

MINISTRY OF WORKS AND HOUSING

**GREATER ACCRA RESILIENT AND INTEGRATED DEVELOPMENT PROJECT
IBRD/IDA Credit (P164330)**

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

March 2018

LIST OF ACRONYMS

AfDB	African Development Bank
AMA	Accra Metropolitan Assembly
CBD	Central Business District
DRM	Dispute Resolution Mechanism
DUR	Department of Urban Roads
EAR	Environmental Assessment Regulations
EHSD	Environmental Health and Sanitation Directorate
EPA	Environmental Protection Agency
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GAMA	Greater Accra Metropolitan Area
GARID	Greater Accra Urban Resilience and Integrated Development Project
GoG	Government of Ghana
HSD	Hydrological Services Department
LIT	Lead Implementation Team
MDA	Ministries, Departments and Agencies
MICZD	Ministry of Inner City and Zongo Development
MLGRD	Ministry of Local Government and Rural Development
MMDA	Metropolitan, Municipal and District Assemblies
MSWR	Ministry of Sanitation and Water Resources
MWH	Ministry of Works and Housing
NADMO	National Disaster Management Organization
PCU	Project Coordinating Unit
PIT	Project Implementing Team
PPMED	Project Planning, Monitoring and Evaluation Directorate
RPF	Resettlement Policy Framework
WB	World Bank
WRC	Water Resources Commission

Table of Content

Contents

LIST OF ACRONYMS	i
<i>Executive Summary</i>	v
1 INTRODUCTION	1
1.1 Background.....	1
1.2 Purpose and Objectives of the ESMF	1
1.3 Approach to the ESMF study.....	3
2 DESCRIPTION OF THE PROJECT.....	5
2.1 Description of Project Components	5
2.2 Project oversight and implementation arrangement.....	8
3 ENVIRONMENTAL AND SOCIAL BASELINE OF THE PROJECT AREA.....	10
3.1 Physical description of the Basin	10
3.2 Description of the MMDAs within the Odaw Basin.....	12
3.2.1 Demographic information	13
3.2.2 Distribution and Density.....	13
3.2.3 Population Distribution by Age and Gender	13
3.2.4 Environmental sanitation challenges	14
4 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK	15
4.1 National Legal and Regulatory Framework	15
4.2 Institutional Framework	15
4.3 World Bank Safeguards Policies	20
5 PROJECT ACTIVITIES AND POTENTIAL IMPACTS AND SCREENING PROVISIONS	23
5.1 Key potential activities and interventions of environmental and social significance	24
5.2 Description of some potential impact issues	25
6 GUIDELINES FOR MITIGATION AND ENHANCEMENT MEASURES.....	31
6.1 Mitigation Measures	31
7 ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK	45
7.1 The Environmental and Social Screening Process	45
7.2 Environmental and Social Assessment Procedures to be followed by Projects.....	46

7.3	Technical Specifications and Standards	54
8	INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION	56
8.1	Institutional roles and responsibility for the ESMF Implementation	56
8.2	Implementation Plans	58
8.3	Institutional Strengthening and Capacity Building	59
8.4	Budgetary provisions	62
9	CONSULTATIONS, ESMF DISCLOSURE AND GRIEVANCE MECHANISM	66
9.1	Stakeholder consultations	66
9.2	ESMF Disclosure	66
9.3	Grievance Redress	66
10	CONCLUSION	71
ANNEXES.....		Error! Bookmark not defined.

Table of Figures

Figure 1: Map of GAMA showing project basin.....	2
Figure 2: Odaw river basin showing the MMDAs and some major townships within its catchment ..	11
Figure 3: Institutional responsibilities in the drainage sector (Source: GNWP TA, September 2014) .	16

List of Tables

Table 1: Characteristics of the MMDAs in the Odaw Basin.....	12
Table 2: Summary of World Bank Safeguard Policies	20
Table 3: Project components and proposed sub project activities.....	24
Table 4: Sub-project activities and potential environmental and social impact issues/ concerns	28
Table 5: Environmental and social mitigation measures	32
Table 6: Summary of Environmental Screening Process and Responsibilities.....	53
Table 7: Training modules and proposed participants.....	60
Table 8: Estimated budget to implement ESMF.....	63
Table 9: ESMF and RPF monitoring indicators and responsibilities	64
Table 10: Suggested time frame.....	70

Executive Summary

Introduction

The Government of Ghana (GoG), through the Ministry of Works and Housing, has requested IBRD/IDA credit facility from the World Bank for investment in both structural works and non-structural services towards improving flood and solid waste management in the Greater Accra Metropolitan Area. The works and services will be delivered through a proposed project– The Greater Accra Urban Resilience and Integrated Development (GARID) Project.

The GARID project will follow Multi-phase Programmatic Approach (MPA) -spanning over 10 to 12 years to provide long term solutions to flooding and associated challenges facing Greater Accra region. Phase I of the proposed project focuses on the Odaw river basin. The Odaw River and its tributaries Nima, Onyasia, Dakobi and Ado drain the major urbanized areas of Accra, including among others, Accra Metropolitan Assembly, Ga East, Ga West and Adentan Municipal Assemblies further upstream. This river basin has the highest population density in the country, containing 60% of entire Greater Accra Region population, and is affected by chronic flooding with an estimated 30% of the population at risk living in informal settlements subject to regular flooding.

The multi-programmatic approach (MPA) is focused on adaptive management, allowing the client to structure a long-term, large or complex engagement as a set of linked operations or phases, with intermediate shorter-term objectives that contribute to an overall Program Development Objective. The rationale for the use of MPA is to facilitate the government's goal of making the Greater Accra metropolitan area a clean, green and inclusive space through phased approach which brings in multiple benefits through design and implementation of both structural and non-structural interventions. Generally, the success of activities carried out during the initial phase can be leveraged to engage other development partners.

Objectives of ESMF

The project will have several sub-projects which are yet to be determined and the ESMF therefore defines the procedures for screening and further environmental assessment of these sub-projects as they become known during implementation. The ESMF provides the framework of principles as well as regulatory and institutional arrangements within which to mitigate negative environmental and social impacts of the project.

Based on the risk presented by the proposed project, the following World Bank operational policies have been triggered to guide the preparation, design, and appraisal of the sub- projects, namely: the Environmental Assessment Policy BP/OP 4.01, Natural Habitats 4.04, Physical Cultural Resources BP/OP 4.11, and Involuntary Resettlement Policy BP/OP 4.12.

Approach to ESMF study

In addition to the literature reviews, desk studies and stakeholder consultations, this ESMF study has benefitted greatly from the earlier ESMF report prepared and implemented under the GAMA Sanitation and Water Project. The various key stakeholders have been actively consulted including the relevant government ministries and agencies, Metropolitan and Municipal Assemblies and some affected communities to learn lessons to prepare this report.

Project objectives and components

The main objectives of the Greater Accra Urban Resilience and Integrated Development (GARID) Project are to (1) Strengthen flood and solid waste management; and (2) Improve the living conditions of the most vulnerable communities in the Odaw Basin in the Greater Accra Region.

The proposed project, which will be carried out over a period of five (5) years, is structured into the following four (4) main components:

Component 1: Drainage and flood management improvements within the Odaw Drainage Basin:

Component 2: Improvements in solid waste management capacity including minimizing solid waste in waterways

Component 3: Support to most vulnerable communities within the Odaw Drainage Basin to reduce their vulnerability and improve living conditions

Component 4: Strengthening capacity for planning, coordination, monitoring and evaluation.

Project Implementation Arrangements

Component 1 will be implemented by the Ministry of Works and Housing (MWH), specifically by Hydrological Services Department (HSD). Component 2 will be led by Ministry of Sanitation and Water Resources (MSWR), specifically by the Environmental Health and Sanitation Directorate (EHSD). Component 3 will be led by Ministry of Inner Cities and Zongo Development (MICZD), specifically the Policy Planning, Monitoring and Evaluation Directorate (PPMED). Component 4.1 will be led by the Ministry of Local Government and Rural Development (MLGRD), specifically the Policy Planning, Monitoring and Evaluation Directorate (PPMED).

An overall Project Coordination Unit (PCU) is hosted within the Ministry of Works and Housing. It will be responsible for overall project management; planning, budgeting, implementation, monitoring and evaluation, reporting, fiduciary, safeguards, and grievance redress.

Description of Project Basin

The GARID phase I project focus area is the Odaw Basin. The Odaw River and its tributaries Nima, Onyasias, Dakobi and Ado have a total catchment area of 250km² and drain the major urbanized areas of Accra, including Accra Metropolitan Assembly, Ga East, Ga West and Adentan Municipal Assemblies further upstream. The AMA and Ga East Municipal Assembly alone occupy about 65% of the basin area.

In terms of population and basin activities, the AMA is by far the most dominant Assembly with over 65% of the total population. The high population figure of the city, estimated at about 4.3 million

within the GAMA is both an asset and source of worry to authorities. While the relatively high population serves as a huge and vibrant market for investors and traders, it also poses problem of sanitation and waste management as well as traffic jam especially during the peak hours of the day.

Poor drainage is the major problem, which affects many parts of the urban areas in the respective MMDAs especially in the Metropolis. Natural features such as the underlying geology, soil conditions and localized topographic features create some drainage problems. Development should never have been permitted in most flood prone areas; however, poor physical development control has been unable to prevent urban land encroachment. The majority of the problems are created by the high rate of urbanization (4.2%) of the urban areas and its impact on increase surface water runoff and flooding in low lying areas. The inadequate drainage and poorly designed channels in many parts of the Basin have given rise to serious flood problems. These problems are compounded by choked drains.

Project activities and potential environmental and social impact issues and concerns

Description of Sub project activities under the various project components

Project Component	Sub- Project activities
Component 1: Drainage and flood management improvements within the Odaw Drainage Basin	<ol style="list-style-type: none"> 1. Improvements in urban drainage and flood management in Odaw drainage basin through <ol style="list-style-type: none"> a. Short-term relief civil works, construction of sand traps, dredging, de-silting, rehabilitation of drainage systems, and b. Long-term complete improvement of drainage systems (i.e. widening of Odaw river mouth, rehabilitation of inoperable pump stations; lining of major drainage channels; lowering of flood plain and construction of selected secondary channels) in the Accra Metropolitan Area. c. Construction of retention ponds and wadis. 2. Development of green spaces and parks to serve as flood water retention areas and as buffer zones; 3. Improvements in flood response systems through better infrastructure for flood forecasting and warning systems.
Component 2: Improvements in solid waste management capacity including minimizing solid waste in waterways.	<ol style="list-style-type: none"> 1. Improvements in community-level solid waste management through: <ol style="list-style-type: none"> a. Provision of sanitation equipment and technical services for solid waste collection; b. Community mobilization and awareness raising; and c. The application of a results-based incentive approach to enhance waste management and good sanitation practices; 2. Improvement in solid waste management capacity in Greater Accra by <ol style="list-style-type: none"> a. Identifying, assessing and improving waste recycling, treatment and disposal facilities. 3. Construction of transfer stations for solid waste and capping of dump-sites.

Component 3: Support to most vulnerable communities within the Odaw Drainage Basin to reduce their vulnerability and improve living conditions	<ol style="list-style-type: none"> 1. Upgrading of basic infrastructure and services identified through geospatial and social vulnerability diagnostics. 2. Improve city integration by upgrading access roads between inner cities and CBDs 3. Participatory resettlement involving low-income informal settlements aimed at providing support for safe housing.
Component 4: Strengthening capacity for planning, coordination, monitoring and evaluation	Activities concerning capacity building and extension and communication are deemed to be 'soft projects' which will not be associated with any physical infrastructural development. They are therefore not considered in subsequent analyses in later sections of this report

Sub-project activities and potential environmental and social impact issues/concerns

Sub- Project activities/interventions	Potential Impact Issues/Concerns	
	Environmental	Social
1. Dredging of drainage basin	<u>Water resources and pollution</u> ✓ Stirring up of pollutants and their transport downstream	<u>Land/wayleave acquisition and compensation issues</u> ✓ Clear understanding of land use and occupancy
2. De-silting of drainage channels and lagoon	✓ Alterations in local natural water cycles/ hydrology	✓ Conflicts in land claims
3. Rehabilitation/ construction/ lining of drains	✓ Disposal of dredged material ✓ Disposal of treated wastewater	✓ Land acquisition and compensation issues ✓ Discrimination, lack of grievance mechanisms for land owners and users
4. Widening of river mouth	<u>Vegetation losses, soil disturbance and Erosion</u>	✓ Temporary and permanent properties affected by project
5. Rehabilitation of pump stations	✓ Site clearing ✓ Increased soil erosion due to disturbances	✓ Political influences
6. Creation of parks to retain flood water	<u>Air quality</u> ✓ Site clearing and excavation works	<u>Maintaining Livelihoods</u> ✓ Petty traders and various shops and other economic activities (garages, 'chop' bars etc) operating within reservations
7. Solid waste recycling/ treatment/ disposal facilities	✓ Transport of construction materials and waste ✓ Cutting of roads	✓ Demand for alternative locations to do their business
8. Upgrading of roads	✓ Exhaust emissions for equipment including heavy duty trucks	✓ Adequate, documented and transparent compensation for affected persons in order to vacate unauthorised sections of

Sub- Project activities/interventions	Potential Impact Issues/Concerns	
	Environmental	Social
9. Resettlement of slums	<p><u>Vibration and Noise</u></p> <ul style="list-style-type: none"> ✓ Site clearing and excavation works ✓ Concrete works ✓ Cutting of roads <p><u>Visual intrusion</u></p> <ul style="list-style-type: none"> ✓ Construction sites <p><u>Disruption of Utility services and damage to public infrastructure</u></p> <ul style="list-style-type: none"> ✓ Cutting of roads ✓ Drain excavation works <p><u>Generation and disposal of solid waste</u></p> <ul style="list-style-type: none"> ✓ Construction works ✓ Dredged materials <p><u>Public safety and traffic issues</u></p> <ul style="list-style-type: none"> ✓ Construction works <p><u>Sanitation and public health impacts</u></p> <ul style="list-style-type: none"> ✓ Construction works 	<p>project areas</p> <p><u>Security and Safety</u></p> <ul style="list-style-type: none"> ✓ Safety and security of community informants/ whistle blowers ✓ Safety and security of workers ✓ Delayed court processes and low fines which do not create proper structures to punish/deter violations ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process <p><u>Occupational health and Safety</u></p> <ul style="list-style-type: none"> ✓ Lack of awareness creation programs on health and safety ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process <p><u>Cultural Heritage</u></p> <ul style="list-style-type: none"> ✓ Access to local gods (rivers) ✓ Preservation of local cultural identity and heritage ✓ Compensation issues ✓ Community pride and support ✓ Community relinquishing/ sharing heritage for greater good <p><u>Resource Access and Possible Restriction</u></p> <ul style="list-style-type: none"> ✓ Rights to question and have individual considerations addressed ✓ Possible alternative options ✓ Established grievance redress options

Mitigation Guidelines

These mitigation guidelines are given to address the significant impacts. The responsibilities for implementing these measures are described later in the report.

Environmental and social mitigation measures

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
Water Resources and pollution	<ul style="list-style-type: none"> ✓ Works not to be executed under aggressive weather conditions such as rains or stormy conditions. ✓ No solid waste, fuels, or oils to be discharged into any section of the drain or waterway. ✓ Construction to be done in sections to minimize impacts and exposure of soil. ✓ Excavated materials and silt, which cannot be used will be disposed of at appropriate sites as per the Waste Management Plan prepared by contractor and approved by MMDAs. The rampant practice of heaping de-silted materials by banks which are later washed back into drains after rain events will not be tolerated ✓ Temporary sediment barriers to be installed on slopes to prevent silt from entering water courses. ✓ Maintenance, fuelling and cleaning of vehicles and equipment to take place at off-site workshop with adequate leakage prevention measures
Air quality	<ul style="list-style-type: none"> ✓ Soil/sand and cement loads in transit to be well covered to reduce dust levels rising above acceptable levels. ✓ Stockpiles of exposed soil and unpaved access roads to be sprinkled with water to regulate dust levels. ✓ Use of good quality fuel and lubricants in vehicles, equipment and machinery. ✓ Ensure that heaped sand delivered for construction works is covered with tarpaulin to prevent wind and water transport of soil particles ✓ Engines of vehicles, machinery, and other equipment to be switched off when not in use. ✓ Regular scheduled maintenance and servicing to be carried out on all vehicles and equipment to minimize exhaust emissions. ✓ Construction and civil works to be phased out or controlled to reduce emissions from equipment and machinery in use.
Vibration and Noise	<ul style="list-style-type: none"> ✓ Excavation and construction activities to be carried out during daylight hours. ✓ Concrete mixer and other construction machines and equipment to be located away from sensitive environmental receptors. ✓ Construction equipment and machinery to be regularly maintained and serviced to reduce noise generation when in use. ✓ Engines of vehicles, equipment and machinery to be turned off when not in use. ✓ Earthworks and other construction activities to be phased out or controlled to reduce noise generation during

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	<p>construction.</p> <ul style="list-style-type: none"> ✓ Neighboring residents and commercial activities to be notified in advance of the project before contractor mobilizes to site
Visual intrusion	<ul style="list-style-type: none"> ✓ Public to be well informed of upcoming project using appropriate signages and display boards prior to contractor mobilizing to sites; ✓ Construction activities to be done in sections to reduce impacts of change and visual intrusions to the general public. ✓ The construction sites to be hoarded off from public view. ✓ Good housekeeping measures, such as regular cleaning, to be maintained at the construction site. ✓ Ensure an acceptable post-construction site as per provisions in the contract.
Land/ wayleaves acquisition and compensation issues	<ul style="list-style-type: none"> ✓ Consult affected property owners/users and seek their consent prior to commencement of construction works. ✓ Allow affected person to harvest any matured crops (e.g. plantains) before destroying or removing the crop. ✓ Ensure fair and adequate compensation is paid to all affected persons prior to commencement of construction activities as per the provisions of the RPF
Disruption of utility services and damage to public infrastructure	<ul style="list-style-type: none"> ✓ Collaborate with the MMDA Works and Urban Roads departments to ensure that the highest standards are implemented for the road cutting and reinstatement. ✓ Consult with utility providers to confirm location of their respective assets (pipelines, cables) within the project corridor to prevent blind encroachment ✓ Collaborate with the engineers of the utility providers (GWCL/ ECG/Telecommunication providers) to ensure the most appropriate measures are taken to safeguard the integrity of the pipelines/cables. Measures to be implemented include: <ul style="list-style-type: none"> ○ Avoiding the encroachment on the pipelines or cables ○ Inform the utility providers and the MMDAs of any damaged pipeline or cable ○ Promptly repair any damaged pipelines or cables

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	<ul style="list-style-type: none"> ✓ Relocation of pipelines or cables to safe places
Generation and disposal of solid wastes	<p>Apply the principles of Reduce, Recycle, Reuse and Recover for waste management through the following actions:</p> <ul style="list-style-type: none"> ✓ Excavated earth materials will, as much as possible, be re-used for back filling purposes to reduce waste ✓ Excavated solid waste from the drain channel that are unsuitable for backfilling will be collected onsite, allowed to drain and collected for disposal at sites approved sites in collaboration by the MMDAs. ✓ Ensure that the required amounts of construction materials are delivered to site to reduce the possibility of the occurrence of excess material ✓ Provide bins on site for temporary storage of garbage such as lubricant containers, drinking water sachets and carrier bags/packaging materials. ✓ Ensure judicious use of construction materials such as pipes, laterites, sand, etc. to reduce waste ✓ All metal scrap waste will be disposed of at sites approved by the MMDAs or sold to approved third party agents for use by metal companies. ✓ Contractor to work according to a prepared and agreed Solid Waste Management Plan.
Maintaining Livelihoods	<ul style="list-style-type: none"> ✓ Ensure appropriate compensations are paid to PAPs as defined in the RPF; ✓ Employment and other opportunities to be given to local communities as much as possible.
Public Safety and security	<ul style="list-style-type: none"> ✓ Works on exposed trenches and earth materials will, as much as possible, be completed before new earth dug and trenches are created. ✓ Work areas to be hoarded off adequately to avoid inquisitive trespassers especially children ✓ Warning signs to be posted around work areas to discourage trespassers ✓ Contractors to maintain adequate security at construction sites to avoid pilfering or vandalising of property ✓ Visibility to be ensured in the night time by providing adequate lighting
Traffic management	<ul style="list-style-type: none"> ✓ Contractors to provide traffic management plans duly approved by relevant authorities ✓ Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians ✓ Works to be completed on time to minimize inconvenience to motorists and pedestrians
Occupational health and	<ul style="list-style-type: none"> ✓ Engage experienced artisans for construction works. ✓ All workers should be given proper induction/orientation on safety. ✓ The contractors will have a Health & Safety Policy and procedures to guide the construction activities.

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
safety	<ul style="list-style-type: none"> ✓ Regularly service all equipment and machinery to ensure they are in good working condition. ✓ Ensure there are first aid kits on site and a trained person to administer first aid. ✓ Provide and enforce the use of appropriate personal protective equipment (PPE) such as safety boots, reflective jackets, hard hats, hand gloves, earplugs, nose masks, etc. ✓ Proof of competence for all equipment/machine operators will be required and established through inspection of valid drivers or operator's license or documents. ✓ Comply with all site rules and regulations. ✓ Apply sanctions where safety procedures are not adhered to. ✓ Site meetings should create awareness on OHS.
Cultural Heritage	<ul style="list-style-type: none"> ✓ Traditional authority responsible for sanctity of river gods properly identified and consulted ✓ Necessary cultural rites agreed with community and performed prior to access to water bodies
Climate and Disaster Risk Management	<ul style="list-style-type: none"> ✓ The structural measures are not expected to increase disaster and climate risk, particularly flooding

Institutional responsibility

The Ministry of Works and Housing (MWH) will serve as the lead government agency for this project. A project coordination unit (secretariat) will manage the project and ensure linkages and coordination with all interventions under the other ministries.

The focal point ministry will work with the Ministry of Sanitation and Water Resources, Ministry of Inner City and Zongo Development and also the Ministry of Local Government and Rural Development, as well as other relevant agencies to ensure smooth implementation and the documentation sharing of lessons learnt.

The main responsibility for implementing the ESMF and the RPF rests with the Safeguards specialists to be appointed in the PCU and will be supported by, as needed, environmental and social experts who will be recruited by the project. The Project Implementation Teams (PITs) to be formed at the various sector ministries will also have their respective safeguards focal persons who will oversee the implementation of all actions to mitigate adverse environmental and social impacts within the respective projects at the MMDAs. They will in turn, supervise the designated safeguard focal persons at the MMDAs Lead Implementation Teams to ensure sound management practices at the community level.

Environmental and Social Screening Process

Safeguard persons will be identified at all levels of project implementation including (1) the Project Coordinating Unit at the MWH, (2) Project Implementation Teams at the MDAs, and (3) Lead Implementation Teams at the MMDAs.

MMDA Lead Implementation Teams (LITs) must foremost carry out the preliminary environmental and social screening of proposed projects by using the checklist suggested in **Annex 3**. If significant impacts are anticipated then the EPA must be consulted and the Ghana Environmental Assessment (EA) procedures duly followed.

When there are minimal or no impacts (as determined using the checklist), MMDA LITs must consult internally with their Project Implementation Team (PIT) safeguard persons at the respective Ministry for confirmation. Once an agreement is reached, the LIT safeguard person may proceed with the minimum regular reporting requirements which will be discussed and agreed with the PIT safeguard person.

The formal environmental approval and permitting processes will be guided by the World Bank safeguard policy OP4.01 which provides guidance on the environmental assessment procedures for WB funded projects. The Ghana EIA procedures (EPA, 1994) have also established a process to screen and evaluate all developments, undertakings, projects and programmes which have the potential to give rise to significant environmental impacts. The two processes are largely similar and the Ghanaian procedures are therefore described in the report and will mostly be statutorily followed by all projects to obtain environmental permits.

