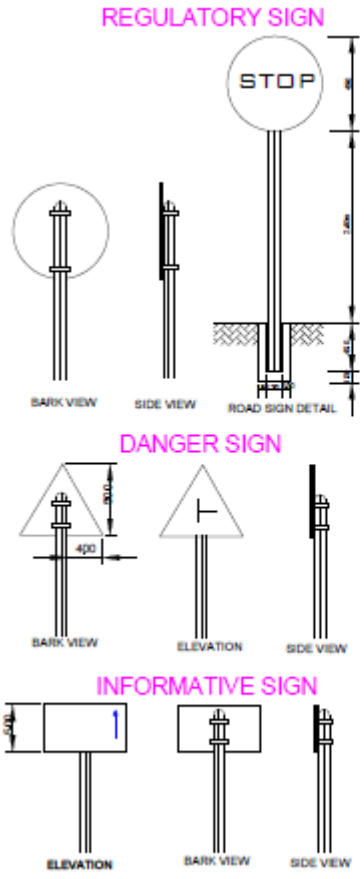
Immediate Action:

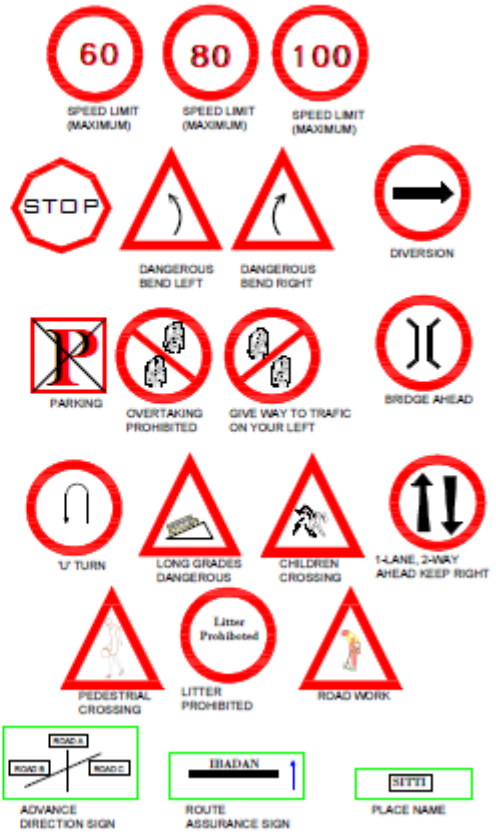
Immediate remedial action and actions taken to prevent reoccurrence or escalation

Signature (Name, Title, Date):.....

Contractor Representative

ANNEX 6: ROAD SIGNS AND MARKS





ANNEX 7: PUBLIC CONSULTATION IN PICTURES

Plate 5: Cross section of community members

Plate 6: Community member making a comment

Plate 7:

members
interview

Cross section of community
Plate 8: In-depth (Women group)

Plate 9: In-depth interview (Men group)

Plate 10: Community member making a comment

Plate 11: Cross section of community members

Plate 12: Director, Community Development, Ido LGA

ANNEX 8: PUBLIC CONSULTATION ATTENDANCE SHEET

ATTENDANCE SHEET

COMMUNITY/STAKEHOLDER CONSULTATION-
FOR THE PREPARATION OF
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS (ESMPs) FOR SASA RIVER CULVERT
APETE ROAD-OSAJIN

Date: 28th July 2015

NO	NAME	~~COMMUNITY~~/ORGANIZATION/ ASSOCIATION	DESIGNATION	PHONE	EMAIL
1.	Prince Adeolu Adeyefa	Odejayi	Sec, Odejayi	07038569490	adeyefaadeolu@yahoo.com
2	MR Kamil [illegible]	Land Lord [illegible]	Chairman	08032273962	
3	Alhaji Raufu [illegible]	Landlord Association	Chairman	08033325739	
4	Mr. Matthew [illegible]	✓ ✓	Vice chairman	08060665948	
5	Bolaji M. O.	✓	Opinion Leader	08030766356	
6	Gbadebo Adewoyin	Landlord Association Odejayi	Gen. Secretary	08039185030	[illegible]
7	Evang E.O. Taiwo.	Landlord Association	Electricity Chairman	08028955235	
8	Akanbi R. A.	Odejayi C.D.A.	Fin Sec	07030305241	[illegible]

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COMMUNITY/STAKEHOLDER CONSULTATION-
FOR THE PREPARATION OF
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS (ESMPs) FOR SASA RIVER CULVERT
APETE ROAD-OSAJIN

Date: 28th July 2015

NO	NAME	COMMUNITY/ORGANIZATION	DESIGNATION	PHONE	EMAIL
	Remoni Saleh	Landlord	Executive	08039224356	
	Yemisi Lamidi	Women		09028536242	
	Romoke Adekola	Onigbodogi		08072338964	
	Lamidi Sule	Landlord	member	08058615142	
	Suliman Lawal	Landlord	finance	08066419718	
	Isiaka Ajibola	landlord	Baale	08060837132	
	Mrs Agbaje	Landlord	member	08164993335	
	Mrs Ogundipe	landlord	member	08121687832	
	Afolabi Olorunfemi	landlord	member	08071529738	

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NO	NAME	COMMUNITY/ORGANIZATION	DESIGNATION	PHONE	EMAIL
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	ADESMIRAN T. A	—	HOU Ido L/G	08064574673	—
	AMOD F. B	—	HCD / L/G	08033697011	
	Omoha Omeekom	ESMP Consultant	Consultant	08106928600	omeekom@yahoo.com
	Dr Alonge Sunday	Consultant	Consultant	08055068545	alongesk@yahoo.com
	Mrs. Adesina F. E	IUFMP	Environmental specialist	08062322057	[illegible]@yahoo.co.uk
	Mrs Dada A.A.	IUFMP	Social Safeguard	08035025222	dadaayanbola4@yahoo.com

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NO	NAME	COMMUNITY/ORGANIZATION	DESIGNATION	PHONE	EMAIL
	Agbaje Adebayo	landlord	member	08025317272	
	Amusa Musibau	landlord	member	08050990025	
	Eld.- Adabi Yusuf	✓	member	080386[illegible]67	
	Olukunle Oladeji	Landlord	member	0803849[illegible]3	
	Akuloye Eyitayo	Landlord	member	08058112268	
	Pst Okojie, Eric Tope	Landlord	member	08033661088	
	Wole Onaolu	Landlord	Member	08051254541	
	ARE TAIWO	Landlord	member	07062911922	