Those projects requiring EPA clearance will only commence when an environmental permit has been procured from the EPA. The Agency has provided the list of projects for which ESIA is mandatory. These have been given in the **Annex 4** and are consistent with the World Bank categorization of projects.

Summary of Environmental Screening Process and Responsibilities

No.	Stage	Institutional responsibility	Implementation responsibility
1.	Environmental and Social screening of proposed project interventions to assist in project formulation using checklist	MDA MMDAs	PITs safeguard person/ MMDA LIT safeguard focal point
2.	Statutory Environmental Registration of Project	MMDA, MDA	MMDA LIT
2.	Determination of appropriate environmental assessment level/ category	EPA	-
3.	Implementation of environmental assessment	MMDA	MMDA LIT safeguard focal point
3.1	If ESIA is necessary		
3.1a	Preparation of terms of reference	MMDA MDA	PITs safeguard person/ MMDA LIT safeguard focal point
3.1b	Validation of ESIA/EMP TOR (Scoping)	EPA	-
3.1c	Selection of Consultant	MMDA MDA	MMDA LIT safeguard and procurement/ PIT safeguard and procurement
3.1d	Realization of the EIA, Public Consultation Integration of environmental and social management plan issues in the tendering and project implementation,	MMDA/ Consultancy firm	PIT safeguard specialist/ MMDA LIT Safeguard Officer / Procurement Officer
4	Review and Approval	EPA	-
4.1	EIA Approval (B1)	EPA	-
4.2	Approval simple measures (B2&c)	MDA	PIT Safeguard person
5.	Public Consultation and disclosure	MDA/MMDA/EPA	MMDA LIT safeguard person/Consultant
6.	Surveillance and monitoring	PCU MDA EPA, MMDA	PIT safeguard/ MMDA LITsafeguard person
7	Development of monitoring indicators	MDA	MMDA Safeguard/ PIT

No.	Stage	Institutional responsibility	Implementation responsibility
		MMDA	Safeguard specialist

Capacity building and Training and Budget

The capacity building will include training workshops and production of guidance reports and tools. The following training programmes are recommended:

Training modules and proposed participants

Module No	Training module content	Participants
1.	<ul style="list-style-type: none"> World Bank safeguards requirements for the GARID project, roles and responsibilities World Bank Safeguard policies of OP 4.12 and OP 4.01; Ghana EPA Environmental Assessment Regulations ESMF/ RPF 	PCU safeguard specialists, MDAs safeguard persons, MMDA safeguard focal persons
2.	<ul style="list-style-type: none"> Screening Checklist, ToR for MDAs safeguard persons ToR for MMDAs Safeguard focal persons Completion of EA Registration Forms 	MDAs safeguard persons, MMDA safeguard focal persons
3.	<ul style="list-style-type: none"> Preparation of Terms of Reference for ESIA's and RAPs 	MDAs safeguard persons, MMDA safeguard focal persons
4.	<ul style="list-style-type: none"> Environmental and Social Management Plans Grievance redress registration and resolution forms 	MMDA safeguard focal persons, Contractors, Supervising engineers, Sub metro and Zonal Council directors, Community safeguard champions

The main recipients for training will be the MDA and MMDA safeguard focal persons. We expect the training to filter down to community level through the Sub metro and Zonal Council officers. These latter officers will have the primary responsibility of involving the communities in the implementation of the interventions and will therefore require some specific training in safeguards to be effective. Their focus will be on the Module 4 where they will be exposed to environmental and social management plans prepared to guide the safe execution of the sub projects. The communities will be encouraged to be adequately represented at these training sessions as well to eventually raise community safeguard champions.

The awareness creation, capacity improvement and training workshops as well as some logistic support expenses for key stakeholders involved in the implementation of proposed interventions is estimated at **US\$ 512,500** over the 5- year project life as explained in the **Table 9**.

Monitoring and Evaluation

The monitoring issues at the ESMF level include providing indication of the dissemination of both ESMF and RPF documents as well as capacity building and training activities. At the sub- project activity level, this will encompass instituting monitoring actions to, for example, confirm that projects have been properly screened, ESIA reports prepared, Permits have been acquired and ESMPs have prepared and are being implemented.

Disclosure

MDAs, MMDAs and EPA will make copies of the ESMF available in selected public places as required by law for information and comments. Public notice in the media will serve that purpose as well as disclosure at the World Bank website.

The notification will be done through newspaper advertisements and provide:

- a brief description of the Project;
- a list of venues where the ESMF report is on display and available for viewing;
- duration of the display period; and
- contact information for comments.

The EPA will assist to select display venues upon consultation with MWH/ PCU.

Proposed grievance management and redress mechanism

Court cases are known to be cumbersome and take a long time before settlements are reached and usually one party is still not satisfied. It is therefore proposed to adopt a simple procedure for affected persons to be able to follow easily, and which will provide aggrieved people with an avenue for amicable settlement without necessarily opening a Court case.

As a first option, the ESMF proposes amicable settlement/ mediation. During the stakeholder engagement process, various community leaders and traditional authority described their current processes which are firmly established and effective. These will as much as possible be used and the project will revert to outside processes only in cases when these have failed. In compensation and resettlement operations, it often appears that many grievances derive from misunderstandings of project policy and procedures, land/asset valuations, property demarcations and boundaries among other which can usually be solved through adequate mediation using customary rules and some mediation. This is why a first instance of dispute handling will be set up with the aim of settling disputes amicably. The table below presents recommended timeframes for addressing grievance or disputes related to resettlement and compensation. It is envisaged that resettlement/ compensation disputes could be resolved at the community or MMDA levels. Otherwise, as a final resort, the complainant is free to use the judiciary process.

Suggested time frame

Step	Process	Time frame
------	---------	------------

Step	Process	Time frame
1	Receive and register grievance	within 5 Days
2	Acknowledge, Assess grievance and assign responsibility	within 14 Days
3	Development of response	within 14 Days
4	Implementation of response if agreement is reached	within 1 Month
5	Close grievance	within 7 Days
6	Initiate grievance review process if no agreement is reached at the first instance	within 1 Month
7	Implement review recommendation and close grievance	within 2 Months
8	Grievance taken to court by complainant	-

Conclusion

The project seeks to address urgent flooding challenges in the Odaw basin which are linked to the drainage, and solid waste management faced by many communities in the residing MMDAs. The structural works may impose significant environmental and social impacts which have been identified in this report. Some mitigation measures have been suggested to address undesired situations. The responsibility for managing these mitigating measures have been described and the ultimate responsibility will rest on the MWH which is the coordinating ministry and will host the Project Coordinating Unit (PCU). The capacity to implement safeguard actions may be lacking and a training programme has been suggested over the project life cycle. Key safeguard persons will come from the respective MDAs and MMDAs. It is suggested that in order for the community to appreciate and benefit greatly from these safeguard actions, the respective sub metro and zonal council units who are most in contact with the communities should be involved in the process and given some training too.

1 INTRODUCTION

1.1 Background

The Government of Ghana (GoG), through the Ministry of Works and Housing, has requested IBRD/IDA credit facility from the World Bank for investment in both structural works and non-structural services towards improving flood and solid waste management in the Greater Accra Metropolitan Area. The works and services will be delivered through a proposed project– The Greater Accra Urban Resilience and Integrated Development (GARID) Project.

The proposed interventions will be complementary to and integrated with existing Government, Bank and Development Partners’ operations and technical assistance in Greater Accra (including the GAMA Water and Sanitation Project, and the GAMA (spatial development) master plan being supported by the AfDB, investments identified in Ghana’s national climate program (INDC), UNCDF’s Performance Based Climate Resilience Grants, and other similar projects). The interventions are also based on a number of completed and ongoing studies, primarily Ghana Urbanization Review, Metropolitan Planning Technical Assistance, City Strength Diagnostics, Integrated Urban Environmental Sanitation Strategy and Master Plan and Accra Climate Strategy.

The GARID project is intended to take an area- based approach, focusing on the Odaw river basin. The Odaw River and its tributaries Nima, Onyasia, Dakobi and Ado drain the major urbanized areas of Accra, including Accra Metropolitan Assembly, Ga East, Ga West and Adentan Municipal Assemblies further upstream, **Figure 1**. This river basin has the highest population density, hosting 60% of entire Greater Accra Region population, and is affected by chronic flooding with an estimated 30% of the population at risk living in informal settlements subject to regular flooding.

1.2 Purpose and Objectives of the ESMF

The project will have several sub-projects which are yet to be determined and the ESMF will therefore define the procedures for screening and further environmental assessment of these sub-projects as they become known during implementation. The ESMF will provide the framework, including principles as well as regulatory and institutional arrangements with which to assess and mitigate negative environmental and social impacts.

Based on the risk presented by the proposed project, the following World Bank operational policies have been triggered to guide the preparation, design, and appraisal of the sub- projects, namely: the Environmental Assessment Policy BP/OP 4.01, Natural Habitats 4.04, Physical Cultural Resources BP/OP 4.11, and Involuntary Resettlement Policy BP/OP 4.12.

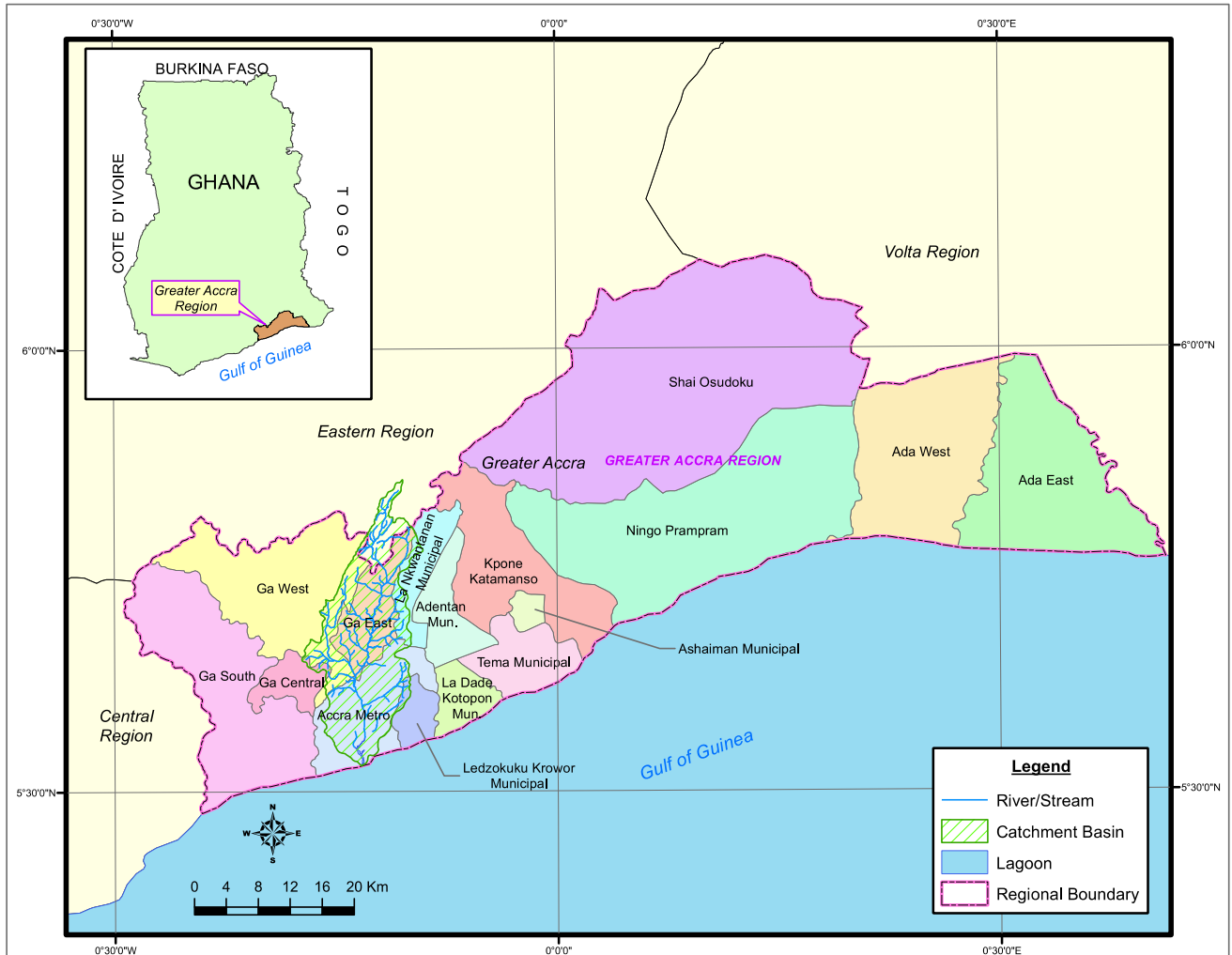


Figure 1: Map of GAMA showing project basin

These policies require adequate assessment of the environmental and social impacts of the project prior to appraisal. In addition to these policies, the Environmental Assessment Regulation, 1999 LI 1652 of Ghana requires that projects that present foreseeable negative impacts to the natural and human environment must be preceded by adequate assessment and analysis of the impacts and consultation with stakeholders.

In compliance with these requirements, the Environmental and Social Management Framework (ESMF) will:

- (i) Establish the legal framework, procedures, and methods for the environmental and social planning, review, approval and implementation of investments to be financed under the project;

- (ii) Identify roles and responsibilities, including reporting procedures and monitoring and evaluation;
- (iii) Identify capacity/or training needs for the different stakeholders to ensure implementation of the provisions of the ESMF and;
- (iv) Determine cost implications and funding requirements and resources needed to ensure effective implementation of the ESMF.

1.3 Approach to the ESMF study

This ESMF has benefitted from the earlier ESMF report prepared and implemented under the GAMA Sanitation and Water Programme. The various key stakeholders have been actively engaged including the relevant government ministries and agencies, Metropolitan and Municipal Assemblies and some affected communities to learn lessons to prepare this report.

Collection of baseline information

Baseline information was collected and analyzed regarding:

- Key components of the Project
- Relevant existing environmental and social policies, laws and regulations related to the environmental sanitation and flooding issues in the project basin;
- Existing conditions of the main environmental and social components,
- Key environmental and social issues associated with the proposal,
- Key stakeholders in relation to the identified issues,
- Requirements for the detailed analysis of potential effects:
 - Technical studies required,
 - Public participation and stakeholder involvement,
 - Available information resources, including other ESIA studies available as reference.

Stakeholder Consultation

Key stakeholders were defined as those to be directly affected by the proposed interventions, i.e. those that may be expected to either benefit or lose from the proposed alternative/project, particularly among the poor and the marginalized. Those directly involved included persons and institutions with technical expertise and public interest in the Bank-supported programs as well as with linkages to the poor and marginalized.

The ultimate beneficiaries of this project are the communities in the Odaw Basin who reside and/ or earn their living and must be protected from harm or undue consequences of the project. Some were therefore targeted for consultation. The Ministries, Departments and Agencies responsible for environmental sanitation will also benefit from improved policies, capacity development programmes and outreach and communication programmes and it was important to solicit their views. Other stakeholders including the private sector and civil society, will also benefit through the improved resource management practices in the key MMDAs and sectors of focus. The key stakeholders interacted with included:

- Public officials with influence on the project (Ministries of Works and Housing, Sanitation and Water Resources, Local Government and Rural Development, Zongo Community etc)
- Local administrative assemblies (Accra Metropolitan Assembly, Ga East Municipal Assembly etc and their sub metros and zonal councils)
- Basin communities and their leadership (Traditional authorities, Assemblypersons, Community Chairpersons etc)

Analysis of data and Content of report

The data gathered was analyzed to produce the ESMF document which comprise the following content:

- Introduction
- Description of the Project and Related Activities
- Policy, Regulatory and Institutional Framework
- Ghana Baseline Description
- Project Activities, Potential Impacts and Issues, and Screening Provisions
- Guidelines for Mitigation and Enhancement Measures
- Environmental and Social Management Plan
- Institutional Capacity for ESMF Implementation
- Monitoring and Evaluation
- Consultations, ESMF Disclosure and Grievance Mechanism
- Conclusion
- References/ Bibliography

2 DESCRIPTION OF THE PROJECT

The main objectives of the Greater Accra Urban Resilience and Integrated Development (GARID) Project are to:

- Strengthen flood and solid waste management; and
- Improve the living conditions of the most vulnerable communities in the Odaw Basin in the Greater Accra Region.

2.1 Description of Project Components

The proposed project, which will be carried out over a period of five (5) years, is structured into the following four (4) main components:

Component 1: Drainage and flood management improvements within the Odaw Drainage Basin:

This component includes structural improvements of drainage systems, and flood water management through upstream water conservation, development of green spaces and flood retention areas in Odaw drainage basin, as well as improving flood warning and response capacity in Greater Accra Region. Specific activities to be implemented under this component include; (i) Improvements in urban drainage and flood management in Odaw drainage basin through short-term relief civil works (i.e. Dredging, de-silting, rehabilitation of drainage systems), and long-term complete improvement of drainage systems (i.e. widening of Odaw river mouth, rehabilitation of inoperable pump stations; lining of major drainage channels; and construction of selected secondary channels) in the Accra Metropolitan Area. Other activities include (i) the development of green spaces and parks to serve as flood water retention areas; (ii) improvements in flood response systems through better infrastructure for flood forecasting and warning systems.

Component 2: Improvements in solid waste management capacity including minimizing solid waste in waterways. Activities under this component are community-focused targeting areas that have been selected for investment in drainage and sanitation. Sub-activities under this component include; (i) improving Community-level solid waste management through provision of sanitation equipment and technical services for solid waste collection; community mobilization and awareness raising; and the application of a results-based incentive approach to enhance waste management and good sanitation practices; and (ii) improving solid waste management capacity in Greater Accra by identifying, assessing and improving waste recycling, treatment and disposal facilities.

Component 3: Support to most vulnerable communities within the Odaw Drainage Basin to reduce their vulnerability and improve living conditions. This component will identify flood-prone informal settlements and 'Zongos' to benefit from participatory community upgrading. Sub-activities under this component include; (i) upgrading of basic infrastructure and services that will be

identified through geospatial and social vulnerability diagnostics. The activities will also improve city integration by upgrading access roads between inner cities and CBDs (ii) Participatory resettlement involving low income informal settlements aimed at providing support for safe housing. A flood modeling exercise is underway and expected to inform areas that may be targeted for participatory resettlement.

Component 4: Strengthening capacity for planning, coordination, monitoring and evaluation.

This will include support for creation of Joint Development Planning Areas (JDPA). It will support the possible future Greater Accra Metropolitan Sanitation Authority, with initial focus on planning, coordinating, and monitoring flood risk management, sanitation (liquid and solid waste management) sectors. This could serve as models for planning and management of other services that have network and have spill-over effects across MMDAs. Concretely, it will finance (i) urban planning and management aiming to integrate multi-sectoral analysis and flood risks into metropolitan, and local urban planning and management tools; (ii) data collection (geo-spatial), and asset management information system at metropolitan level, and measure to improve vertical and horizontal coordination (such as through performance contracts).

It will finance the management activities associated with project implementation, including establishing and implementing a comprehensive monitoring and evaluation (M&E) system and training of the implementing agencies in environmental and social management. The project would furthermore provide support to institutionally strengthen some of the agencies and departments to better address and manage operation and maintenance of flood and waste management. This component will also provide funds to undertake feasibility studies and prepare detailed designs for implementation and other studies identified and agreed during implementation.

2.2 Project Implementation arrangement - MPA approach.

The government and the World Bank have agreed to adopt a multi-programmatic approach (MPA) in implementing the project. This approach is focused on adaptive management, allowing the client to structure a long-term, large or complex engagement as a set of linked operations or phases, with intermediate shorter-term objectives that contribute to an overall Program Development Objective. The rationale for the use of MPA is to facilitate the government's goal of making the Greater Accra metropolitan area a clean, green and inclusive space through phased approach which brings in multiple benefits through design and implementation of both structural and non-structural interventions. Generally, the success of activities carried out during the initial phase can be leverage to engage other development partners.

Given the complexity of the project, it is proposed that some activities will proceed during the first two years after project effectiveness. Some of the first-phased activities will set the platform for extending investment in complementary infrastructural works. The table below outlines the planned physical works over the next few years of the project life.

Project Component/Activity	Implementation Timeline after Project Effectiveness	Environment and Social Issues /documents needed
Component 1: Drainage and Flood Management		
1. Dredging for Deferred Maintenance and Urgent Repair Works	Second year implementation	Safe disposal of dredged material
2. Development of 7 Retention Ponds	Second year implementation	Land acquisition and resettlement
3. Flood warning and response system	First year implementation	None/minimal
4. Piloting of Wadis (flood resilient drains) and flood zoning	First year implementation	None/minimal
5. Support for O&M	First year implementation	None/minimal
Component 2: Solid Waste Management		
6. Construction of two Transfer Stations	First year implementation	ESIA needed, RAP not needed due to green field sites
7. Capping of two dumpsites	First year implementation	ESIA needed, Livelihood support plan for waste pickers
8. Community activities	First year implementation	None/minimal
Component 3: Community Upgrading and participatory resettlement		
9. Community upgrading in potential 4 communities and support for resettlement /business disruption in project affected areas	Second year implementation	Land acquisition and resettlement potentially required – RAP, ESIA once sites are known
Component 4: Project Management and Coordination		
10. Support for joint planning, coordination, spatial data mgmt.;	First year; training, studies, etc.	None/minimal

project management		
--------------------	--	--

To address project impacts, the government is presenting this Environment and Social Management framework which provides the broader structure, principles and procedures for screening subprojects based on Ghana's laws and regulations related to environmental assessment. As engineering designs and specific sites are selected for subprojects, they will be screened, assessed, and impact mitigation measures will be implemented. The screening will also inform planning and implementation of resettlement action plans and/or livelihood restoration plans, where appropriate.

2.3 Project oversight and implementation arrangement

Project implementation will be mainstreamed within the existing government institutional structures. Capacity of implementation units will be augmented through secondments from other MDAs and MMDAs and hiring of consultants' subject to capacity assessment.

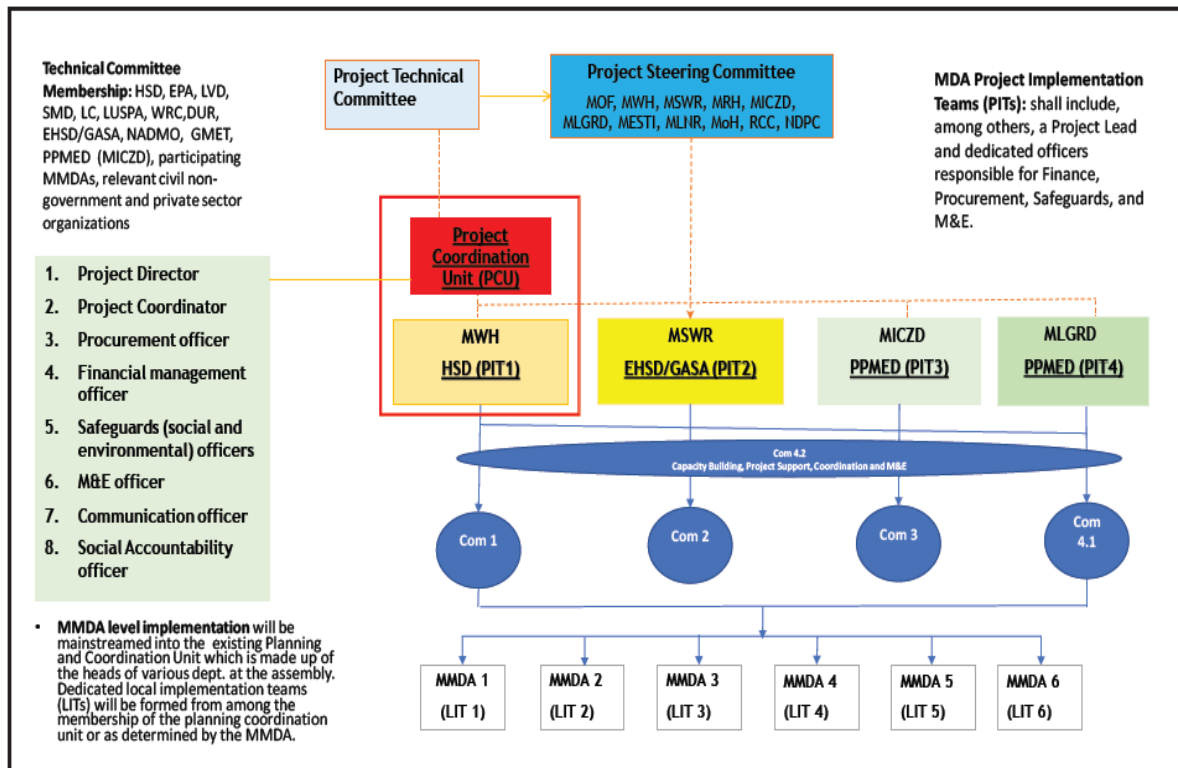
An overall Project Coordination Unit (PCU) would be hosted within the Ministry of Works and Housing. It will be responsible for overall management of implementation, monitoring and evaluation, reporting, fiduciary, safeguards, and grievance redress. The PCU will have the following staff: a Project Director, a Project Coordinator, and officers responsible for Finance, Procurement, Social Safeguards, Environmental Safeguards, Public Relations/Communication, Monitoring and Evaluation, and Social Accountability. Other supporting staff, as needed, may also be appointed.

Component 1 will be implemented by the Ministry of Works and Housing (MWH), specifically by Hydrological Services Department (HSD). Component 2 will be led by Ministry of Sanitation and Water Resources (MSWR), specifically by the Environmental Health and Sanitation Directorate (EHSD). Component 3 will be led by Ministry of Inner Cities and Zongo Development (MICZD), specifically the Project, Planning, Monitoring and Evaluation Directorate (PPMED). Component 4.1 will be led by the Ministry of Local Government and Rural Development (MLGRD), specifically the Project, Planning, Monitoring and Evaluation Directorate (PPMED).

A project implementation unit will be mainstreamed in each of these four (4) lead implementing MDAs to lead implementation of the respective components. Each lead implementing agency will constitute dedicated Project Implementation Teams (PITs) to manage and facilitate implementation of the component it is leading. These will work closely with the PCU and report to same. At a minimum, PITs will comprise a Project Lead and dedicated officers responsible for Finance, Procurement, Safeguards, and M&E.

MMDA level implementation will be facilitated by and mainstreamed into the existing planning coordination units. Dedicated local implementation teams (LITs) will be formed from among the membership of the planning coordination unit or as determined by the MMDA.

A schematic of the implementation arrangements is shown below.



3 ENVIRONMENTAL AND SOCIAL BASELINE OF THE PROJECT AREA

3.1 Physical description of the Basin

The project focus area is the Odaw Basin. The Odaw River and its tributaries Nima, Onyasias, Dakobi and Ado have a total catchment area of 250km² and drain the major urbanized areas of Accra, including Accra Metropolitan Assembly, Ga East, Ga West and Adentan Municipal Assemblies further upstream. The AMA and Ga East Municipal Assembly alone occupy about 65% of the basin area. **Figure 2** shows the Odaw river basin with the demarcation of the respective Assemblies.

The basin lies in the coastal Savannah zone. There are two rainy seasons. The average annual rainfall is about 730mm, which falls primarily during the two rainy seasons. The first begins in May and ends in mid-July. The second season begins in mid-August and ends in October. Due to climate change, rain usually falls in high intensity short duration storms and gives rise to local flooding where drainage channels are obstructed. The intensity of rainfall has been observed to increase over the years as a result of climate change. This coupled with increased runoff due to rapid urbanization has compounded the already precarious flooding situation within the basin.

There is very little variation in temperature throughout the year. The mean monthly temperature ranges from 24.7°C in August (the coolest) to 28°C in March (the hottest) with annual average of 26.8°C. As the area is close to the equator, the daylight hours are practically uniform throughout the year. Relative humidity is generally high varying from 65% in the mid-afternoon to 95% at night. The predominant wind direction in Accra is from the WSW to NNE. Wind speeds normally range between 8 to 16 km/hr. High wind gusts occur with thunderstorm activity, which pass in squall along the coast. The maximum wind speed recorded in Accra is 107.4 km/hr (58 knots). Strong winds associated with thunderstorm activity often cause damage to property and mostly removing roofing materials.

The geology of the basin consists of Precambrian Dahomeyan Schists, Granodiorites, Granites Gneiss and Amphibolites to late Precambrian Togo Series comprising mainly Quartzite, Phyllites, Phylitones and Quartz Breccias. Other formations found are the Palaeozoic Accraian Sediments - Sandstone, Shales and Interbedded Sandstone-Shale with Gypsum Lenses.

There are three broad vegetation zones in the basin area, which comprise shrub land, grassland and coastal lands. Only the shrub land occurs more commonly in the western outskirts and in the north towards the Aburi Hills. It consists of dense clusters of small trees and shrubs, which grow, to an average height of 5m. The grasses are mixture of species found in the undergrowth of forests. They are short, and rarely grow beyond 1m. Ground herbs are found on the edge of the shrub. They include species, which normally flourish after fire.

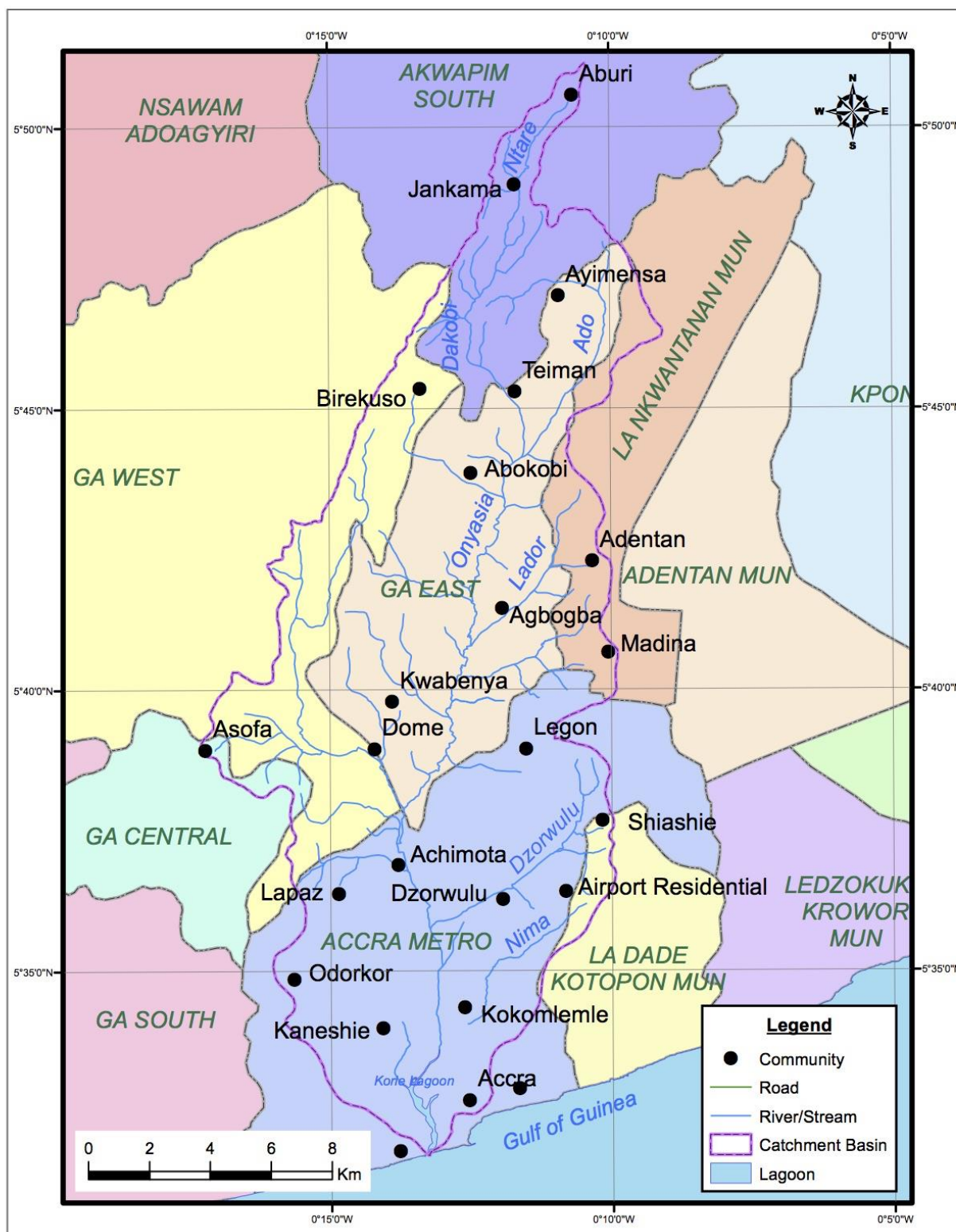


Figure 2: Odaw river basin showing the MMDAs and some major townships within its catchment

The coastal zone comprises two vegetation types, wetland and dunes. The coastal wetland zone has been badly affected by intense unplanned urban developments. These areas were also highly productive and served as an important habitat for marine and terrestrial-mainly bird life. Mangroves, comprising of two dominant species, are found in the tidal zone of the estuaries sand lagoons. Salt tolerant grass species cover substantial low-lying areas surrounding the lagoons.

Achimota Forest is the only forest reserve in the river basin. These are being damaged from residential encroachment, bush fire, sand mining and illegal tree felling. Most of the open spaces in Accra are used for the cultivation of food crops like corn, okro, tomatoes and other vegetables. Fertilizers and insecticides are used in these areas. Constant felling of trees, bad farming practices and annual burning has altered the vegetation from “dry forest” and greatly depleted the fertility of the soil.

With the exception of the industrial area along the Odaw River, air quality in the basin area is good. Minor incidents of localised pollution from automobile fumes arise during certain climatic conditions typically in the harmattan period from December to February, but these are insignificant compared to those registered in some developed countries. During the months of December to February, the effect of the Harmattan (fine windblown dust from the Sahara region) causes loss of visibility and some health problems including upper and lower respiratory tract infections. These are seldom prolonged. Odour levels arising from decomposing rubbish and sanitary wastes are high in inner city areas, especially, along the drainage system and previously in the region of the night soil dump at Korle Gonno.

3.2 Description of the MMDAs within the Odaw Basin

The MMDAs occupying the Odaw river basin and therefore direct beneficiaries of the project are listed in the table below. The dominant Assemblies are the AMA and the Ga East making up over 65% of the total basin area. The entire Ga East Assembly is located within the basin.

Table 1: Characteristics of the MMDAs in the Odaw Basin

No.	MMDA name	Land area within the Odaw Basin, km ²	Relative Percentage of land in the Odaw Basin	Total Population of the MMDAs
1.	Accra Metropolitan Area (AMA)	96.7	35.3	*1,986,580
2.	Ga East Municipal Assembly	82.5	30.1	147,742
3.	Ga West Municipal Assembly	43.9	16.1	219,788
4.	Akwapim South District Assembly	28.1	10.2	166,544
5.	La Nkwatanang Madina Municipal Assembly	15.6	5.7	111,926
6.	La Dadekapon Municipal Assembly	3.9	1.4	183,528
7.	Ga Central District Assembly	3.2	1.2	117,220

	TOTAL	274.8	100.0	2,561,834
--	--------------	--------------	--------------	------------------

*estimated resident population

3.2.1 Demographic information

In terms of population and basin activities, the AMA is by far the most dominant Assembly with over 65% of the total population. The high population figure of the city (4,337,542 persons) within the AMA is both an asset and source of worry to authorities. While the relatively high population serves as a huge and vibrant market for investors, it also poses problem of sanitation and waste management as well as traffic jam especially during the peak hours of the day.

It is estimated that during the peak hours, Accra hosts about 25% of the national population and has influx population of about 1,000,000 on daily basis for economic activities aside the residential dimension captured by the National Population Census. The primacy of Accra Metropolitan Area as an administrative, educational, industrial and commercial centre is the main factor for this and continues to attract people from all over Ghana, and outside, as its functional importance is on incremental ascendancy. Rural-urban migration accounts for over 35% of the population increase.

The environmental sanitation situation within the Assemblies in the upper reaches of the basin is also generally poor. Despite the rapid population growth in recent years, development has been haphazard and waste management facilities are grossly inadequate therefore contributing to immense stress on the basin resources.

3.2.2 Distribution and Density

The gross population density for Accra Metropolitan Area was 82.33 persons per hectare in 2000 compared to 6.23/ha in 1970. This is currently estimated to be 250.73/ha in 2010 and is projected to increase to over 292.50 by the end of 2020. This will put pressure on the existing facilities and will demand direct efforts to meet the needs of the populace.

At the Sub-Metro level, Ashiedu Keteke is projected to be the most densely populated Sub-Metro in the Metropolis followed by Ayawaso East and Ablekuma Central. These Sub-Metros, therefore, should be given developmental attention to improve the living conditions of the projected population.

3.2.3 Population Distribution by Age and Gender

Accra's population like that of other urban centres of the MMDAs under GAMA is a very youthful with 56% of the population under the age of 24 years. It will be realized from the age-sex ratio that 51% of the population are females and the rest 49% males. This gives a sex ratio of 1:1.04 males to females. The dominance of females over males is a reflection of the nationwide trend where the estimated ratio is 1:1.03. The need to target women in any development program in the project

MMDAs can therefore not be over emphasized. Age dependency ratio has been calculated to be at approximately 60%. About 60 % of residents of Accra rely on the other 40% for their livelihood.

3.2.4 Environmental sanitation challenges

Issues affecting urban drainage

Poor drainage is the major problem, which affects many parts of the urban areas in the respective MMDAs especially in the Metropolis. Natural features such as the underlying geology, soil conditions and localized topographic features create some drainage problems. Development should never have been permitted in most flood prone areas; however, poor physical development control has been unable to prevent urban land encroachment. The majority of the problems are created by the high rate of urbanization (4.2%) of the urban areas and its impact on increase surface water runoff and flooding in low lying areas. The inadequate drainage and poorly designed channels in many parts of the Basin have given rise to serious flood problems. These problems are compounded by choked drains. A well-organised programme for seasonal clearing of drains is required to ensure they remain free flowing.

Dredging of the Korle lagoon is required to reduce flooding and provide improved flow in the existing channel system. The Odaw basin drainage channels have lost much of their potential natural hydraulic performance due to the build-up of sediments and solid waste materials over many years and with less than optimal dredging investments on an annual basis. The project will restore that potential hydraulic performance. Other key activities include to restore and maintain the hydraulic performance, e.g. sand traps on tributaries, the repair of critical collapsed channel linings, and the repair of the Kaneshie drains.

There are, however, a number of problems involved with the Korle Lagoon, which make the dredging of this lagoon expensive. In the upper reaches of the lagoon, old car bodies and other wrecked machinery and equipment have been carried or deposited in the lagoon and are now embedded in the floor of the estuary. The removal of wreckage is necessary to create a proper channel to ensure adequate flushing once the entrance is widened. Against this background the Ministry of Works and Housing in collaboration with the AMA has implemented the Korle Lagoon Ecological Restoration Project (KLERP) with limited success. However, the existence and activities of Old Fadama (Sodom and Gomorrah) posed great difficulties for the KLERP.

4 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

The relevant national and sector policies and plans, national legal and institutional frameworks and World Bank safeguards policies to guide the proposed GARID projects are listed here and briefly described in the **Annex 1**. The key institutions are however described below.

The relevant national policies to guide the implementation of the proposed interventions include the following:

National Policy

- The National Environment Policy (2013);
- The National Environmental Sanitation Policy dated April 2010;
- National Health Policy (2007);
- Riparian Buffer Zone Policy, 2011;
- National Urban Policy Framework and Action Plan, 2012; and
- National Water Policy.

4.1 National Legal and Regulatory Framework

The relevant national laws and legislation particularly to guide the preparation of the ESMF for the proposed project include the following:

- The Constitution of Ghana
- The State Lands Act, 1962
- The Lands (Statutory Wayleaves) Act, 1963
- Lands Commission Act 2008, Act 767
- Environmental Protection Agency Act 1994, Act 490
- Environmental Assessment Regulations 1999, LI 1652
- Fees and Charges (Amendment) Instrument 2015 (LI 2228)
- Water Resources Commission Act 1996, Act 522
- Local Government Act, 1993 Act 462
- Lands (Statutory Wayleaves) Act, 1963 (Act 186)
- The State Lands Act, 1963 (Act 125)
- Lands Commission Act, 2008 (Act 767)
- The Labour Act, 2003 (Act 651)
- Workmen's Compensation Law, 1987, PNDCL 187

4.2 Institutional Framework

The ministries with responsibilities for drainage works are the Ministries of Works and Housing; Sanitation and Water Resources; and the Ministry of Highways and Roads. These responsibilities are

prominent in the National Environmental Sanitation Policy. The policy also promotes decentralized responsibilities for sanitation and hygiene to the local level, thus involving the Ministry of Local Government and Rural Development.

The responsibility for primary drains lies with the Hydrological Services Department (HSD) under the Ministry of Works and Housing. The responsibility for the construction of secondary and certain tertiary drains lies with the Department of Urban Roads (DUR), a unit under the Ministry of Roads and Highways. While DUR procures, funds and supervises the execution of works, these responsibilities are gradually devolved to the MMDA.

A schematic overview of the key actors in drainage is given in the Figure 3-1.

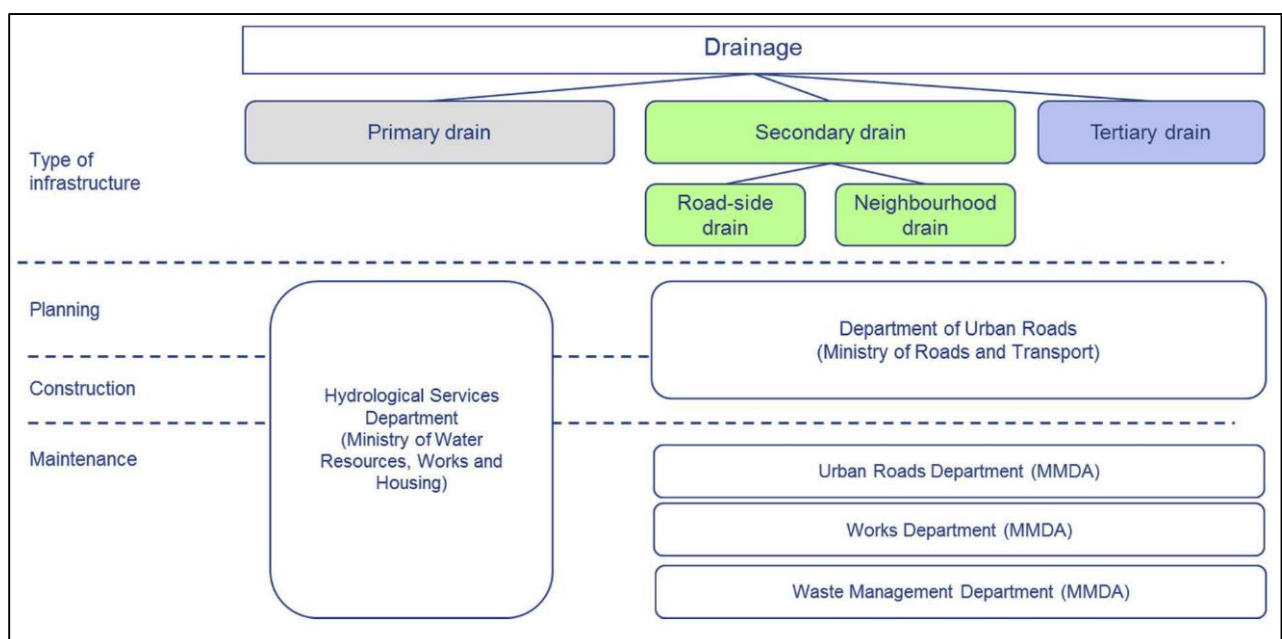


Figure 3: Institutional responsibilities in the drainage sector (Source: GNWP TA, September 2014)

Ministry of Works and Housing (MWRWH)

The Ministry of Works and Housing (MWRWH) has the overall responsibility for the initiation, the formulation, implementation and co-ordination of policies and programmes for the systematic development of the country's infrastructure requirements in respect of Works, Housing and Flood Control Systems to ensure efficiency of the sector. The Works Directorate and the Hydrological Services Department of the Ministry have direct responsibility for drainage and flood control measures.

The main objective of the Works Directorate is to facilitate the formulation of policies for the construction industry (building and drainage), and the protection of Ghana's coastline through the following:

- Liaise with PPME Directorate in the development of sectoral policy;
- To collate plans, programmes and projects emanating from policies and objectives of the sector as well as assist in the development of strategies for the determination of works priorities;
- To programme and coordinate the construction, rehabilitation, maintenance and reconstruction of state properties i.e., public buildings and Government bungalows;
- To programme and coordinate the construction, rehabilitation, maintenance and reconstruction of storm water drainage systems and coastal works;
- To liaise with works sub-sector implementing Agencies to ensure that, their programmes are integrated into well-defined national and sectoral plans and priorities;
- To prepare short, medium and long-term plans for the sub-sector to attract donor funding;
- To monitor the implementation of all works related field programmes and projects.

The Hydrological Services Department is an agency of the Ministry has the responsibility of programming and the co-ordination of coastal protection works, the construction and maintenance of storm drains countrywide and the monitoring and evaluation of surface water bodies in respect of floods.

Ministry of Sanitation and Water Resources

The Ministry has a vision of having people living in Ghana to have easy access to affordable, safe and sustained drinking water and sanitation services, and clean /hygienic environment by year 2025.

The MSRW has a mandate to provide safe drinking water, and sanitation services; ensure proper and timely collection and management of solid and liquid wastes; to set service standards and implement mechanisms for ensuring compliance and quality assurance; coordinate and harmonise strategies, technologies and approaches to ensure cost-effective delivery of WASH services; and leverage market mechanisms to create jobs to all segments of people living in Ghana through WASH service delivery.

The Ministry of Sanitation and Water Resources is committed to advancing the President's objectives for water and sanitation by creating and exercising an organization that is unprecedented and exemplary in its culture of innovation, its reliance on integrated strategies, its collaboration with external stakeholders, and its creation of a viable economy through building new markets and partners. Its organizing principles include:

- Transformational through, introducing a new paradigm of Government leadership and drive in the sector;
- Progressively reducing donor dependency to generate domestic finance emphasizing non-traditional sources of finance;
- Delivering water and sanitation be assessed on the basis of the service provided and people served rather than the facility points such as counting boreholes, toilets etc.
- Focusing on developing human resource capacity, its richest resources, to a competent workforce that is highly motivated;
- Repositioning the role of government to focus on providing enabling environment for the delivery of WASH and actors seen as partners with of the government;
- Considering sanitation as a business venture and waste as a resource to convert and gain from;

- Seeing water as a service and not the provision of infrastructure and facilities;

Ministry of Inner City and Zongo Development

The Ministry of Inner-City and Zongo Development was established in February 2017 pursuant to Executive Instrument (E.I) 28. The mandate of the Ministry is to formulate and oversee implementation of policies, programmes and projects to alleviate poverty and ensure that Inner-City and Zongo communities become inclusively developed and prosperous.

The goal of the Ministry is to facilitate a broad-based infrastructure, social and economic development of Inner-City and Zongo communities within the context of inclusive, resilient and sustainable urban development.

In fulfilment of its mandate, the Ministry is implementing a number of interventions which have been organized around the following programme areas:

- Economic Empowerment and Social Development
- Infrastructure and Sanitation Enhancement
- Heritage Preservation and Cultural Promotion
- Security and Crime Control

Ministry of Local Government and Rural Development

The Ministry of Local Government and Rural Development (MLGRD) exists to promote the establishment and development of a vibrant and well-resourced decentralized system of local government for the people of Ghana to ensure good governance and balanced rural based development. The MLGRD is the main implementation agency for the GAMA S&W Project, aimed at providing emergency priority drainage intervention to alleviate the situation in flood prone areas.

Metropolitan, Municipal and District Assemblies (MMDAs)

Metropolitan, Municipal and District Assemblies (MMDAs) are responsible for the provision of water and sanitation services within their respective areas of jurisdiction, including the planning and implementation of projects where necessary.

The proposed interventions fall within the jurisdiction of the respective Assemblies and therefore key institutions involved in flood adaptation and waste management in their respective jurisdictions. The legislative instruments which set them up charges them to ensure public safety, including public protection from the adverse impacts of floods, see Section 46 of the Local Government Act, 1993 (Act 462). The Assemblies serve as the planning authority responsible for the overall development of their areas of jurisdiction.

Sub Metropolitan and Zonal Councils

The Metropolitan Assembly and Municipal Assemblies work through decentralized units comprising Sub- metropolitan and Zonal Councils respectively which have been created by various legislative instruments. The functions of these decentralized units include the day-to-day administration of the area under its jurisdiction. For example, the AMA has ten (10) sub metros whereas the Ga East

Municipal Assembly has only two (2) zonal councils. They ensure regular inspection and monitoring of their respective localities to avoid conditions likely to be offensive or injurious to public health.

Department of Urban Roads (DUR)

The responsibility for the construction of secondary and certain tertiary drains lies with the Department of Urban Roads (DUR), a civil service organization under the Ministry of Roads and Highways. While DUR funds, procures and supervises the execution of works, these responsibilities are gradually devolved to the MMDA. Thus, for the maintenance of secondary and tertiary drains in the MMDA, the Urban Roads Department (URD) is the first responsible entity.

National Disaster Management Organization

The National Disaster Management Organisation (NADMO) is the government agency that is responsible for the management of disasters as well as other emergencies in Ghana. NADMO performs specific functions which are all aimed at ensuring that in times of emergency, the government is ready to support relief efforts. These functions are:

1. Rehabilitation services for victims of disasters;
2. Mobilization of people at various levels of society to support governmental programmes;
3. Ensuring the preparedness of the country in the management of disasters; and
4. Coordinating the activities of various governmental and non-governmental agencies in the management of disasters.

The organization's mandate includes response to earthquakes, floods and rainstorms, and market fires.

Water Resources Commission (WRC)

The WRC is responsible for granting licenses for any water use activity and the procedures as laid down in the WRC Act 1998 (Act 526) will be followed. All project activities requiring such license will receive assistance from the WRC and the Commission will therefore provide adequate guidance to ensure that the proper procedures are used.

Lands Commission

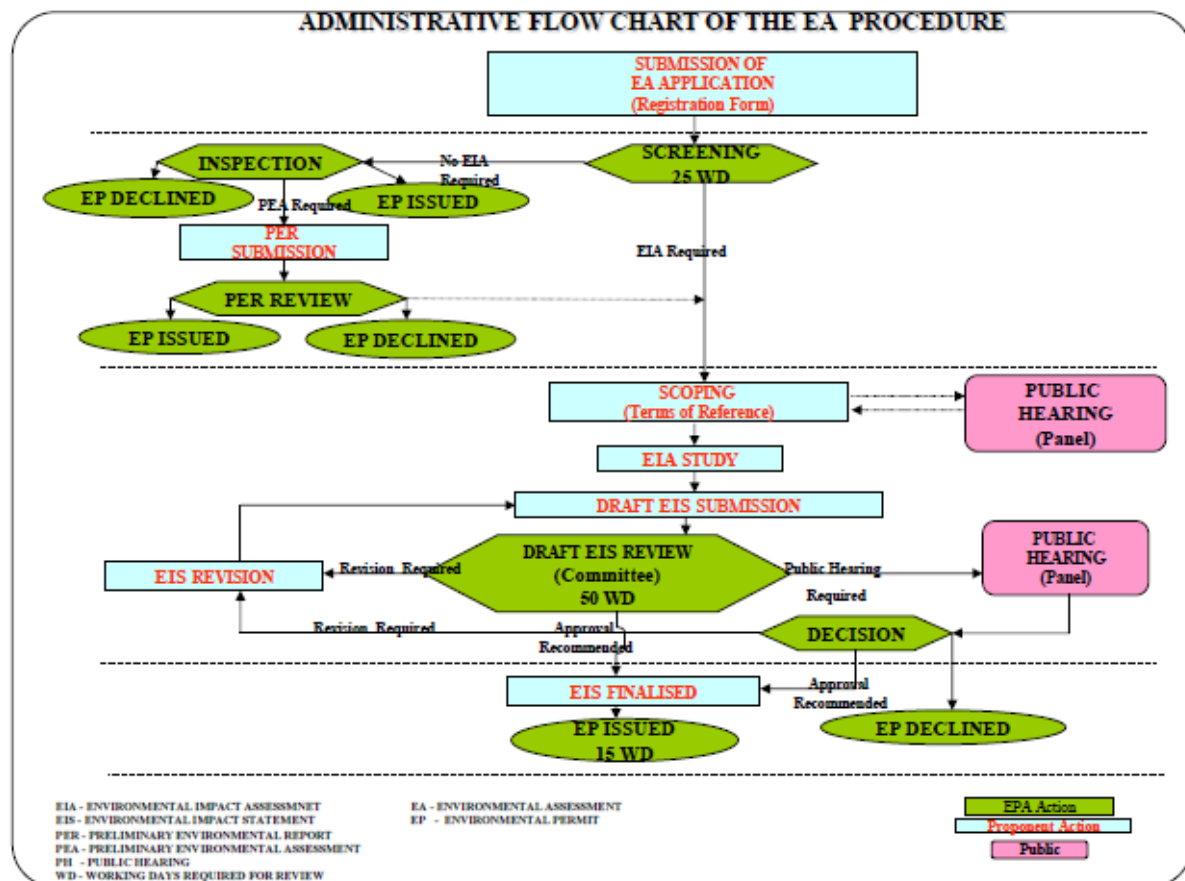
The Land Valuation Division (LVD) is the statutory body ensuring that land required for projects are properly acquired and also transparent procedures are followed and fair and adequate compensation is paid. Though private firms may be invited to participate in the process, in case of disputes, the LVD would assist to ensure prompt settlement.

Environmental Protection Agency

The Environmental Protection Agency is the body responsible for ensuring compliance with laid down ESIA procedures in Ghana in accordance with the EPA Act 1994 (Act 490) and its amendment and is mandated to give environmental permits for Projects. The ESIA is being applied in Ghana to development projects as well as other undertakings as an environmental permitting pre- requisite and a major environmental management tool. The EPA is represented in all the ten (10) regions of

the country and will support the project by exercising its permitting and monitoring powers. Though the Agency's technical capacity may be adequate there is some concern with regard to logistics especially transport and personnel which may therefore limit its effectiveness.

The Ghana EA procedures are largely in agreement with the World Bank policies and procedures and the former is now well entrenched in the country to assure satisfactory environmental and social performance of the GARID. The flow chart below provides the EA procedures of the EPA.



4.3 World Bank Safeguards Policies

The World Bank (WB) has 10 policies/procedures to guide the safe and sustainable development of projects it is funding. Four (4) of the Policies, OP 4.01 (Environmental Assessment), OP 4.04 (natural habitats), 4.11 (physical cultural resources), and OP 4.12 (Involuntary Resettlement) are triggered by the proposed project. The WB safeguards policies and a summary of their core requirements are provided in Table 3-1.

Table 2: Summary of World Bank Safeguard Policies

No	World Bank Safeguard Policy	Summary of core requirements	Potential for Trigger under proposed project	Remarks or recommendation for proposed project
1	OP 4.01 Environmental Assessment	<p>Requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources); and trans boundary and global environmental aspects. It categorizes proposed projects into categories A, B, C or FI based on the extent of adverse impacts anticipated from the project.</p> <p>For Category A and B projects, an ESIA is to be prepared to guide the Implementation of mitigation measures for all identified environmental impacts from the proposed warehouse project.</p>	Triggered	The project may have significant environmental and social consequences.
2	OP 4.04: Natural Habitats	Do not finance projects that degrade or convert critical habitats. Support projects that affect non-critical natural habitats only if no alternatives are available and if acceptable mitigation measures are in place. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present).	Triggered	Project locations are not known. Various sites may be encountered during excavation. The ESIA will incorporate mitigation measures to reduce the impact on natural habitats, This ESMF also provides for screening and further assessments of sub-projects as they become known during

No	World Bank Safeguard Policy	Summary of core requirements	Potential for Trigger under proposed project	Remarks or recommendation for proposed project
				implementation.
3	OP 4.09: Pest Management	Support integrated approaches to pest management, identify pesticides that may be financed under the project and develop appropriate pest management plan to address this.	Not triggered	The project will not involve the use of pesticides.
4	OP 4.36: Forest	Aim is to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. Support sustainable and conservation oriented forestry. Do not finance projects that involve significant conversion or degradation of critical forest areas.	Not triggered	Project location and design will not affect any critical forests.
5	OP 4.11: Physical Cultural Resources	Investigate and inventorise cultural resources potentially affected. Include mitigation measures when there are adverse impacts on physical cultural resources or avoid if possible	Triggered	The river is seen as a deity by the local people. A chance find procedure will be developed to address issues of any cultural finds during excavation.
6	OP 4.12: Involuntary Resettlement	Assist displaced persons in their effort to improve or at least restore their standards of living. Avoid resettlement where feasible or minimise. Displaced persons should share in project profits. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. The policy prescribes compensation	Triggered	Livelihood and land issues may be identified

No	World Bank Safeguard Policy	Summary of core requirements	Potential for Trigger under proposed project	Remarks or recommendation for proposed project
		and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects.		
7	OP 4.10: Indigenous Peoples	Screen to determine presence of indigenous peoples in project area. Policy triggered whether potential impacts are positive or negative. Design mitigation measures and benefits that reflect indigenous peoples' cultural preferences.	Not triggered	No indigenous groups were identified.
8	OP 4.37: Safety of Dams	Requires that experienced and competent professionals design and supervise construction, and that the borrower adopts and implements dam safety measures through the project cycle. The policy distinguishes between small and large dams by defining small dams as those normally less than 15 meters in height. Large dams are 15 meters or more in height.	Not triggered	The proposed project does not involve dams.
9	OP 7.50: Projects on International Waterways	Ascertain whether riparian agreements are in place, and ensure that riparian states are informed of and do not object to project interventions.	Not triggered	The proposed project does not involve international waters.
10	OP 7.60: Projects in Disputed Areas	Ensure that claimants to disputed areas have no objection to proposed project.	Not triggered	No issues of land dispute were identified.

5 PROJECT ACTIVITIES AND POTENTIAL IMPACTS

The nature and scope of planned works under the project present significant social and environmental risks. In particular, the process of implementing physical works and the (in)actions of contractors are expected to extend both positive and negative environmental and social impacts through interactions with the human and natural environment of the project. Based on experiences with similar projects, the project implementation may result in physical and economic displacement of local populations along the Odaw channel, generation of noise, dust, and waste from construction activities, occupational health and safety concerns, intrusion on physical cultural relics through construction activities, further pollution and alteration of natural streams and river courses as a result of poor design and construction, further destruction of natural habitats along the Odaw basin, temporary obstruction to traffic flow and restriction of access to residential and commercial properties and therefore the need for mitigation measures. The environmental regulations of Ghana and the World Bank's operational policies on environmental and social safeguards require that projects that present significant risks to communities must assess, plan, avoid, minimize and as a last resort, mitigate negative effects, while extending the development benefits that are presented by the project.

Preliminary studies and assessment recognize the positive environmental and socio-economic impact that the project can generate. These assessments also highlight the potential negative environmental and social impacts and therefore the need for mitigation measures. The key sub projects will require the design and implementation of mitigation actions as per this ESMF.

5.1 Key potential activities and interventions of environmental and social significance

The project components and associated project interventions are provided in the table below.

Table 3: Project components and proposed sub project activities

Project Component	Likely Sub- Project activities
Component 1: Drainage and flood management improvements within the Odaw Drainage Basin	<ol style="list-style-type: none"> 1. Improvements in urban drainage and flood management in Odaw drainage basin through <ol style="list-style-type: none"> a. Short-term relief civil works- Dredging, de-silting, rehabilitation of drainage systems, and b. Long-term complete improvement of drainage systems (i.e. widening of Odaw river mouth, rehabilitation of inoperable pump stations; lining of major drainage channels; and construction of selected secondary channels) in the Accra Metropolitan Area. 2. Development of green spaces and parks to serve as flood water retention areas; 3. Improvements in flood response systems through better infrastructure for flood forecasting and warning systems.
Component 2: Improvements in solid waste management	<ol style="list-style-type: none"> 4. Improvements in community-level solid waste management through: <ol style="list-style-type: none"> a. Provision of sanitation equipment and technical services for solid waste collection;

capacity including minimizing solid waste in waterways.	<ul style="list-style-type: none"> b. Community mobilization and awareness raising; and c. The application of a results-based incentive approach to enhance waste management and good sanitation practices; <p>5. Improvement in solid waste management capacity in Greater Accra by</p> <ul style="list-style-type: none"> a. Identifying, assessing and improving waste recycling, treatment and disposal facilities. b. Construction of solid waste transfer stations c. Capping of landfills
Component 3: Support to most vulnerable communities within the Odaw Drainage Basin to reduce their vulnerability and improve living conditions	<ul style="list-style-type: none"> 6. Upgrading of basic infrastructure and services identified through geospatial and social vulnerability diagnostics. 7. Improve city integration by upgrading access roads between inner cities and CBDs 8. Participatory resettlement involving low- income informal settlements aimed at providing support for safe housing.
Component 4: Strengthening capacity for planning, coordination, monitoring and evaluation	Projects concerning capacity building and extension and communication are deemed to be 'soft projects' which will not be associated with any physical infrastructural development. They are therefore not considered in subsequent analyses in later sections of this report

5.2 Description of some potential impact issues

This section provides discussion regarding the potential environmental and social risks and impacts associated with the specific project component activities listed above. These impacts and risks are then linked to each project type in Table 4. The discussion that follows addresses these concerns from a thematic context, such as water resources, waste disposal and social issues and concerns.

Removal of Vegetation Cover

Naturally, vegetation cover with its accompanying mulch of decaying leaves, barks and dead logs intercept rainwater and slow the speed of run-off. In many parts of the basin, most of the vegetation has been cleared to make way for buildings, car parks, roads, pavements, bus terminals, etc. Consequently, there is heavy discharge of run-off water when it rains. The provision of flood retention ponds and sedimentation basins may provide some solutions to these challenges. These must however be appropriately sited to be effective. Also, land must be available and possibly acquired for the purpose.

The Built Environment

The urban centres' massive, sprawling built-up and paved land surface has reduced the pervious surface available to allow rainwater to percolate or sink into the ground. For this reason also, heavy rains produce high volumes of run-off and flush floods. For example, large volumes of run-off from the high population density settlements, Accra Newtown, Nima, Mamobi and Alajo feed the large Nima drain and the Odaw channel. As stated above, the project will require land and good designs for the siting of retention ponds and sedimentation basins in the upstream reaches of the Odaw river. If this situation is to be avoided, these engineering and conservation measures will need to be applied to reduce the rate of runoff. There is the need to introduce measures to protect the upper catchment areas and streams where intense developments are already taking place.

Silted River Courses

Being a coastal river, its elevation is much lower in many parts especially within the AMA. A number of rivers and streams run through Accra, from the north and down into the sea in the south. The Odaw River is the biggest of them, and most of Accra's floods occur in settlements close to its banks and those of its tributaries. The Odaw is in the maturity stage of its course. In that stage of the river's course, gradient is most gentle and the speed of flow is slowest. Additionally, the volume of water is so much larger than it was in the youthful and middle stages, because smaller streams and open sewers join it at different places along the course. The maturity stage is a period of high siltation: the gentle gradient and slow current cause the river to lose its force to transport materials it may be carrying along any further. As a result, the river deposits silt and debris it carried from the upper course here. It is no wonder that sand banks develop in the channel from Odawna, near Kwame Nkrumah Circle, downstream into the Korle Lagoon. These sand developments obstruct the river's flow, and cause it to overflow its dykes to flood the surrounding lowlands.

Unfortunately, the silting of the Odaw channels is worsened by poor waste management practices and attitudes. Solid wastes discharged into drains impede water flow during storms and force the drains to overflow their banks or dykes into adjacent low-lying lands. The project must address the solid waste management challenges holistically to minimize the flooding incidents.

Inappropriate Design of Channels and Culverts

Many localised flooding problems in Accra and its environs can be attributed to poor design of storm water drainage infrastructure, including under-sized culverts and drainage channels, poor operation and maintenance regime and under-estimation of siltation loads. Many of these are open sewers which pose major health hazards. It must therefore be ensured that these drains are cleaned as part of a public health programme. Besides, simpler design standards could enable much larger areas to be serviced by storm water drainage infrastructure. As part of construction management interventions, diversion of channels may be required and this may have some impact on local hydrology and settlements. This may entail some economic and physical displacement of the local people with inconveniences during the construction period.

Informal and Uncontrolled Housing Developments

Many private housing developments have been illegally sited in the Odaw flood plains and therefore

impede the flow of water during heavy rain events. The residents of such houses face considerable risks to their persons and properties. Most times, de-silting activities are obstructed by such properties and residents are reluctant to evacuate from these areas despite the risks. Metropolitan and Municipal authorities have unfortunately been slow in checking and prohibiting these developments due to various reasons including financial constraints and most times, lack of political will. The community leaders must be actively involved in the process of encouraging such residents to vacate such areas and in managing any accompanying conflicts.

Accessibility challenges within communities during flood events

Apart from the risks many community members and the general public face during flood occasions, many communities are separated from each other during the wet months of the year when the streams are full. The communities on their own have constructed makeshift bridges to assist them cross the streams but these pose grave danger to all persons especially women and children who have to use these poorly constructed structures to access markets or to attend school. The project may mitigate such risks by providing footbridges within such communities.

Solid waste disposal

Due to lack of adequate facilities, many communities use the Odaw river as an informal means of disposal of their solid wastes. In many poor settlements, where some facilities may even exist including the operations of the 'small scale' house to house collection agents, residents are reluctant to patronize these and continue to indiscriminately dispose of their waste especially into the drains. Clearly, all the waste is washed into the river when it rains. Adequate facilities must be provided and the residents encouraged through community policing to use the provided facilities. The interventions include construction of two transfer stations for solid waste to reduce the travel time especially for the small-scale waste collectors. This will reduce the tendency for the collectors to dump in unauthorised places due to long travel distances to the existing authorized landfill site at Kpone about 45km from the Odaw. There are two dumpsites which will be capped by the project. These dumps located near Pantang/Abokobi and Old Fadama near the ICGC church contribute leachate discharge into the Odaw and refuse dumps also allow for uncontrolled litter blowing into the channel.

Disposal of dredged silt

The disposal of dredged silt from the drains and lagoon has the potential to create a number of problems. There are opportunities to utilize material for filling low-lying areas near the edge of the lagoon. Filling may also destroy storage capacity. Dredging also needs to be well managed as the operation can release dangerous quantities of methane and other toxic gases into the water in the estuary. This could have a dangerous impact on aquatic life. There is the need to consider carefully the disposal of material taken by dredging so that undesirable environmental impacts of this operation are minimized. Testing of potential dredge materials will be undertaken as part of subsequent environmental assessments, and the appropriate disposal measures for contaminated dredge materials incorporated into the environmental management plan.

Lagoon Outfall

Many of the lagoons along the Ghanaian coastline remain closed until opened by heavy rains. In the case of Korle Lagoon, these do not provide sufficient capacity for storm water discharge or adequate flushing of the lagoon system. Subsequently, the lagoon has become much polluted with a large buildup of sediment. In order to improve the quality of water and provide sufficient channel clearance to enable floodwater to be adequately discharged, the channel entrances at Korle need to be further widened substantially. There is also a need to bypass the dry season flow around the edge of the lagoon to prevent the discharge of waste and maintain water quality in the upper reaches. Unfortunately, settlements have been allowed to sprawl all around the Korle lagoon and though a buffer zone was demarcated to protect the resource, lack of monitoring and enforcement by the city authorities have resulted in serious encroachment which now pose a severe threat to the existence of the lagoon.

In summary, Table 4 below lists some significant potential social and environmental impact issues from the implementation of the various sub-project activities.

Table 4: Sub-project activities and potential environmental and social impact issues/ concerns

	Sub- Project activities/interventions	Potential Impact Issues/ concerns
		<u>ENVIRONMENTAL</u>
		<u>Water resources and pollution</u>
1.	Dredging of drainage basin	✓ Stirring up of pollutants and their transport downstream
2.	De- silting of drainage channels and lagoon	✓ Alterations in local natural water cycles/ hydrology
		✓ Proper disposal of dredged material
		✓ Disposal of treated wastewater
		<u>Vegetation losses, soil disturbance and Erosion</u>
3.	Rehabilitation/ construction/ lining of drains	✓ Site clearing
		✓ Increased soil erosion due to disturbances
4.	Widening of river mouth	<u>Air quality</u>
		✓ Site clearing and excavation works
5.	Rehabilitation of pump stations	✓ Transport of construction materials and waste
		✓ Cutting of roads
		✓ Exhaust emissions for equipment including heavy duty trucks
6.	Creation of parks to retain flood water	<u>Noise and Vibration</u>
7.	Solid waste recycling/ treatment/ disposal facilities	✓ Site clearing and excavation works
		✓ Concrete works
		✓ Cutting of roads

	Sub- Project activities/interventions	Potential Impact Issues/ concerns
8.	Upgrading of roads	<u>Visual intrusion</u> ✓ Construction sites
9.	Resettlement of slums	<u>Disruption of Utility services and damage to public infrastructure</u>
10.	Capping of Landfill sites	✓ Cutting of roads ✓ Drain excavation works
11.	Establishment of solid waste transfer stations	<u>Generation and disposal of solid waste</u> ✓ Construction works ✓ Dredged materials ✓ Handling of contaminated and/or hazardous waste ✓ Exposure of waste handlers ✓ Not-in-my-back-yard (NIMBY) <u>Public safety and traffic issues</u> ✓ Construction works <u>Sanitation and public health impacts</u> ✓ Construction works <u>SOCIAL</u> <u>Land/ wayleave acquisition and compensation issues</u> ✓ Clear understanding of land use and occupancy ✓ Conflicts in land claims ✓ Land acquisition and compensation issues ✓ Discrimination, lack of grievance mechanisms for land owners and users ✓ Potential neglect of public concerns and consultation ✓ Temporary and permanent properties affected by project ✓ Political influences <u>Maintaining Livelihoods</u> ✓ Petty traders and various shops and other economic activities (garages, 'chop' bars etc) operating within reservations

	Sub- Project activities/interventions	Potential Impact Issues/ concerns
		<ul style="list-style-type: none"> ✓ Demand for alternative locations to do their business ✓ Adequate, documented and transparent compensation for affected persons in order to vacate unauthorised sections of project areas <p><u>Security and Safety</u></p> <ul style="list-style-type: none"> ✓ Safety and security of community informants/ whistle blowers ✓ Safety and security of workers ✓ Delayed court processes and low fines which do not create proper structures to punish/deter violations ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process <p><u>Occupational health and Safety</u></p> <ul style="list-style-type: none"> ✓ Lack of awareness creation programs on health and safety ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process <p><u>Cultural Heritage</u></p> <ul style="list-style-type: none"> ✓ Access to local gods (rivers) ✓ Preservation of local cultural identity and heritage ✓ Compensation issues ✓ Community pride and support ✓ Community relinquishing/ sharing heritage for greater good ✓ Chance finds of cultural significance <p><u>Resource Access and Possible Restriction</u></p> <ul style="list-style-type: none"> ✓ Rights to question and have individual considerations addressed ✓ Possible alternative options ✓ Established grievance redress options

6 GUIDELINES FOR MITIGATION AND ENHANCEMENT MEASURES

6.1 General Mitigation Measures

Environmental mitigation consists of measures that can reduce the negative environmental impacts associated with implementation (construction, expansion, rehabilitation etc.) of the project. Mitigation measures have been identified that would address significant impacts, both existing and potential impacts associated with the GARID project. The general potential impacts and the mitigation measures are presented in Table 5 below. The responsibilities for implementing these measures are described later in the report.

Table 5-2 presents an ESMP template which can assist the implementing ministries and MMDAs in screening of proposed subprojects and completion of registration forms and preparation of environmental plans.

Table 5: Environmental and Social Mitigation Measures

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
<i>Water Resources and pollution</i>	<ul style="list-style-type: none"> ✓ Works not to be executed under aggressive weather conditions such as rains or stormy conditions. ✓ No solid waste, fuels, or oils to be discharged into any section of the drain or waterway. ✓ Construction to be done in sections to minimize impacts and exposure of soil to erosion. ✓ Excavated materials and silt, which cannot be used will be disposed of at appropriate sites as per the Waste Management Plan prepared by contractor and approved by MMDAs. The rampant practice of heaping de-silted materials by banks which are later washed back into drains after rain events will not be tolerated ✓ Temporary sediment barriers to be installed on slopes to prevent silt from entering water courses. ✓ Maintenance, fuelling and cleaning of vehicles and equipment to take place at off-site workshop with adequate leakage prevention measures ✓ Dredged material will be tested and disposed of appropriately avoiding discharge into water bodies
<u>Air quality</u>	<ul style="list-style-type: none"> ✓ Soil/sand and cement loads in transit to be well covered to reduce dust levels rising above acceptable levels. ✓ Stockpiles of exposed soil and unpaved access roads to be sprinkled with water to regulate dust levels. ✓ Use of good quality fuel and lubricants in vehicles, equipment and machinery. ✓ Ensure that heaped sand delivered for construction works is covered with tarpaulin to prevent wind and water transport of soil particles ✓ Engines of vehicles, machinery, and other equipment to be switched off when not in use. ✓ Regular scheduled maintenance and servicing to be carried out on all vehicles and equipment to minimize exhaust emissions. ✓ Construction and civil works to be phased out or controlled to reduce emissions from equipment and machinery in use.
<u>Vibration and Noise</u>	<ul style="list-style-type: none"> ✓ Excavation and construction activities to be carried out during daylight hours. ✓ Concrete mixer and other construction machines and equipment to be located away from sensitive environmental receptors. ✓ Construction equipment and machinery to be regularly maintained and serviced to reduce noise generation when in use. ✓ Engines of vehicles, equipment and machinery to be turned off when not in use.

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	<ul style="list-style-type: none"> ✓ Earthworks and other construction activities to be phased out or controlled to reduce noise generation during construction. ✓ Neighboring residents and commercial activities to be notified in advance of the project before contractor mobilizes to site
<u>Visual intrusion</u>	<ul style="list-style-type: none"> ✓ Public to be well informed of upcoming project using appropriate signages and display boards prior to contractor accessing sites; ✓ Construction activities to be done in sections to reduce impacts of change and visual intrusions to the general public. ✓ The construction sites to be hoarded off from public view. ✓ Good housekeeping measures, such as regular cleaning, to be maintained at the construction site. ✓ Ensure an acceptable post-construction site as per provisions in the contract.
<u>Land/ wayleaves acquisition and compensation issues</u>	<ul style="list-style-type: none"> ✓ Consult affected property owners/users and seek their consent prior to commencement of construction works. ✓ Allow affected person to harvest any matured crops (e.g. plantains) before destroying or removing the crop. ✓ Ensure fair and adequate compensation is paid to all affected persons prior to commencement of construction activities as per the provisions of the RPF
<u>Disruption of utility services and damage to public infrastructure</u>	<ul style="list-style-type: none"> ✓ Collaborate with the MMDA Works and Urban Roads departments to ensure that the highest standards are implemented for the road cutting and reinstatement. ✓ Consult with utility providers to confirm location of their respective assets (pipelines, cables) within the project corridor to prevent blind encroachment ✓ Collaborate with the engineers of the utility providers (GWCL/ ECG/Telecommunication providers) to ensure the most appropriate measures are taken to safeguard the integrity of the pipelines/cables. Measures to be implemented include: <ul style="list-style-type: none"> ○ Avoiding the encroachment on the pipelines or cables ○ Inform the utility providers and the MMDAs of any damaged pipeline or cable ○ Promptly repair any damaged pipelines or cables ✓ Relocation of pipelines or cables to safe places

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
<u>Generation and disposal of solid wastes</u>	<p>Apply the principles of Reduce, Recycle, Reuse and Recover for waste management through the following actions:</p> <ul style="list-style-type: none"> ✓ Excavated earth materials will, as much as possible, be re-used for back filling purposes to reduce waste ✓ Excavated solid waste from the drain channel that are unsuitable for backfilling will be collected onsite, allowed to drain and collected for disposal at sites approved sites in collaboration by the MMDAs. ✓ Ensure that the required amounts of construction materials are delivered to site to reduce the possibility of the occurrence of excess material ✓ Provide bins on site for temporary storage of garbage such as lubricant containers, drinking water sachets and carrier bags/packaging materials. ✓ Ensure judicious use of construction materials such as pipes, laterites, sand, etc. to reduce waste ✓ All metal scrap waste will be disposed of at sites approved by the MMDAs or sold to approved third party agents for use by metal companies. ✓ Contractor to work according to a prepared and agreed Solid Waste Management Plan.
<u>Maintaining Livelihoods</u>	<ul style="list-style-type: none"> ✓ Ensure appropriate compensations are paid to PAPs as defined in the RPF; ✓ Employment and other opportunities to be given to local communities as much as possible.
<u>Public Safety and security</u>	<ul style="list-style-type: none"> ✓ Works on exposed trenches and earth materials will, as much as possible, be completed before new earth dug and trenches are created. ✓ Work areas to be hoarded off adequately to avoid inquisitive trespassers especially children ✓ Warning signs to be posted around work areas to discourage trespassers and inform the public of the hazard ✓ Contractors to maintain adequate security at construction sites to avoid pilfering or vandalising of property ✓ Visibility to be ensured in the night time by providing adequate lighting ✓ Vehicles to be equipped with reflectors and adequate signalling during works ✓ Ensure safety features of equipment and vehicles are functional ✓ Works procedures to be designed and discussed with workers before works commence each day to minimize accidents with communities
<u>Traffic management</u>	<ul style="list-style-type: none"> ✓ Contractors to inform affected communities of any envisaged traffic disruptions and alternative routes ahead of works ✓ Contractors to provide traffic management plans to be approved by relevant authorities ✓ Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	<ul style="list-style-type: none"> ✓ Works to be completed on time to minimize inconvenience to motorists and pedestrians
<u>Occupational health and safety</u>	<ul style="list-style-type: none"> ✓ Engage experienced artisans for construction works. ✓ All workers should be given proper induction/orientation on safety. ✓ The contractors will have a Health & Safety Policy and procedures to guide the construction activities. ✓ Regularly service all equipment and machinery to ensure they are in good working condition. ✓ Ensure there are first aid kits on site and a trained person to administer first aid. ✓ Provide and enforce the use of appropriate personal protective equipment (PPE) such as safety boots, reflective jackets, hard hats, hand gloves, earplugs, nose masks, etc. ✓ Proof of competence for all equipment/machine operators will be required and established through inspection of valid drivers or operator's license or documents. ✓ Comply with all site rules and regulations. ✓ Apply sanctions where safety procedures are not adhered to. ✓ Site meetings should create awareness on OHS. ✓ Ensure safety features of equipment and machines are functional with belts adequately guarded ✓ Report and investigate any near misses, accidents and injuries and record remediation actions to avoid future occurrences
<u>Contractors Camp management</u>	<ul style="list-style-type: none"> ✓ Provision of adequate sanitation facilities ✓ Proper housekeeping ✓ Provision first aid boxes with required items including condoms and dispensers
<u>Cultural Heritage</u>	<ul style="list-style-type: none"> ✓ Traditional authority responsible for sanctity of river gods properly identified and consulted ✓ Necessary cultural rites agreed with community and performed prior to access to water bodies ✓ Apply chance find procedures in consultation with relevant authorities

Table 5-2 Template of Environmental and Social Management Plan

Potential impacts	Mitigation measures	Implementation schedule	Monitoring indicators	Responsibility	Frequency	Cost estimate (\$)
<i>Water Resources and pollution</i>	<p>Works not executed under aggressive weather conditions</p> <p>-no solid and oily wastes to be discharged into drains and water ways</p> <p>- avoid storage of solid wastes near drain channels and water bodies</p> <p>- Maintenance , cleaning and fueling of construction equipment to take offsite</p> <p>- dispose waste as quickly as possible to avoid leachate and windblown solid</p>	During construction	<p>-observable change in turbidity of water bodies;</p> <p>-visibility of oil and grease film in drains and water bodies</p> <p>-BOD of nearby water bodies</p>	Contractor/ MMDAs	Weekly	\$

	waste into drains - pretreat leachate and washing water before disposal into environment					
<u>Air quality</u>	-spray periodically to control dust -Soil/sand ,cement loads in transit to be covered to reduce dust levels -stockpiles of exposed soils and unpaved access roads to be sprinkled with water to regulate dust - use quality fuel and lubricants in vehicles -engines, of vehicles, machinery to be switched off when not in use - provide	During excavation and construction activities	-Observable dust in air in surrounding environment --- -record/ evidence of spraying of water at construction site -PM NOx, SOx, CO	Contractor/MMDA	weekly	\$

	treatment for effluent before disposal into environment -					
<u>Soil erosion</u>	-Revegetate the construction site by planting rapidly growing vegetation- remove contaminated topsoil and dispose properly at MMA approved waste disposal site	During construction	-gully occurrence within and around the construction area -record of contaminated soil disposal	Contractor /MMDAs	Weekly	\$
<u>Vibration and Noise</u>	-Excavation and construction activities be carried out during day light -Construction equipment and machinery be regularly maintained and serviced	During construction activities	-use of ear plugs by workers ->50 decibels near homes ->75 decibels near roads	Contractor/MMDA	Weekly	\$

	-					
<u>Visual intrusion</u>	-provide dust bins to gather construction wastes and refuse for disposal	During construction	-	Contractor/MMDA	Weekly	\$
<u>Land/ wayleaves acquisition and compensation issues</u>	-consult affected property owners and seek their concern prior to commencement of construction works -allow affected people to harvest any mature crops before destroying or removing them. - ensure fair and adequate compensation is paid to all affected persons prior to commencement of construction activities as per the provisions of	During project planning and preparation	-availability of RFP -availability of Resettlement Action Plan -record of compensation payment	MMDAs/PCU	Daily	\$

	the RFP					
<u>Disruption of utility services and damage to public infrastructure</u>	-Collaborate with urban roads departments to ensure that the highest standards are implemented in road cutting and reinstatement Consult utility providers to location of their respective assets (pipelines, cables) within the project corridor to prevent blind encroachment	Before and during construction activities	-record of consultation with affected utility service providers - evidence of reinstatement of affected lines	Contractor/MMDA	Weekly	\$
<u>Generation and disposal of solid wastes</u>	-All construction wastes and metals be disposed off to approved MMAs waste disposal sites. -provide bins on site for temporary storage of	During construction	-availability of final approved waste disposal sites -no visible construction wastes on site -availability of dust bins on site	Contractor/MMDA	Weekly	\$

	garbage					
<u>Maintaining Livelihoods</u>	<ul style="list-style-type: none"> -Ensure appropriate compensation are paid to PAPs as defined in the RPF -offer livelihood restoration assistance where necessary -employment and other opportunities be given to local communities as much as possible 	Before construction activities and during construction	<ul style="list-style-type: none"> -reduced loss of property -record of local residents engaged in by contractor -compensation for lost assets 	MMDA/Contractor	Weekly	\$
<u>Public Safety and security & traffic mgt.</u>	<ul style="list-style-type: none"> -works on exposed trenches and earth material will as much as possible, be completed before new earth dug and trenches are created -work areas to be hoarded off adequately to avoid inquisitive 	During construction	<ul style="list-style-type: none"> -absence of unauthorized personnel at active construction site - availability of signages >30km/hr speed limit for construction trucks at project community 	Contractor/MMDA	Daily	\$

	trespassers especially children -contractors to provide traffic management plan to be approved by the relevant authorities -warning signs to be posted around work areas to discourage trespassers -		- availability of contractors traffic management plan			
<u>Occupational health and safety</u>	-engage experience artisans for the construction works -all workers should be given proper induction on safety - contractors will have a health and safety plan and procedures to guide the	During construction	-workers wearing PPEs -safety induction record -contractors health & safety plan -availability of first aid kit on site	Contractor/MMDA	daily	\$

	<p>construction activities—</p> <ul style="list-style-type: none"> -ensure there are first aid kits on site and a trained person to administer first aid -Provide and ensure use of proper PPEs 					
<u>Cultural Heritage</u>	<ul style="list-style-type: none"> -Traditional authorities responsible for sanctity of river gods properly identified and consulted -necessary cultural rites agreed with community and performed prior to access to water bodies 	Before and during construction activities	<ul style="list-style-type: none"> -evidence of consultation -complaints by traditional rulers 	MMDA/Contractor	Weekly	\$

7 ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

During the implementation of the GARID Project activities in the GAMA, potential environmental and social impacts must be considered and managed. The impacts must be mitigated, minimized or preferably avoided particularly to meet the requirements of World Bank safeguards policies and Ghana national legal requirements on environment. The Environmental and Social Management Framework (ESMF) provides guidance to the Project on procedures to be followed as sub-projects are identified during implementation. The procedures would be consistent with World Bank safeguard provisions and national regulations and legislations on environment. Roles and responsibilities of the implementing agencies and other collaborating agencies are clearly defined as well as monitoring protocols to be followed to ensure that the required provisions are adhered to. Finally, budgetary estimates have been proposed to support the implementation of the environmental and social management plan.

The ESMF will be included in the project's Manual of Operations. The ESMF outlines mechanisms for:

- Screening of proposed project interventions, identifying potential environmental and social impacts and management of safeguard policies implications;
- Arrangements by the lead ministries and other relevant institutions for implementation and their capacity building;
- Monitoring ESMF measures implementation;
- Community consultations;
- The estimated costs related to the ESMF.
- ESMP template

7.1 The Environmental and Social Screening Process

Environmental and social screening marks the beginning of ESIA or ESMP process for any proposed. The screening should be initiated as early as possible along with the sub-project planning process after the subproject is conceived. The extent of environmental assessment that might be required to be carried out in respect of a proposed subproject will depend on the outcome of the screening process.

The purpose of the preliminary screening is to: (i) rapidly determine whether proposed projects are likely to have potential negative environmental and social impacts; (ii) decide if form EA1 needs to be submitted to EPA; (iii) identify appropriate mitigation measures for activities with adverse impacts; (iv) incorporate mitigation measures into the project design as appropriate; (v) review and approve projects proposals and (vi) monitor environmental and social impacts and concerns during implementation. . The early screening process will also consider the provisions of the RFP for possible land acquisition and livelihood impacts.

MMDA Lead Implementation Teams (LITs) must foremost carry out the preliminary environmental and social screening for each proposed subproject by using the checklist (suggested in **Annex 2**) and liaise with the World Bank and EPA for determination of their significance, assignment of

appropriate environmental category, recommendation of appropriate safeguards instrument that should be prepared for the subproject in order that the project implementation is in compliance with the World Bank safeguards policies and national environmental requirements of the GARID project. If significant impacts are anticipated, the EPA and the Ghana Environmental Assessment (EA) procedures duly followed.

When there are minimal or no impacts (as determined using the checklist), MMDA LITs must consult internally with their Project Implementation Team (PIT) safeguard persons at the respective Ministry and have a confirmation from the World Bank. Once an agreement is reached, the LIT safeguard person may proceed with the minimum regular reporting requirements which will be discussed and agreed with the World Bank prior to commencement of works/action. No subproject requiring preparation of a safeguards instrument should commence until the said safeguards instrument is completed by the Client, approved by the World Bank and EPA, and disclosed publicly in Ghana and on the World Bank external website. .

7.2 Environmental and Social Assessment Procedures to be followed by Projects

The formal environmental approval and permitting processes will be guided by the World Bank safeguard policy OP4.01 which provides guidance on the environmental assessment procedures for WB funded projects. The Ghana EIA procedures (EPA, 1994) and EPA Environmental Assessment Regulation LI 1652 Or 1999 have also established a process to screen and evaluate all developments, undertakings, projects and programmes which have the potential to give rise to significant environmental impacts. The two processes are largely similar and the Ghanaian procedures are therefore given in the following sections and will mostly be statutorily followed by all projects to obtain environmental permits.

Those projects requiring EPA clearance will only commence when an environmental permit has been procured from the EPA. The Agency has provided the list of projects for which ESIA is mandatory. These have been given in the **Annex 3** and are consistent with the World Bank categorization of projects.

The Project will be guided by the EPA Environmental Assessment Regulations 1999 to ensure environmental and social compliance.

AN Outline of Procedures For EPA Environmental Assessment Regulations 1999

Environmental Registration of the Proposed Projects

Projects which have potential for adverse effects on the environment or public health have to be registered with the EPA and an environmental permit obtained. No such project shall commence unless the project is registered with the EPA.

Initial screening/ assessment

This activity in accordance with the EAR 1999 LI1652 and is the responsibility of the EPA.

This activity will help the EPA in determination of appropriate environmental category of the proposed project. The EPA, on receipt of an application from (Form EA1 or Form EA2) the PCU, including such information as may be required; will carry out an initial assessment taking into

consideration factors such as:

- Location, size, and likely output of the undertaking;
- Technology intended to be used;
- Concerns of the general public, if any, and in particular concerns of immediate residents if any; and
- Land use, and other factors of relevance to the particular, undertaking to which the application relates.

Where the Agency is satisfied with an initial screening, it registers the activity which is the subject of the application and issues an environmental permit.

The extent of environmental and social work that might be required of the Client for the subproject prior to implementation will depend on the outcome of the screening process.

The EPA environmental permitting procedure is shown in **Annex 5**. The Agency, within 25 days of receiving the Registration/Application Form will take a decision by placing the project at the appropriate level of environmental assessment. The results will be communicated to the implementing agency (Client) with reasons, which could be any of the following:

- approved or
- is objected to ; or
- requires submission of a preliminary Environmental report; or requires the submission of an environmental and Social Impact statement.

Reporting under L.I. 1652

The Regulations provide for a number of reports by the proponent of an undertaking. These are:

- Screening report;
- Preliminary environmental report;
- Scoping report;
- Environmental Impact Statement; and
- Annual environmental report.

Screening Report

The screening report is prepared at the earliest stages of the EIA process and allows a determination to be made by the Agency about the level of environmental assessment of a particular undertaking.

Preliminary Environmental Report

In some instances, the Agency may come to the conclusion that an activity requires a preliminary environmental report (PER). Where such a decision is arrived at, the applicant would be required to submit a PER. The PER will contain details extending beyond that contained in the initial application. The new application must state specifically the detailed effects of the proposed undertaking on the environment. Where a PER is approved, it is registered, and an environmental permit is issued.

In the event that on receipt of a PER the Agency is satisfied that there will be a significant and adverse impact on the environment, the applicant will be expected to submit an

environmental impact statement (EIS) on the undertaking for assessment of the environmental impact of the proposed undertaking.

Scoping Report

The Regulations require that the EIS shall be outlined in a scoping report. The scoping report sets out the scope or extent of the EIA to be carried out by the applicant and includes draft terms of reference (TOR) which must indicate the essential issues to be addressed in the EIS.

On the acceptance of a scoping report by the Agency, the applicant is informed to submit an EIS based on the scoping report.

Environmental Impact Statement (EIS)

The EIS must address potential direct and indirect impact of the undertaking on the environment at the pre- construction, construction, operation, decommissioning and post-decommissioning phases. Additionally, changes in social, cultural and economic patterns must be dealt with in the EIS.

Annual Environmental Report

A person granted an environmental permit under the Regulations is required to submit an annual environmental report in respect to his undertaking after 18 months from the date of commencement of his operations and thereafter on a 12-monthly basis to the Agency. The EPA is required to define the form and content of the Annual Environmental Report

Public Consultation

Public participation is provided for in the Regulations. These provisions are secured through advertisement of the scoping notice for comments and public hearings.

There is a Technical Review Committee that reviews Environment Impact Statements (EISs) prior to permitting of all undertakings for which EIAs are required. The membership of this committee is constituted on the discretion of the Agency through the use of administrative procedures.

Review and approval of EIA

The proponent submits the final draft EIA to EPA. The report is reviewed by the MMA and by the EPA.

Copies of the EIA are placed at vantage points including the EPA Library, relevant MMA, EPA Regional Offices. EPA serves a 21-day public notice in the national and local newspapers about the EIA publication and its availability for public comments.

Public Hearing and Environmental Permitting Decision (EPD)

Public Hearing

Regulation 17 of the LI 1652 specifies three conditions that must trigger the holding of a public hearing on a project by the Agency. These are:

- Where a notice issued under regulation 16 results in great public reaction to the commencement of the proposed undertaking;
- Where the undertaking will involve the dislocation, relocation or resettlement of communities and
- Where the Agency considers that, the undertaking could have extensive and far-reaching effects on the environment.

Where a public hearing is held, the processing of an application may extend beyond the prescribed timelines required for EPA's actions and decision-making.

Environmental Permitting Decision (EPD)

Where the draft EIA is found acceptable, the proponent is notified to finalize the report and submit eight hard copies and an electronic copy. Following submission to EPA, the proponent shall be issued an Environmental Permit within 15 working days and issue gazette notices.

Where the undertaking is approved, the proponent shall pay processing and permitting fees prior to collection of the permit. The fees are determined based on the Environmental Assessment Fees Regulations, 2002, LI 1703.

Environmental Monitoring

Environmental monitoring aims to ensure compliance with: (i) the measures proposed in the ESMP and the EIA of a sub-project, including mitigation measures, (ii) the commitments of Contractor in connection with the permissions required, (iv) requirements relating to laws and regulations.

Environmental monitoring involves both the construction phase and the operation phase. The monitoring program may allow, if necessary, to reorient the work and possibly improve the course of the construction and implementation of different project components. Monitoring goes hand in hand with the establishment of impacts and proposed measures for prevention, mitigation.

Monitoring is essential to ensure that: (i) the impact predictions are accurate (monitoring effect), (ii) prevention / mitigation can achieve the desired objectives (monitoring effect), (iii) regulations and standards are met (compliance monitoring), (iv) the criteria for use of the environment are respected (inspection and monitoring).

Procedures to be followed by the GARID Project Implementation Unit

The following steps will be followed by the Project to ensure environmental and social compliance. They are guided by the World Bank safeguard policy OP4.01 which provides guidance on the environmental assessment procedures for WB funded projects, and also the Ghana EIA procedures (EPA, 1994) and LI 1652 1999.

Step 1: Environmental Registration of the Project

Every MMDA will designate an Environmental and Social safeguard Officer as part of the Lead Implementation Team (LIT). The appointed/ designated Officer will be directly responsible for carrying out screening all subprojects projects by completing the GARID Environmental and social review form and the relevant EPA Environmental Assessment Registration forms (EA forms) and submitting to the EPA when required in accordance with the Environmental Assessment Regulation 1999.

A sample copy for the screening form is given as **Annex 2** and the EA1 Form is provided in **the Annex 4** and the mitigation measures suggested in this ESMF as well as the checklist used in the screening exercise should assist the MMDA LIT Safeguard Person to complete this Form. For projects for which EIA are mandatory, the MMDA LIT Safeguard officer should register with Form EA1 otherwise Form EA2 should be used.

Step 2: Screening

Upon submission of project registration particulars and information to the EPA, the Agency will undertake physical visit to the proposed project site to conduct an initial environmental assessment. The EPA should be led by the Client. The Agency, within 25 days of receiving the Registration Form will take a decision by placing the project at the appropriate level of environmental assessment. A simplified EPA environmental permitting procedure is shown in **Annex 5**. The results will be communicated to the implementing agency with reasons, which could be any of the following:

- Objection to the project
- No objection to the project (equivalent to World Bank Category C Project)
- Preliminary Environmental Assessment (PEA) will be required (equivalent to World Bank Category B Project)
- Environmental and Social Impact Assessment (ESIA) required (equivalent to World Bank Category B or A Project).

For projects receiving the 'no objection' from the EPA (WB Category C project) and therefore have only minor environmental and social risks, the Project Implementation Units may move to implementation in accordance with pre-approved standards or codes of practices or the pre-approved guidelines for environmental and social management as outlined in the sample ESMP. The GARID PCU should liaise with the World Bank will screening reports and decisions in a timely manner.

Step 3: Conduct environmental and social assessment studies

For Projects for which the decision is the conduct of a PEA (equivalent WB category B project) or and ESIA (WB Category B and A Projects), standalone reports will be prepared. The Ghana EPA statutorily requires an EIA for projects in sensitive areas as listed in **Annex 6**.

The MMDA LIT Safeguard Officer in consultation with the respective ministry Project Implementation Team (PIT) safeguard person, will prepare the Terms of Reference for the ESIA, and follow procurement rules for the recruitment of consultants for the ESIA. The ToR may be prepared using issues identified during the screening exercise and also the registration of the project with the EPA. Also, the impact mitigation measures provided in this ESMF may provide some basis for the

design of the ToR. To facilitate the formulation of the ToR, a template has been prepared and provided in the **Annex 7** of this report. The PCU should have agreement with the World Bank on all TORs.

The ESIA will identify and evaluate potential environmental impacts for the proposed activities, evaluate alternatives, and design mitigation measures. The preparation of the ESIA will be done in consultation with stakeholders right from the TOR consultations to the consultations and disclosure of the ESIA studies as well as the incorporation of the views of stakeholders, including potential Project Affected Persons. Community consultations are critical in preparing a proposal for the activities likely to have impacts on the environment and communities. The community consultations should identify key issues and determine how the concerns of all parties will be addressed in the ESIA. When an ESIA is necessary, the administrative process enacted by the EPA will be followed and executed

Procedures for projects requiring an ESIA

First stage: Preparation of Terms of Reference

The terms of reference will be prepared by the Safeguards Specialist. TOR will be consulted on with stakeholders and concerns incorporated prior to its finalization

Second stage: Selection of consultant

Third stage: Preparation of the ESIA with community consultation

The report will follow the following format:

- Description of the study area
- Description of the subproject
- Discussion and evaluation of alternatives
- Environment description
- Legal and regulatory
- Identifying potential impacts of proposed sub-projects
- Process of public consultations
- Development of mitigation measures and a monitoring plan, including estimates of costs and responsibility for implementation of surveillance and monitoring

Step 4: Review and approval of the ESIA for the project; Publication / Dissemination of ESIA

The MMDA will submit the draft ESIA to EPA and the Worldbank safeguards team. The report will be reviewed by a cross-sectoral National Environmental and Social Impact Assessment Technical Review Committee (ESIA/TRC) made up of representatives of relevant Ministries, Departments and Agencies as determined by the EPA after preliminary review of the pertinent environmental and social issues associated with the project.

The review committee is expected to:

- Assist the Agency in screening/reviewing all Environmental Assessment Applications and Reports (Environmental Impact Statements, Annual Environmental Reports, Environmental Management Plans and other related reports)
- Make recommendations to the Executive Director of the EPA for final decision-making
- Provide technical advice on conduct of assessments and related studies on undertakings and the reports submitted on them;
- Make recommendations on the adequacy of the assessment and any observed gap;
- Advice on the seriousness of such gaps and the risks or otherwise to decisions required to be made recommend whether the undertakings as proposed must be accepted and under what conditions, or not to be accepted and the reasons, as well provide guidance on how any outstanding issue/areas may be satisfactorily addressed.

All ESIA's will also be submitted to the World Bank for review and clearance and also disclosed in-country and on the World Bank website.

Copies of ESIA will be placed at vantage points including the EPA Library, relevant MMDAs, EPA Regional Offices and the sector Ministries. EPA serves a 21-day public notice in the national and local newspapers about the ESIA publication and its availability for public comments.

Step 5: Public Hearing and Environmental Permitting Decision (EPD)

Where a Public Hearing is required, the Project in conjunction with the EPA will organize same. Regulation 17 of the LI 1652 1999 specifies three conditions that must trigger the holding of a public hearing on a project by the Agency. These are:

- Where notice issued under regulation 16 results in great public reaction to the commencement of the proposed undertaking;
- Where the undertaking will involve the dislocation, relocation or resettlement of communities; and
- Where the Agency considers that the undertaking could have extensive and far-reaching effects on the environment.

The outcomes/concerns expressed by the stakeholders at the Public Hearing should be used to finalize the ESIA document.

Where a public hearing is held, the processing of an application may extend beyond the prescribed timelines required for EPA's actions and decision-making.

Environmental Permitting Decision (EPD)

Where the draft ESIA is found acceptable, the MMDA will be notified to finalize the reports and submit eight hard copies and an electronic copy. Following submission to EPA, the MMDA shall be issued an Environmental Permit within 15 working days and issue gazette notices.

Where the undertaking is approved, the MMDA shall pay processing and permitting fees prior to collection of the permit. The fees are determined based on the Environmental Assessment Fees Regulations, 2002, LI 1703.

The following distinctions are important and are provided:

Table 6: Summary of Environmental Screening Process, Environmental Assessment and Responsibilities

No.	Stage	Institutional responsibility	Implementation responsibility
1.	Environmental and Social screening of proposed project interventions to assist in project formulation using checklist	MWH/HSD MSWR/EHSD MICZD/ PPMED MLGRD/PPMED MMDAs	PITs safeguard person/ MMDA LIT safeguard person
2.	Statutory Environmental Registration of Project	MMDA	MMDA LIT
2.	Determination of appropriate environmental assessment level/ category	EPA/World Bank	-
3.	Validation/Approval of simple measures (PER, ESMP)	EPA/WB/	PIT Safeguard person
3.	Implementation of environmental assessment	MMDA	MMDA LIT safeguard officer
3.1	If ESIA is necessary		
3.1a	Preparation of terms of reference	MMDA MWH/HSD MSWR/EHSD MICZD/ PPMED MLGRD/PPMED/ WB for clearance of TOR	PITs safeguard person/ MMDA LIT safeguard person
3.1c	Selection of Consultant	MMDA MWH/HSD MSWR/EHSD MICZD/ PPMED MLGRD/PPMED	MMDA LIT safeguard and procurement/ MDAs Project Implementation Unit (PIU) safeguard and procurement
3.1d	Realization of the EIA, Public Consultation	MMDA/ Consultancy firm/ WB team as observers for consultation	MDAs PIU safeguard specialist/ MMAs Local Implementation Unit (LIU) Safeguard Officer / Procurement Officer
4	EIA Review and Approval	EPA/WB	-

No.	Stage	Institutional responsibility	Implementation responsibility
5.	Public Consultation and disclosure	MMDA/EPA /WB	MMAs LIU safeguard person/Consultant
	Integration of environmental and social management plan issues in the tendering and project implementation,	MMDA	MDA PIU safeguard specialist/ MMA LIU Safeguard Officer / Procurement Officer
6	Preparation of Contractor ESMP (CESMP)	PCU MDAs	PCU, MDA PIUs safeguards persons
7.	Surveillance and monitoring	MWH/HSD MSWR/EHSD MICZD/ PPMED MLGRD/PPMED EPA, MMDA	MDA PIUs safeguard/ MMA LIU safeguard person
8.	Development of monitoring indicators	MMDA	MMDA Safeguard/ PIT Safeguard specialist
9.	Reporting and adherence to EPA permitting conditions	PCU/MDA PIUs	PCU, MDA PIUs safeguards persons

7.3 Technical Specifications and Standards

Technical specifications

The implementing agencies under the respective ministries will be responsible for the development and presentation of clear guidelines for the design and provision of technical specifications and standards to assist the MMDAs to plan for the development projects. For example, the Hydrological Services Department under the Ministry of Works and Housing has standard specifications for the design of drainage facilities which will be used by the Project. The specifications will be adopted and incorporate sustainability and climate and disaster risk adaptation measures to inform the safeguards studies and decision making of the executing MMDA. These will ensure the streamlining of approaches and activities in the beneficiary MMDAs for sustainability. These will include adequate reference to sector schedules and prescribed environmental codes of practice. The MMDAs will further abide by promulgated bylaws to govern developments in their respective areas of jurisdiction.

Environmental guidelines and standards

The EPA has guidelines for the discharge of effluents, air quality emissions, noise levels etc which have legal backing and are sector specific. The Water Resources Commission also has standards regarding activities which will impact on water resources and promotes the national buffer zone policy. These standards and in some cases guidelines are required for the management of pollutant emissions and protection of resources. In situations where standards which have legal backing are

available then these must be followed. Otherwise, national guidelines or the World Bank guidelines could be used.

8 INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION

8.1 Institutional roles and responsibility for the ESMF Implementation

The project will be implemented by Ministry of Works and Housing in close collaboration with the Ministries of Sanitation and Water Resources (MSWR); the Ministry of Inner City and Zongo Development, and the Ministry of Local Government and Rural Development, and the respective beneficiary MMDAs. As described earlier, a Project Coordinating Unit (PCU) will be set up at the MWH to oversee the entire project and Project Implementation Teams (PITs) will work from the respective ministries. The MMDAs will also compose their respective Local Implementation Teams (LITs). All these management teams will have designated safeguard focal persons.

The Project Coordination Unit will oversee all environmental and social due diligence for the GARID projects across all the Ministries and MMDAs.

Therefore, the main institutions implementing the GARID and which will have interest and capacity in environmental and social management include:

- Ministry of Works and Housing/ Hydrological Services Department
- Ministry of Sanitation and Water Resources/ Environmental Health and Sanitation Department
- Ministry of Inner City and Zongo Development/ Project Planning, Monitoring and Evaluation Department
- Ministry of Local Government and Rural Development/ Project Planning, Monitoring and Evaluation Department
- Ministry of Environment, Science, Technology and Innovation/ Environmental Protection Agency (EPA)
- Metropolitan, Municipal and District Assemblies (MMDAs)

Their mandates have already been described in earlier sections of this report. However, their safeguard implementation capacity may be limited and it is expected that the designated safeguard persons within the Project Implementation Units will receive adequate training to be able to sufficiently superintend over the implementation of the environmental and social actions. Specialists will be engaged to support the PIUs.

The MMDAs have been involved in numerous World Bank projects including the GAMA Sanitation and Water Project hence some level of capacity has been developed over the years. However, as a result of competing projects and multiplicity of donors, project requirements vary leading to some implementation challenges. GARID must therefore sustain the capacity building effort at this level.

It is noteworthy also that, for many previous interventions, little attention has been paid to capacity development at the sub- metro and zonal council levels even though these are officials working directly with the communities. On the Local Government Capacity Support Project, the teams at the local level were trained. The PCU/PIUs will leverage on the expertise at the MMA level where available. Refresher training on environmental health and safety, grievance redress mechanisms and

enhance their ability on transparency and stakeholder engagement mechanisms among others to enhance their function. For safeguard awareness to abound in the project communities as means of assuring sustainability, it is essential that safeguard capacity is developed at the sub metro and zonal council levels also. Safeguard focal persons may be designated/ appointed at this sub level and given some training. The ultimate goal will be to raise safeguard champions within the beneficiary communities.

The respective roles and responsibilities of the assigned safeguard persons are summarized below:

PCU Safeguards Specialists

The PCU safeguard specialists will be responsible for:

- Coordination of environmental and social safeguards across all projects
- Leadership across the MDAs, MMDA levels for the implementation of safeguards and giving direction to the entire safeguards process on the project
- Providing guidance and project level information and tools on safeguards for all stakeholders
- Providing leadership and oversight over adequacy of TORs for safeguards consultancy assignments
- Assist to manage the environmental and social safeguard experts (consultants)
- Responsible for coordinating all safeguard activities with the WB, the EPA and implementing agencies, including safeguards reports and disclosures
- Preparation of relevant checklists, guidance notes and manuals in support of the safeguards focal persons at the MMDA level
- Oversee all environmental and social safeguard training and capacity building activities.

Safeguard consultants

The Consultants who will be conversant with the WB safeguard policies and their instruments and application will be hired for the preparation of ESIA studies which require more complex skills and periodically as and when required to support the implementation of the environmental and social safeguards. They will work in collaboration with the safeguard experts/officers at the PCU/PIUs respectively who will take the lead in the preparation of manuals and checklists. The consultants will be conversant with the World Bank safeguards policies, the instruments and their application. Particular attention will be on the safeguards policies triggered by the project. The consultants' level of understanding should be adequate to facilitate training and other capacity related activities on safeguards. The template for the preparation of ToRs to recruit consultants is provided in **Annex 7**.

Project Implementation Team (PIT) safeguards focal persons

The MDA Safeguard Focal Points will

- Supervise the LITs safeguard specialists to ensure that all environmental and social safeguards issues are incorporated into Bid and specifications documents for all sub project types.
- Ensure that safeguards issues are included as part of the training at MMDA level and contractors invited to participate.

- Draft safeguards report based on collated documents and reports from MMDA activities as part of usual reporting on the project.
- Be the first point of contact for the MMDA in case of any challenging issues on project-related safeguards - land, environmental, safety and health and draw the PCU safeguard specialists' attention in case of lack of resolution
- Review safeguards studies including ESIA's which will be prepared by consultants in due course of project implantation
- Complete screening checklists for sub-projects within their respective MMDA in consultation with the safeguards specialist to be based in the PCU
- Perform any other related activities that may be assigned by the PCU safeguard specialists' to whom s/he will report.

Local Implementation Unit (LIU) safeguards focal persons

The MMDA Safeguard Focal Points will

- Ensure that all environmental and social safeguards issues are incorporated into Bid and specifications documents for all sub project types. This will ensure that at the contractor level ESMP and alternative designs which seek to reduce and minimize identified impacts from the ESIA process are incorporated in the bid and specification documents.
- Ensure that contractors and supervising engineers participate in safeguards training programmes
- Draft safeguards report based on his/ her monitoring activities as well as from collated documents and reports from supervising engineers and contractors as part of usual project reporting
- Be the first point of contact for the beneficiary community in case of any challenging issues on project-related safeguards - land, environmental, safety and health and draw the PIT safeguard person's attention in case of lack of resolution
- Collaborate with relevant authorities (chiefs and elders) and other community members and facilitate the implementation of subprojects and implementation of any other safeguards related activity.
- Review safeguards studies including ESIA's which will be prepared by consultants in due course of project implantation
- Complete screening checklists for sub-projects within their respective MMDA in consultation with the safeguards specialist to be based in the PCU
- Perform any other related activities that may be assigned by the PIT Focal Point to whom s/he will report.

8.2 Implementation Plans

The Ministry of Works and Housing (MWH) will serve as the lead government agency for this project. A project coordination unit (secretariat) will manage the project and ensure linkages and coordination with all interventions under the other ministries.

The focal point ministry will work with the Ministry of Sanitation and Water Resources, Ministry of Inner City and Zongo Development and also the Ministry of Local Government and Rural Development, as well as other relevant agencies to ensure smooth implementation and the documentation sharing of lessons learnt.

The main responsibility for implementing the ESMF and the RPF rests with the Safeguards Specialists to be appointed in the PCU and will be supported by, as needed, environmental and social experts who will be recruited by the project. The project implementation teams to be formed at the various ministries will also have their respective safeguards focal persons who will oversee the implementation of all actions to mitigate adverse environmental and social impacts within the respective projects at the MMDAs. They will in turn, supervise the designated safeguard focal persons at the MMDAs to ensure sound management practices at the community level.

8.3 Institutional Strengthening and Capacity Building

Identification of Capacity Needs

The first step in pursuing capacity building will be to identify the capacity needs of the various stakeholders. *Table 7* (overleaf) show the current safeguards staff strength of the four (4) main implementing ministries. The EA/EM activities undertaken by the current staff is presented in *Annex 9.1*.

The major capacity issues has to do with the staffing numbers, skill sets and the availability of and exposure to the use of appropriate modern technologies (including GPS) within the main implementing agencies (MWH, MSWR, MICZD, and MLGRD). The environmental and social safeguards staff of the implementing agencies are grossly inadequate (see Table ?? below), lack the full complement of the variety of skill sets (e.g., Social and Environmental Safeguards Specialists) needed to perform their functions, and are highly under-resourced with respect to the equipment and modern technologies needed to perform their required functions and roles effectively and efficiently.

Table 7: Agency Safeguards Staffing Capacity

Agency	No. of Staff	Years of Safeguards Experience	Previous Safeguards Training	Self Rank Capacity to Perform Safeguards Function (Low = 1, High =5)	Comments
MWH			Yes	4	Not on full-time schedule
		1	Yes		Not on full-time

					schedule
MSWR	4	20	Yes	5	
			Yes		Due to retire this year
		8	Yes	4	
		1	Yes	3	
MICZD	2	13	Yes	4	Not on full-time schedule
		6	Yes	4	Not on full-time schedule
MLGRD	2	10	Yes	3	
		1	Yes	2	

Some additional training would be required and some hand-held equipment such as noise monitors, particulate matter (PM10) monitors and SOx, NOx and CO2 monitors. In addition, a computer-based monitoring system to facilitate rapid tracking of project activities and for quick generation of various kinds of reports will be required.

Training will be categorized along specific thematic areas and targeted at various stakeholders at various levels in the MDAs and MMAs. Where relevant, expertise will be drawn from regulators to inform on key issues. The trainings should be provided in collaboration with the World Bank and EPA. The capacity building will include training workshops, field visits and production of guidance reports and tools. The following training programmes are recommended:

Table 87: Training modules and proposed participants

Module No	Training module content	Participants	Training Entity	Duration
1.	<ul style="list-style-type: none"> World Bank safeguards requirements for the GARID project, roles and responsibilities World Bank Safeguard policies of OP 4.01 OP 4.04, OP 4.11 and OP 4.12; Ghana EPA 	PCU Safeguard Officer, Safeguards Specialists, MDAs PIU Safeguard Persons, MMA LIU Safeguard Focal Persons PCU Staff	World Bank Safeguards Specialist World Bank Safeguards Specialist World Bank Safeguards	6No. 3-day sessions over 2 year period 8No. 2-day sessions over 2 year period

	Environmental Assessment Regulations <ul style="list-style-type: none"> GARID ESMF/ RPF 	MDAs PIU Staff MMDAs LIU Staff	specialist/EPA	2No. 2-day sessions At MDA/MMA level – 2-day session for each entity
2.	<ul style="list-style-type: none"> Screening Checklist, Completion of EA Registration Forms 	MDAs safeguard persons, MMDA safeguard focal persons	World Bank Safeguards specialist/EPA	5No. 1-Day session
3.	<ul style="list-style-type: none"> Preparation of Environmental and Social Management Plans Grievance redress registration and resolution forms 	MMDA safeguard focal persons, Contractors, Supervising engineers, Sub metro and Zonal Council directors, Community safeguard champions	World Bank Safeguards specialist/EPA	Several sessions over the duration of the project as and when required
4.	<ul style="list-style-type: none"> Practical course on land acquisition, resettlement and social sustainability 	Key safeguards experts at PCU/PIU	Groningen University, Netherlands	2 weeks

The main recipients for training will be the MDA and MMDA safeguard focal persons. We expect the training to filter down to community level through the Sub metro and Zonal Council officers. These latter officers will have the primary responsibility to involve the communities in the interventions and will therefore require some training to be effective. Their focus will be on the Module 4 where they will be exposed to environmental and social management plans prepared for the sub projects. The communities will be encouraged to be adequately represented at this training sessions as well.

The training may be organized in collaboration with the regional EPA and will be in the form of seminars and workshops.

The possibility of decentralizing the training sessions will be explored so that MDA safeguard persons may have sessions specific to their activities. Large numbers of participants at specific training sessions will be avoided.

The implementation of the training and awareness creation will be timely and therefore planned during the early stages of the Program to ensure that all actors are ready when the sub- projects roll out. Periodically, during the execution of the projects the safeguard persons may congregate to

share ideas and learn lessons from each other. It is expected that participants would at the end of the training be in a position to deal more effectively with difficult environmental and social challenges that they may come across.

Production of guidelines and tools

The ESMF provides guidelines to mitigate adverse environmental and social impacts arising out project implementation. Training manuals and checklists are required to assist safeguard focal points to carry out their functions. Such checklist and manuals will include those designed for environmental and social screening of projects, see **Annex 8**.

8.4 Budgetary provisions

The awareness creation, capacity improvement and training workshops as well as some logistic support expenses for key stakeholders involved in the implementation of proposed interventions is estimated at **US\$ 512,500** over the 5- year project life as explained in the **Table 9** below: The costs of hiring of consultants for preparation of subproject ESIAs/ESMPs/PERs should be determined later and included in the budgets of subprojects when the quantity of the safeguards instruments to be prepared become clearer.

Table 98: Estimated budget to implement ESMF

No	Activity	Description	Annual cost, US\$	Total Cost, US\$
2.	<u>Training</u>			
	2a. Awareness creation and Capacity building for PCU and MDAs	Training workshop/ seminars on Module 1	10,000	20,000
	2b. Capacity building for MMDA safeguard persons	Training workshop/ seminars on Module 1, 2 and 3	20,000	100,000
	2c. Awareness creation and capacity building for sub metro and zonal council members and selected members of community	Module 4 and Community meetings and training	4,500 per MMDA @ 7no. <u>31,500</u>	157,500
3.	Guidance and tools	Guidance Documents, Checklists, Forms, TORs, Technical Planning Tips	10,000	50,000
4.	Communications	Radio, TV discussions, Newspaper adverts on issues relating to ESMF/ RPF	5,000	25,000
5.	Transport, per diem, registration fees (participation in training)	Specific meeting and workshop registration fees	20,000	100,000
6.	Monitoring and Evaluation	Safeguards component for M&E	12,000	60,000
	TOTAL			512,500

5.0 MONITORING AND EVALUATION

Monitoring plans will be developed to track safeguard progress at both the ESMF and sub-project activity level. The proposed plans are presented in the **Table 9**. The table confirms the verifiable indicators as well as responsibilities for the various monitoring actions.

The monitoring issues at the ESMF level include confirmation of the dissemination of both ESMF and RPF documents as well as capacity building and training activities. At the sub-project activity level, this will encompass instituting monitoring actions to, for example, confirm the Screening of projects, Preparation of the ESIA reports, Acquisition of environmental Permits, disclosure of safeguards instruments at national and global levels, etc.

Table 9: ESMF and RPF monitoring indicators and responsibilities

No		Monitoring level	Monitoring Issue	Verifiable indicators	Responsibility
1.		ESMF level	Adequate dissemination of ESMF and RPF to stakeholders	Record of consultations and meetings	PCU, MDAs, MMDAs Consultants
				Workshop reports	
			Capacity building and training programmes	Training reports	PCU, MDAs, MMDAs Consultants
2.		Sub-project activity level	Screening of sub project	Checklist completed	MMDAs, MDAs
			Completion of EA1 & EA2 forms	Completed EA1 Form & EA 2 Form submitted to the EPA	MMDAs, MDAs, EPA
			Adequate mitigation measures provided to manage adverse impacts	EIA/ESMPs prepared	MMDAs, MDAs, PCU, EPA
			Project satisfies statutory provisions EPA Act 1994 (Act 490) LI 1652 1999	EPA Permit for project	MMDAs, MDAs, PCU, EPA
			Post project monitoring and evaluation	Monitoring reports, annual	PCU, MMDAs, MDAs, EPA

				environmental reports	
--	--	--	--	-----------------------	--

Environmental monitoring and monitoring indicators

Monitoring of environmental and social issues will form an essential part of activities to be conducted under the GARID project. Oversight of the environmental monitoring be ensured by the Client through the MMAs, safeguards specialists on the project, supervising engineers, contractors and consultants if necessary. Environmental and social monitoring will aim to ensure compliance with: (i) the measures proposed in the ESIA and ESMP of subprojects, including mitigation measures (ii) commitments of contractors in connection with environmental and other permissions required under the subproject, and (iii) requirements relating to laws and regulations.

Monitoring measures will focus on key indicators to be defined considering both the positive and negative impacts of the subprojects. The monitoring indicators will be parameters which will provide quantitative and / or qualitative information on the impact. The choice of indicators will be guided by the characteristics of relevance, reliability, usefulness and measurability.

A list of indicators is proposed in Table 5-2 as guidelines for accessing effectiveness of mitigation measures of GARID activities and best practice in implementation of subproject activities. During preparation of subproject specific ESIA and ESMP, it will be ensured that monitoring plans are prepared which encompasses clear and definitive parameters to be monitored for each subproject.

Environmental monitoring plan

The objective of the monitoring plan is to establish appropriate criteria to verify the predicted impact of the subproject, and to ensure that any unforeseen impacts are detected and the mitigation adjusted where needed at an early stage. It is expected that the proposed GARID project will lead to reduction in flood risks and improvement in waste management, reduced rate of flood related loss of lives and property, improved health and social development and poverty reduction. The plan will ensure that mitigation measures are implemented during rehabilitation, construction, upgrading and maintenance, among others. Specific objectives of the monitoring plan are to:

- Check the effectiveness of recommended mitigation measures;
- Demonstrate that sub-project activities are carried out in accordance with the prescribed mitigation measures and existing regulatory procedures; and
- Provide early warning signals whenever an impact indicator approaches a critical level.

Environmental and social monitoring will involve continuous monitoring, and supervision, therefore support provided in the budget for subprojects is needed for monitoring to be conducted effectively.

9 CONSULTATIONS, ESMF DISCLOSURE AND GRIEVANCE MECHANISM

9.1 Stakeholder consultations

The ESMF preparation included stakeholder consultations. Key project stakeholders were identified for consultations and these included Government Ministries, State Agencies/ Organisations/ and Departments, Project offices, Non-governmental organizations and local communities

Meetings were held with key officials and opinion leaders to gauge level of awareness and involvement with the project, concerns of project implementation, and to obtain relevant documents or baseline information. The consultations also served to gather information on the mandates and permitting requirements to inform the development of the Projects.

The list of stakeholders contacted for the two sets of consultations undertaken and key issues discussed are summarized in **Annex 9**. A report on safeguard TOR consultation meetings held in December 2017 is also provided in the **Annex 9.1**.

9.2 ESMF Disclosure

The World Bank policies require that environmental reports for projects are made available to project affected groups, local NGOs, and the public at large. Public disclosure of ESIA documents or environmental reports is also a requirement of the Ghana ESIA procedures. MDAs, MMDAs and EPA will make copies of the ESMF available in selected public places as required by law for information and comments. Public notice in the media will serve that purpose.

The notification will be done through newspaper advertisements and provide:

- a brief description of the Project;
- a list of venues where the ESMF report is on display and available for viewing;
- duration of the display period; and

contact information for comments. The EPA will assist to select display venues upon consultation with MWH.

Following the disclosure of the ESMF in-country, the World Bank will also disclose the ESMF at their website for global attention.

9.3 Grievance Redress

The World Bank is committed to enhancing opportunities for grievance redress, collaborative problem solving, and alternative dispute resolution on the projects it supports. Effectively addressing grievances from people impacted by World Bank projects is a core component of managing operational risk. Grievance redress mechanisms (GRMs) can be an effective tool for early identification, assessment, and resolution of complaints on projects. Understanding when and how a GRM may improve project outcomes can help both project teams and beneficiaries improve results.

The Bank is supporting more effective approaches to problem solving to help strengthen its performance and development outcomes. This strengthened corporate approach focuses on a preventive approach to identify, track and resolve grievances early; and offering lower-cost, rapid citizen redress at the project and country level through mediation, facilitation or other problem-solving processes where it is most needed.

The approach proposes three interlinked steps: (i) a risk-based assessment of potential grievances, disputes or conflicts that may arise during project preparation and implementation; (ii) identification of the client's existing capacity for grievance redress; and (iii) an action plan that identifies priority areas for strengthening grievance capacity, or if necessary, establishing new mechanisms at the project level. Where applicable, dedicated resources should be allocated for realization of the action plan.

General grievance/ disputes

Grievances and disputes may arise due to one or more of the following situations:

- Disagreement on land or property boundaries;
- Disagreement on plot/property valuation and valuation rates applied;
- Mistakes in inventorying or valuing properties;
- Disputed ownership of a given asset (two or more people claiming ownership of an affected property);
- Successions, divorces, and other family issues resulting in disputed ownership or disputed shares between inheritors or family members;
- Disagreement on resettlement package (e.g. location of resettlement site not being suitable to them, proposed housing or resettlement plot characteristics/agricultural potential not adequate or suitable);
- Disputed ownership of businesses and business-related assets (e.g. owner and operator of a business may be distinct individuals, which gives rise to disputes in the event of compensation).

Objective

The objectives of the grievance process are to

- Provide affected people with avenues for making a complaint or resolving any dispute that may arise during the course of the implementation of GARID actions or projects;
- Ensure that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants; and
- Avoid the need to resort to judicial proceedings.

Court cases are known to be cumbersome and take a long time before settlements are reached and usually one party is still not satisfied. It is therefore proposed to adopt a simple procedure for affected persons to be able to follow easily, and which will provide aggrieved people with an avenue for amicable settlement without necessarily opening a Court case.

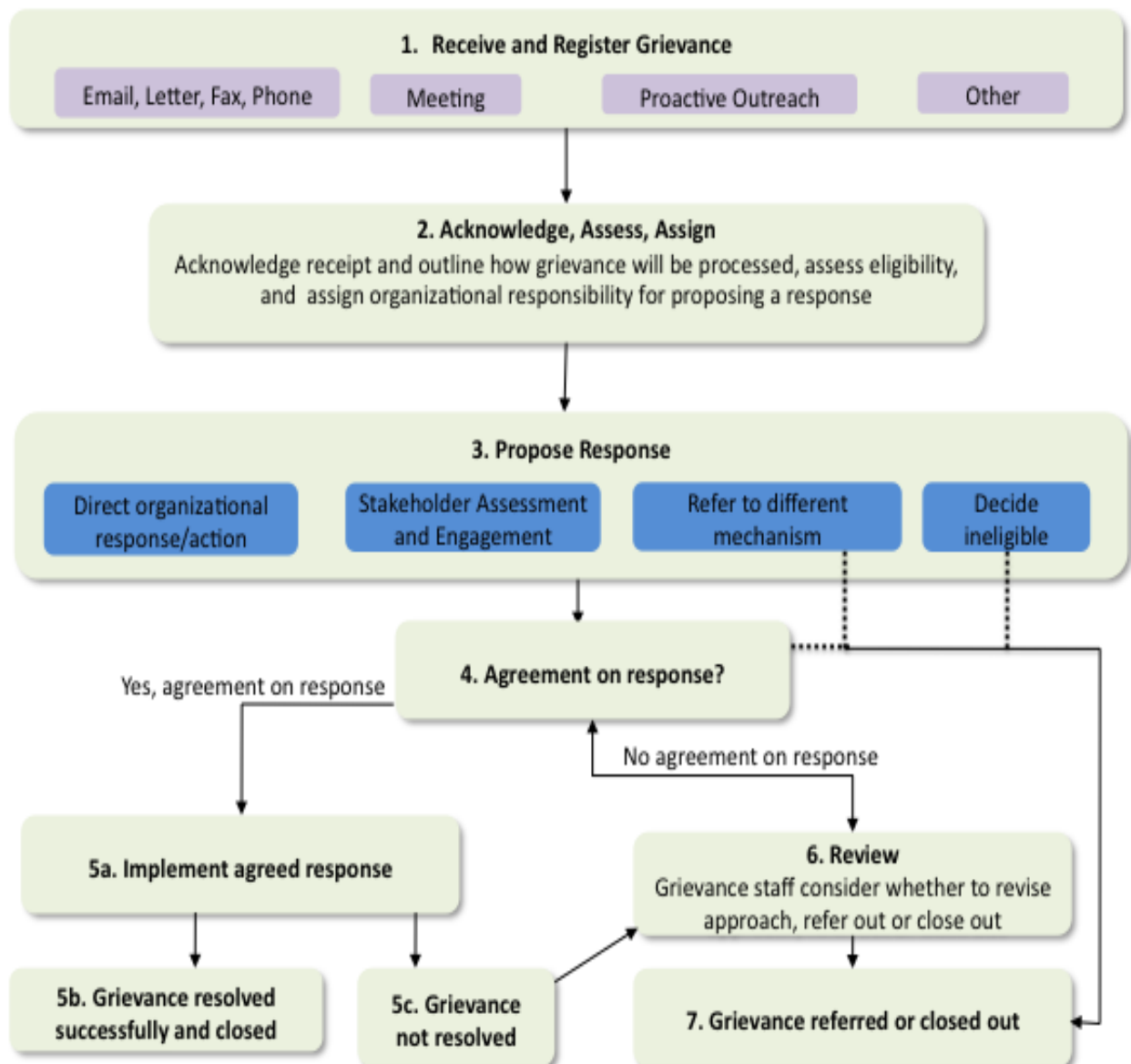
Proposed grievance management and redress mechanism:

As a first option, the ESMF proposes amicable settlement/ mediation.

In compensation and resettlement operations, it often appears that many grievances derive from misunderstandings of project policy and procedures, land/asset valuations, property

demarcations and boundaries among other as mention above, which can usually be solved through adequate mediation using customary rules and some mediation. This is why a first instance of dispute handling will be set up with the aim of settling disputes amicably.

A Dispute Resolution Mechanism (DRM) applied successfully in other sectors which is applicable to the GARID is adopted and presented below:



Source: Proposed DRM model for REDD+ presented at the SESA Workshop in Kumasi-Ghana, July 2014

The proposed DRM recommends four key steps as follows:

- Receive and Register grievances or complaints;
- Acknowledge, Assess and Assign (Acknowledge receipt of grievance, outline how grievance will be processed, assess eligibility and assign responsibility)

- Propose Response
- Agreement on Response
 - If agreement is reached, implement agreement
 - If agreement is not reached, review case and if no agreement is reached under the review process, then the case can be referred to the law courts.

The proposed DRM may consider various levels of institutional arrangements in addressing the disputes/grievance and these include:

- Options 1: Resolve disputes/ grievance within
 - Community level (involving the Sub metro/ Zonal councils)
 - MMDA level (Lead Implementation Teams)
 - National level (Project Implementation Teams)
- Option 2: refer to outside bodies
 - Use or delegate functions to Alternative Dispute Resolution (ADR) centres

Details of the grievance resolution process, institutional arrangements, composition, and capacity needs requirements for all the levels (community, district, national) are all provided in the RPF which may be a useful document for addressing grievances and disputes under the GARID project.

Dissatisfaction and alternative actions

Courts of law will be a “last resort” option, which in principle should only be triggered where first instance amicable mechanisms and review processes have failed to settle the grievance/dispute. However, the Constitution allows any aggrieved person the right of access to Court of law.

Documentation and tracing

Annex 10 presents a template form for the grievance reporting and resolution. The Grievance Redress Management team at each level (i.e. community, district or national) will file the completed form (as shown in **Annex 10**) appropriately as part of data keeping /documentation and for future reference to confirm resolution of grievance. It is also advised that photocopies of these documented resolved cases be collated on a quarterly basis into a database held at the MMDAs and MDAs.

Financing

The entire GRM process will be financed by the Ministry of Works and Housing in consultation with the other participating sector ministries.

Recommended grievance redress time frame

The table below presents recommended timeframes for addressing grievance or disputes related to resettlement and compensation. It is envisaged that resettlement/ compensation disputes could be resolved at the community or MMDA levels.

Table 10 Suggested time frame

Step	Process	Time frame
1	Receive and register grievance	within 5 Days
2	Acknowledge, Assess grievance and assign responsibility	within 14 Days
3	Development of response	within 14 Days
4	Implementation of response if agreement is reached	within 1 Month
5	Close grievance	within 7 Days
6	Initiate grievance review process if no agreement is reached at the first instance	within 1 Month
7	Implement review recommendation and close grievance	within 2 Months
8	Grievance taken to court by complainant	-

10 CONCLUSION

The project seeks to address urgent sanitation challenges in the Odaw basin which are linked to the perennial flooding problems faced by many communities in the residing MMDAs. The structural works may impose significant environmental and social impacts which have been identified in this report. Some mitigation measures have been suggested to address undesired situations.

The responsibility for managing these mitigating measures have been described and the ultimate responsibility will rest on the MWH which is the coordinating ministry and will host the Project Coordinating Unit (PCU). The capacity to implement safeguard actions may be lacking and a training programme has been suggested over the project life cycle. Key safeguard persons will come from the respective MDAs and MMDAs.

It is suggested that in order for the community to appreciate and benefit greatly from these safeguard actions, the respective sub metro and zonal council units who are most in contact with the communities should be involved in the process and given some training too.

ANNEXES

Annex 1:	Description of some policies and legislation affecting the project
Annex 2:	Screening checklist
Annex 3:	EPA list of EIA mandatory activities
Annex 4:	EPA EA1 form
Annex 5:	Flowchart of the EIA process
Annex 6:	EPA designated sensitive sites
Annex 7:	TOR for recruitment of consultants
Annex 8:	Monitoring checklist
Annex 8.1	Monthly reporting format
Annex 9:	Stakeholder Consultations
Annex 9.1	Stakeholder Consultations: EMSF ToR preparation report
Annex 10:	Grievance Reporting and Resolution Form
Annex 11:	Pictures of some field conditions
Annex 12	General environmental management conditions for construction contracts
Annex 13:	Chance Find Procedure

ANNEX 1: DESCRIPTION OF SOME POLICIES AND LEGISLATION AFFECTING THE PROJECT

	<p>The National Environment Policy (2013)</p> <p>The Ghana National Environmental Policy was formulated in 1995 and revised in 2013. The ultimate aim of the National Environmental Policy of Ghana is to improve the surroundings, living conditions and the quality of life of the entire citizenry, both present and future. It seeks to promote sustainable development through ensuring a balance between economic development and natural resource conservation. The policy thus makes a high quality environment a key element supporting the country's economic and social development.</p> <p>The National Environmental Sanitation Policy dated April 2010</p> <p>The revised environmental sanitation policy seeks to refocus the priorities of the sector, so it is forward looking and effectively embraces the challenges of changing life-styles associated with modernization and improving wealth status. The policy lays the basis for developing a systematic approach and framework for identifying and harnessing resources for value-for-money (economy, effectiveness and efficiency) services to all.</p> <p>National Health Policy (2007)</p> <p>The National Health Policy document which aims at creating wealth through health, among other things places emphasis on improvements in personal hygiene, immunisation of mothers and children. The National Health Policy also argues that a healthy population could only be achieved if there were improvements in environmental hygiene and sanitation, proper housing and town planning, provision of safe water, safe food and nutrition and encouragement of regular physical exercise.</p> <p>Riparian Buffer Zone Policy, 2011</p> <p>The riparian buffer zone policy identifies encroachment of watercourses and wetlands as a major cause of flooding in Ghana. To remedy the situation, the policy sets out "to preserve or establish green spaces as riparian buffers along waterways in areas that are practically difficult for regeneration and reforestation of riparian vegetation as more</p>

	<p>efficient ways of preventing drinking water contamination and flooding”. Measures outlined in the policy to support flood abatement are provision of minimum standards for delineating reservations for various types of water bodies, enforcement of a no development zones around water bodies and removal of unauthorised structures in reservations around water bodies.</p> <p>The policy seeks to harmonize policies and laws from other sectors in respect to buffer zones but some of its proposals actually conflict with existing planning standards and legislations. For example, the 60-metre buffer along major rivers stipulated in the Riparian Buffer Zone Policy conflicts with the 30-metre standard set in the National Building Regulations (L.I. 1630, 1996).</p> <p>National Urban Policy Framework and Action Plan, 2012</p> <p>The goal of the National Urban Policy (NUP) is “to promote a sustainable, spatially integrated and orderly development of urban settlements with adequate housing, infrastructure and services, efficient institutions, and a sound living and working environment for all people to support the rapid socioeconomic development of Ghana. The policy identifies choked drains and frequent flooding as part of the key sources of environmental deterioration. The initiatives to achieve Objective 4: “Improving environmental quality of urban life”, includes to “Develop and implement a systematic programme of flood control measures in urban communities (Initiative 4.6)”. The key activities proposed in the Action Plan for Initiative 4.6 are as follows:</p> <ul style="list-style-type: none"> • 4.6.1 Review existing flood control and management situation and develop, as necessary, drainage/flood control management plans for cities and towns • 4.6.2 Monitor, evaluate and revise plans on a regular basis • 4.6.3 Prepare a technical manual on urban drainage schemes to guide MMDAs • 4.6.4 Institute regular inspection and maintenance of drains; and enforce strict land use controls to prevent building encroachments on drainage channels and nature reserves • 4.6.5 Strengthen the technical capacities of MMDAs for drainage planning, development and management; and flood disaster prevention, preparedness and management
--	--

	<p>National Water Policy</p> <p>The National Water Policy was formulated in 2007 within the context of Growth and Poverty Reduction Strategy (GPRS II), New Partnership for Africa’s Development (NEPAD) and the Millennium Development Goals (MDGs). The policy objective is to “promote an efficient and effective management system and environmentally sound development of all water resources in Ghana.” (Government of Ghana, 2007:12). The highlight of the document is the recognition that water resources have competitive and conflicting uses and is organised around three themes namely water resources management, urban water supply and community water and sanitation.</p> <p>The water resources management theme discusses issues relating to flood abatement under focal areas 1 and 6 that cover integrated water resource management and climate change/variability respectively. In both focal areas, there is an acknowledgement that water resources are finite and vulnerable given its multiple uses. The plan recognises the need to integrate water resources planning with land use planning activities and adopt river basins as planning units. Finally, water resources were to be protected from human activities and river basin management was to be integrated with coastal zone and wetlands management. These sections also make statements about the threat posed by extreme weather events, notably flooding.</p>
	<p>The Constitution of Ghana and the Protection of Individual Property</p> <p><u>Displacement of people</u></p> <p>The Project has taken note of Clause 3 of Article 20, which states that:</p> <p>“Where a compulsory acquisition or possession of land effected by the State in accordance with clause (1) of this article involves displacement of any inhabitants, the State shall resettle the displaced inhabitants on suitable alternative land with due regard for their economic well-being and social and cultural values.”</p> <p>Article 20 of the 1992 Constitution of Ghana provides for the protection from deprivation of property unless such acquisition is made in the interest of defence, public safety, public order, public morality, town and country planning, or the development or utilisation of property to promote public interest.</p>

	<p>Under the same Article 20 of the Constitution, such compulsory acquisition of property by the State should be made under a law which makes provision for prompt payment of fair and adequate compensation as well as a right of access to a High Court by any person who has interest in or right over the property for the determination of his interest or right and the amount of compensation to which he is entitled.</p> <p>The State Lands Act, 1962</p> <p>The State Lands Act, 1962 (Act 125) vests in the President of the Republic the authority to acquire land for the public interest via an executive instrument. In addition, the State Lands Act, 1962, details the different elements to be taken into consideration when calculating compensation and these include:</p> <ul style="list-style-type: none"> • “Cost of disturbance” means the reasonable expenses incidental to any necessary change of residence or place of business by any person having a right or interest in the land; • “Market value” means the sum of money which the land might have been expected to realise if sold in the open market by a willing seller or to a willing buyer, • “Replacement value” means the value of the land where there is no demand or market for the land by reason of the situation or of the purpose for which the land was devoted at the time of the declaration made under section 1 of this Act, and shall be the amount required for reasonable re-instatement equivalent to the condition of the land at the date of the said declaration; and • “Other damage” means damage sustained by any person having a right or interest in the land or in adjoining land, by reason of severance from or injurious affection to any adjoining land. <p>The Lands (Statutory Wayleaves) Act, 1963</p> <p>The Lands (Statutory Wayleaves) Act, 1963 (Act 186) details the process involved in occupation of land for the purpose of the construction, installation and maintenance of works of public utility, and for the creation of right-of-ways for such works. The key elements of this Act include the following:</p> <ul style="list-style-type: none"> • The owner/occupier of the land must be formally notified at least a week in advance of the intent to enter, and be given at least 24 hours notice before actual entry;
--	---

	<ul style="list-style-type: none"> • Any damage due to entry must be compensated in accord with the procedures established by the Minister unless the land is restored or replaced; • In the case of highways, no compensation shall be paid, unless the land taken is more than one fifth of the total holdings of an affected person; • Where a right of way must be established in the public interest, the President may declare the land to be subject to such statutory wayleave; and • On publication of a wayleave instrument specifying the area required, and without further assurance, the land shall be deemed to be subject to wayleave. Compensation is then determined and paid, with the right of appeal to a Tribunal established by the President, in parallel with the Lands Act, 1962. <p>Lands Commission Act 2008, Act 767</p> <p>The Lands Commission Act 2008 re-establishes the Lands Commission to integrate the operations of public service land institutions in order to secure effective and efficient land administration to provide for related matters. The objectives of the Commission include among others to:</p> <ul style="list-style-type: none"> • Promote the judicious use of land by the society and ensure that land use is in accordance with sustainable management principles and the maintenance of a sound eco-system; and • Ensure that land development is effected in conformity with the nation's development goals. <p>Environmental Protection Agency Act 1994, Act 490</p> <p>The Environmental Protection Agency Act 1994 (Act 490) gave mandate to the Agency to ensure compliance of all investments and undertakings with laid down Environmental Assessment (EA) procedures in the planning and execution of development projects, including compliance in respect of existing ones.</p> <p>Environmental Assessment Regulations 1999, LI 1652</p> <p>The Environmental Assessment Regulations 1999 (LI 1652) enjoins any proponent or person to register an undertaking with the Agency and obtain an Environmental Permit prior to commencement of the project.</p>
--	---

	<p>Fees and Charges (Amendment) Instrument 2015 (LI 2228)</p> <p>The Fees and Charges (Amendment) Instrument 2015 (L.I. 2228) replaces the Fees and Charges (Amendment) Instrument, 2014 (LI 2216), and gives regulation to the fees and charges (Miscellaneous Provision) Act 2009, Act 793. The law provides a comprehensive rates, fees and charges collectable by Ministries, Department and Agencies (MDAs) for goods and services delivered to the public.</p> <p>Water Resources Commission Act 1996, Act 522</p> <p>The Water Resources Commission Act 1996 (Act 522) establishes and mandates the Water Resources Commission as the sole agent responsible for the regulation and management and the utilisation of water resources and for the co-ordination of any policy in relation to them. Section 13 prohibits the use of water (divert, dam, store, abstract or use water resources or construct or maintain any works for the use of water resources) without authority. The Act states under Section 24 that any person who pollutes or fouls a water resource beyond the level that the EPA may prescribe, commits an offence and is liable on conviction to a fine or a term of imprisonment or both.</p> <p>Local Government Act, 1993 Act 462</p> <p>This Act establishes and regulates the local government system and gives authority to the Regional Coordinating Council (RCC) and the District Assembly to exercise political and administrative power in the Regions and District, provide guidance, give direction to, and supervise all other administrative authorities in the regions and district respectively. The Assembly is mandated to initiate programmes for the development of basic infrastructure and provide municipal works and services as well as being responsible for the development, improvement and management of human settlements and the environment in the district.</p> <p>The Labour Act, 2003 (Act 651)</p> <p>Section 118(1) of the Labour Act 2003 (Act 651) stipulates that it is the duty of an employer to ensure that every worker employed works under satisfactory, safe and healthy conditions. Act 651 contains a number of specific provisions relating to an employer's duty to its workers. These include providing and maintaining "at the workplace, plant and system of work that are safe and without risk to health" and taking "steps to prevent contamination of the</p>
--	--

	<p>workplaces by, and protect the workers from, toxic gases, noxious substances, vapours, dust, fumes, mists and other substances or materials likely to cause risk to safety or health". A worker is required to report situations that he believes may pose "an imminent and serious danger to his or her life, safety or health".</p> <p>Workmen's Compensation Law, 1987, PNDCL 187</p> <p>It is to provide for the payment of compensation to workmen for personal injuries caused by accidents arising out and in the course of their employment. The tenets of the law places a large share of the burden of supporting workers injured at the workplace on the shoulders of the employers.</p>

ANNEX 2: ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST

1. Project Information: Name and Contact Details:			
Project Name	Location: (region/district/village)		
	If other, explain:		
MMDA safeguard officer			
Name of reviewer:		Date of screening:	

Subproject Details: Attach location map (longitude – latitude coordinates (GPS reading) if available):	
Type of activity: <i>What will be done, who will do it, what are the objectives and outcomes</i>	
Estimated Cost:	
Proposed Date of Commencement of Work:	
Expected Completion of Work	
Technical Drawing/Specifications Reviewed:	Yes/No – refer to Application Portfolio

2. Physical Data:	Comments
Subproject Site area in ha	
Extension of or changes to existing land use	
Any existing property?	
Any plans for construction, movement of earth, changes in land cover	

3. Preliminary Environmental Information:	Yes/No	Refer to RPF	Specify/ Provide Comments
Is there adjacent/nearby critical natural habitat?			
Are there activities at the project site?			
Is there activity adjacent to project site?			
What is the land currently being used for? (e.g. agriculture, gardening, etc.)			List the key resources.

Will the proposed activities have any impact on any ecosystem services, biodiversity issues or natural habitats?			
Will there be restrictions or loss of access to public facilities or resources?		✓	
Will there be water resource impacts?			
Will there be vegetation and soil impacts?			
Will the air quality or noise impacts?			
Are there any new or changing river basin management planning or activities?			
Any cultural heritage/sacred sites in project area?		✓	

4. Preliminary Social and Land Information:	Yes/No	Refer to RPF	Specify/ Provide Comments
Has there been litigation or complaints of any environmental nature directed against the proponent or subproject?		✓	
Will the subproject require the acquisition of land?			
What is the status of the land holding required by the project (customary, lease, community lands, etc.)?		✓	
Is there evidence of land tenure status of land owners and/or occupants (affidavit, other		✓	
Are there outstanding land disputes?		✓	
Has there been proper consultation with stakeholders?		✓	
Is there a grievance process identified for PAPs and is this easily accessible to these groups/individuals?		✓	
Will there be any changes to livelihoods?		✓	
What are the main issues associated with community benefits?		✓	
Will any restoration or compensation be required with Affected persons?		✓	

5. Impact identification and classification:

When considering the location of a subproject, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate or manage potential effects. The following table should be used as a reference.

Issues	Site Sensitivity			Rating (L,M,H)
	Low	Medium	High	
Natural habitats	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present; within declared protected areas	If High Refer to Annex 3.1 and Contact Regional EPA
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Medium intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important	If High Refer to Annex 3.1 and Contact Regional EPA
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/ erosion problems; no known flood risks	Medium slopes; some erosion potential; medium risks from floods	Mountainous terrain; steep slopes; unstable soils; high erosion potential; flood risks	If High Refer to Annex 3.1 and Contact Regional EPA
Land Tenure	No conflicts, disagreements around use of land	Process of land regularization and rights to natural resources being worked out with clear communication and grievance process in place	Land conflicts historically unresolved, community/ persons being evicted, settlers losing rights and no transparency or grievance redress available	If Medium or High Refer to RPF

Summary of Site Sensitivity (Rate as Low/Medium/High for the site and provide comments)					
Site	Natural habitats	Water quality and water resource availability and use	Natural hazards vulnerability, floods, soil stability/ erosion	Land Tenure	Comments

6. E & S assessment comments based on site visit (use additional sheet and attach if necessary):

Summary Observations

Potential Environmental and Social Issues That Require Referral to EPA or Using EA1 Form

	Benchmark and Issues	Impact description	Yes	No	Remark
1.	Statutory provisions	Is the proposed in a flood plain?			If yes, proceed with EA1 Form
2.	Statutory provisions (see <i>Natural Habitat Issues in Checklist</i>)	Are there any ecologically sensitive/ critical areas within the proposed project area			If yes, contact regional EPA
3.	Protected areas and wildlife	Will project activities potentially impact natural habitats or critical wildlife species			If yes, proceed with EA1 form
4.	Biodiversity loss	Will land use change or vegetation clearance lead to loss of exceptional flora/ fauna			If yes, proceed with EA1 form
5.	Water pollution	1. Is there a local stream close to the project site? 2. Does it flow all year round? 3. How long does it take to walk to this stream 4. Do you think any project activity will affect this stream			If 4 is yes, proceed with EA1 form
6.	Soil erosion	Are there steep slopes in the project area? Can you easily walk on the slopes without falling			If yes, proceed with EA1 form

7. Impact Identification and Mitigation (use additional sheet and attach if necessary)	
Impact/Risk	ESMF Mitigation Options & Others

Determination of environmental category based on findings of the screening: A ____ B ____ C

A
B
C

Requires an EIA/ESMP

Requires preparation of additional E&S information to support ESMF

Does not require further env or social due diligence – Refer to ESMF

Prepared by:

ANNEX 3: UNDERTAKING REQUIRING REGISTRATION AND ENVIRONMENTAL PERMIT (EPA LI 1652 (1999))

SECTOR	Sub sector	Description
AGRICULTURE	Community Pastures	Involving the clearing of land greater than 40 ha Involving the clearing of land located in an environmentally sensitive area
	Fruit and other vegetable farms	Management areas: Involving the clearing of land greater than 40 ha Involving the clearing of land located in an environmentally sensitive area
FISHING AND TRAPPING	Fishing	a. fish or shell fish farming in salt water, brackish water or fresh water, where the proposal includes the construction of shore-based facilities other than wharves; b. permanent traps or weir fisheries, salt water.
	Services incidental to fishing	Fish or shellfish breeding and propagating services, or fish or shellfish hatchery services, where the proposal includes the construction of shore based facilities other than wharves.
LOGGING AND FORESTRY	Logging	Management of forested land for the primary purpose of harvesting timber in a contract area.
	Forestry services	a. application of pesticides; b. introduction of exotic species of animals, plants or microbial agents.
MINING	Metal mines Non metal mines	-
CRUDE OIL AND NATURAL GAS	Crude oil or petroleum production facilities Natural gas production facilities	
QUARRIES AND SAND PITS	Stone quarries	Where the total area is greater than 10ha, OR Where any portion is to be located within an environmentally portioned area
	Sand and gravel pit	a. where the total area is greater than 10 hectares, or b. where any portion is to be located within an environmentally sensitive area.
FOOD	Meat and poultry products	a. abattoirs; b. meat, fat or oil processing facilities c. poultry processing facilities.
	Fish products	-
	Flours, prepared cereal foods and feeds	-

SECTOR	Sub sector	Description
	Feed mills	
BEVERAGES	Distillery products Brewery products Wines	-
RUBBER PRODUCTS	a. tyres and tubes; b. rubber hoses and beltings; c. other rubber products	-
PLASTIC PRODUCTS	a. tyres and tubes; b. rubber hoses and beltings; c. other rubber products	-
LEATHER AND ALLIED PRODUCTS	Man made fibres and filament yarns Spun yarns and woven cloths Broad knitted fabrics	-
TEXTILE PRODUCTS	Natural fibres processing and felt products Carpets, mats and rugs Canvas and related products Other textile products	-
WOOD	Sawmill, planning mill and shingle mill products industries Veneers and plywoods Other wood products Wood preservation facilities which use hazardous chemicals or similar chemical processes Particle board or wafer board production	-
PAPER AND ALLIED PRODUCTS	Pulp and paper Asphalt roofing Other converted paper products	-
PRIMARY METALS		-
FABRICATED METAL PRODUCTS		-
TRANSPORTATION EQUIPMENT		-
REFINED PETROLEUM PRODUCTS	Agricultural chemicals Plastics and synthetic resins Paints and varnishes Soaps and cleaning	-

SECTOR	Sub sector	Description
	compounds Other chemical products	
OTHER MANUFACTURING	Scientific and professional equipment	Photographic films and plates manufacturing Floor tiles, linoleum and coated fabrics manufacturing Other manufacturing products
CONSTRUCTION	Industrial construction (other than buildings)	a)Construction of pipelines for the transmission of oil, natural gas and other related products from the source to the point of distribution, where: Any portion of the pipeline is to be located at a distance greater than 500m from an existing right of way; or Any portion of the pipeline is to be located in an environmentally sensitive area b)diesel electric power generating plants having capacity greater than 1 megawatt a gas turbine electric power generating plants having capacity greater than 1 megawatt c)nuclear electric power generating plants
HIGHWAYS AND HEAVY CONSTRUCTION	Roads	-
	Waterworks and sewage system	Construction of trunk pipelines for transmission of water from the source to the point of distribution Construction of trunk sewer pipelines Construction of trunk sewer pipeline outfalls
	Hydroelectric power plants and related structures	Construction of dams and associated reservoirs Inter or intra basin water transfers Construction of hydroelectric power developments
UTILITIES		Establishment of waste disposal sites Establishment of facilities for the collection or disposal of hazardous waste materials
WHOLESALE TRADE	Petroleum products	Wholesale establishment of petroleum products storage facilities
	Waste materials, wholesale	Establishment of facilities for the purpose of assembling, breaking up, sorting or wholesale trading of scrap, junk or waste material of any type
SERVICES	Economic services administration	Resource conservation and management programmes involving introduction of exotic species of animals or plants for any purpose; Resource conservation and management programmes involving introduction of native species of animals or plants into areas where those species

SECTOR	Sub sector	Description
		do not occur at the time of the proposed introduction Designation of land for cottage development or other recreational development
ACCOMMODATION SERVICES	Establishment of recreation and vacation camps	-
AMUSEMENT AND RECREATIONAL SERVICES	Commercial spectator sport	Establishment of horse racetrack operations Establishment of racetrack operations for motorized vehicle sports and recreation clubs and services Establishment of facilities, including trails Establishment of outdoor firearm ranges Establishment of marina operations Establishment of facilities, including trails for mortised recreational vehicles Other amusement and recreational services

ANNEX 4: SAMPLE COPY OF EPA REGISTRATION FORM, EA1

ENVIRONMENTAL PROTECTION AGENCY, GHANA

ENVIRONMENTAL ASSESSMENT REGISTRATION FORM

(To be completed in Duplicate)

FEE: ₵50,000

Serial No.

FORM EA1

PROPONENT:

Address for correspondence:

Contact person:

Position:

Phone No.:

Fax No.:

Email:

ASSESSMENT NO:		FILE NO:	
----------------	--	----------	--

Environmental Protection Agency
P.O. Box M 326
Accra, Ghana

Tel: 664697/8, 664223, 662465

Fax: 662690

Email: support@epagghana.org

Web-site: www.epa.gov.gh

*This form shall be submitted to the relevant EPA Regional Office. It is important that you read carefully the guide for completing the form before starting.

1. PROPOSED UNDERTAKEN/DEVELOPMENT

Title of proposal (General Classification of undertaking)

Description of Proposal (nature of undertaking, unit processes [flow diagram], raw materials, list of chemicals (source, types and quantities), storage facilities, wastes/ by-products (solid, liquid and gaseous)

Scope of Proposal (size of labour force, equipment and machinery, installed/production capacity, product type, area covered by facility/proposal, market)

2. PROPOSED SITE

Location (attach a site plan/map)

Plot/House No.

Street/Area Name

Town

District/Region

Major Landmarks (if any)

Current zoning

Distance to nearest residential and/or other facilities

Adjacent land uses (existing & proposed)

Site description (immediate activities should be described)

3. INFRASTRUCTURE AND UTILITIES

Structures (buildings and other facilities proposed or existing on site)

Access to water (source, quantity)

Access to power (type, source & quantity)

Drainage provision in the project area

Nearness to water body

Access to project site:

Other major utilities proposed or existing on site(e.g. sewerage, etc)

4. ENVIRONMENTAL IMPACTS

Potential environmental effects of proposed undertaking (Both constructional and operational phases)

5. OTHER ENVIRONMENTAL ISSUES

Potential significant risks and hazards associated with the proposal (including occupational health and safety). State briefly relevant environmental studies already done and attach copies as appropriate.

6. CONSULTATIONS

Views of immediate adjoining neighbours and relevant stakeholders (provide evidence of consultation)

7. MANAGEMENT OF IMPACTS AND ENVIRONMENTAL ENHANCEMENT MEASURES

ATTACHMENTS

Tick appropriate boxes below indicating that the following required documents have been attached:

- ☐ Authentic site plan (signed by a licensed surveyor and certified by Survey Dept.)
- ☐ Block plan of the site
- ☐ Photographs of the site
- ☐ Fire report from the Ghana National Fire Service
- ☐ Zoning letter from Town & Country Planning Department

DECLARATION:

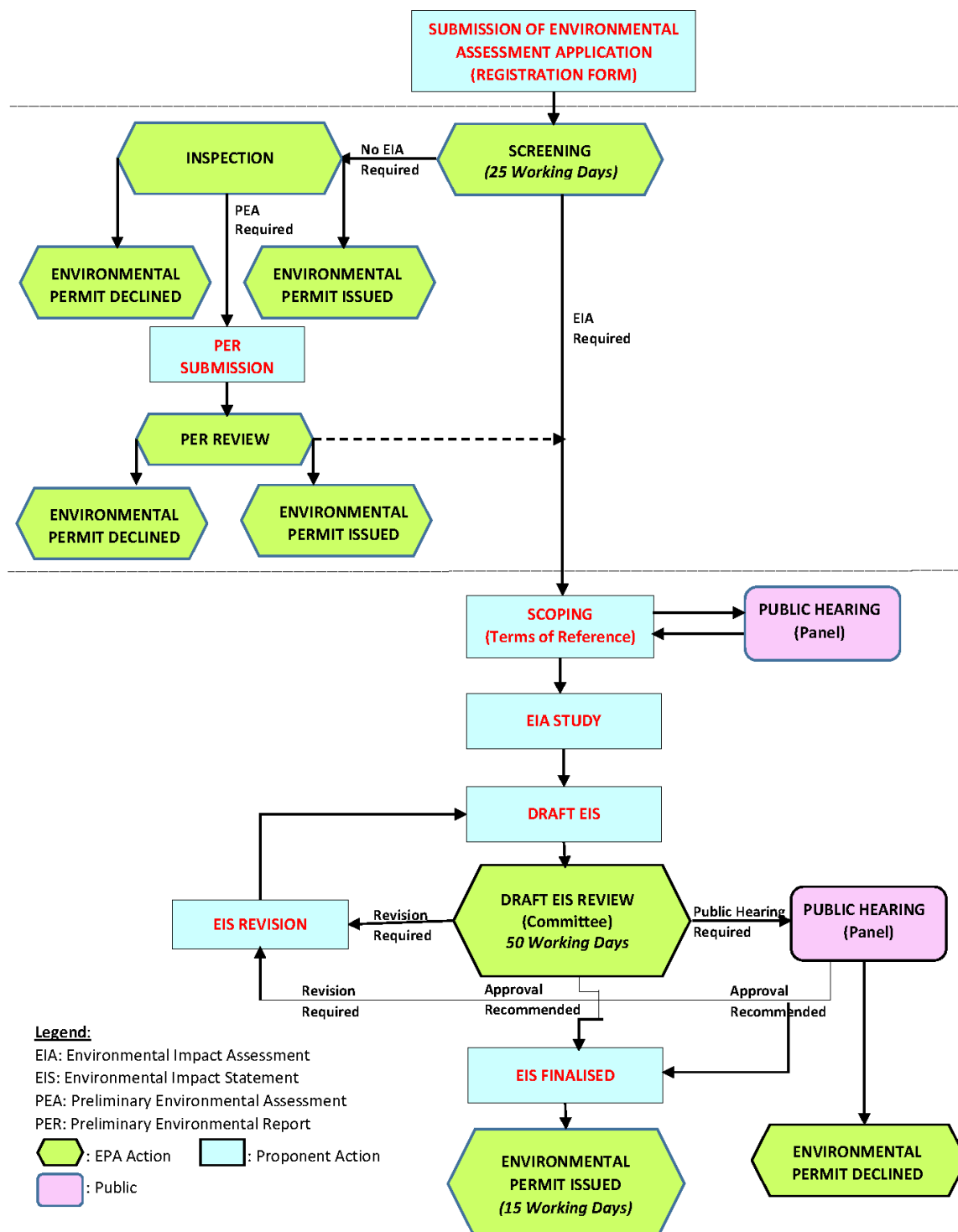
I,, hereby declare that the information provided on this form is true to the best of my knowledge and shall provide any additional information that shall come to my notice in the course of processing this application. I also declare that information provided is true.

Signature

Date

* Use additional sheets where spaces provided in 3, 4 and 5 are inadequate.

ANNEX 5: FLOWCHART OF THE EIA PROCESS



ANNEX 6 ENVIRONMENTALLY SENSITIVE/ CRITICAL AREAS

NB: Projects sited in these areas could have significant effects on the environment and the EPA could require a more stringent environmental assessment

All areas declared by law as national parks, watershed reserves, forest reserves, wildlife reserves and sanctuaries including sacred groves

Areas with potential tourist value

Areas which constitute the habitat of any endangered or threatened species of indigenous wildlife (flora and fauna)

Areas of unique historic, religious, cultural, archeological, scientific or educational interest

Areas which provide space, food, and materials for people practicing a traditional style of life

Areas prone to disaster (geological hazards, floods, rainstorms, earthquakes, landslides, volcanic activity etc)

Areas prone to bushfires

Areas classified as prime agricultural areas

Recharge areas of aquifers

Water bodies characterized by one or any combination of the following conditions:

Tapped for domestic purposes

Within controlled/ protected areas

Which support wildlife and fishery activities

Mangrove areas characterized by one or any combination of the following conditions:

With primary pristine and dense growth

Adjoining mouth of major river system

Near or adjacent to traditional fishing grounds

Which acts as natural buffers against shore erosion, strong winds and storm floods

Estuaries and lagoons

Other coastal areas of ecological, fisheries or tourism importance or which are subject to dynamic change

Wetlands

Rivers

Areas of high population density

ANNEX 7: TOR FOR THE RECRUITMENT OF ESIA CONSULTANTS

The ESIA Consultant will support the overall project environmental and social due diligence with:

- development of background information related to E&S application requirements
- development of checklists and manuals for implementation of safeguards
- public dissemination of all E&S requirements at appropriate forums
- assist the FC E&S FP in ensuring that sub projects are screened and reviewed using the E&S Screening Form
- discussions with the head office, regional and district FPs concerning the E&S requirements
- technical advice, on an as needed basis to FPs on provisions in the ESMF and any other E&S issues
- monitoring subproject progress as it relates to adherence with the ESMF requirements and associated guidelines,
- resolving implementation bottlenecks, and ensuring overall that E&S subproject implementation proceeds smoothly;
- collecting and managing E&S information relevant to the subproject and accounts (i.e. environmental monitoring and audit reports); and
- developing the annual E&S report

A Consultant will be retained on a full or part time basis pending determination by the FC on the work requirements per year.

In addition, the Consultant will provide technical advice on environmental management and mitigation during the life of the FIP, and to enhance E&S provisions to:

- develop series of Technical Planning Guidelines (including manuals and checklists) specific to the FIP and the types of subprojects that build upon the checklists and E&S and other Guidelines provided with this ESMF.
- liaise with the appropriate FPs to share knowledge and explain the objectives and ESMF requirements for approved subprojects in their Districts
- raise awareness among stakeholders on E&S issues related to the FIP, and
- lead the delivery of capacity-building programmes for relevant stakeholders.

8. References (if any)

Institutional Arrangement and Roles and Responsibilities for the implementation of the ESMF
Institutional arrangement for the implementation of the Framework ESP

- Steering Committee:
- Project Implementation Entity (PIE):
- Local authority:
- National/state EA Agency
-

ANNEX 9: STAKEHOLDER CONSULTATIONS

List of Consultees

No.	Name of stakeholder consulted	Institution/Community	Position	Contact No.
1	Graham Sarbah	Accra Metropolitan Assembly (AMA)	GARID Project Coordinator	0202019170/ 0243235530
2	Alex Amoah	Ga East Municipal Assembly (GaEMA)	GARID Project Coordinator	0244516173
3	Jajah Rashid	Ga East Municipal Assembly (GaEMA)	Procurement officer	0244883783
4	Francis K. Meuro	Ga East Municipal Assembly (GaEMA)	Planning officer	0269204346
5	Patience Ofosuhene Okrah	Office of the Dome Zonal Council	Zonal Council Chairperson/ Assembly woman (Taifa North Electoral area)	0207757447
6	Stephen Yeboah	Office of the Dome Zonal Council	Administrator	0243216215
7	Dominic Armah	Office of the Dome Zonal Council	Zonal Environmental officer	0243344427
8	Richard Donkor	Office of the Dome Zonal Council	Zonal Environmental officer	0244111212
9	Mohammed Ali	Office of the Dome Zonal Council	Assembly man(Dome East and West Electoral area)	0244672867
10	Raymond Tettey	Ashiedu Keteke Sub metro, Accra	Sub Metro Chairman	0277440429
11	Ernest Carlos Myeus	Ashiedu Keteke Sub metro, Accra	Sub Metro Director	0244616824/ 0264616824
12	Victor Kotey	Ashiedu Keteke Sub metro, Accra	Ag. Head, Waste Management Department	0244616720
13	Thomas Yaw Asare	Old Fadama Community Management Committee	Community Chairman	0244088803
14	Yakubu Issah Bob	Old Fadama Community Management Committee	Asst. Chairman	0244988863
15	Fredrick Opoku	Old Fadama Community Management Committee	Community Secretary	0277636251
16	Basavei Bukari Mariama	Neighbourhood Watch Committee- Old Fadama	Member	0547401115
17	Fu-ad Sani	Neighbourhood Watch Committee- Old Fadama	Member	0206769057
18	Nana Adu- Bediako I	Council of Elders- Tafia North Electoral Area	Chief of Taifa (Nkosuohene)	0246069345
19	Margaret Senkyire	Council of Elders- Tafia North Electoral Area	Unit committee member	0541339377
20	Osei Duku	Council of Elders- Tafia North Electoral Area	Elder	0277428677

21	Joseph Oppong Asumadu	Council of Elders- Tafia North Electoral Area	Elder	0244686755
22	Samuel K.Sasu	Council of Elders- Tafia North Electoral Area	Elder	0578888880
23	Emmanuel Kotey	Council of Elders- Tafia North Electoral Area	Community member	0242051198

Summary of discussions and comments/ suggestions

No.	Stakeholder and Comments/ Concerns and Suggestions
1.0	<p>Accra Metropolitan Assembly (AMA) Person consulted: Graham Sarbah, GARID Project Coordinator</p> <p>The AMA has been involved with the GAMA Sanitation and Water project and gained considerable experience with the implementation of safeguards. He recounted the major sanitation challenges encountered in the Metropolis which included:</p> <ul style="list-style-type: none"> • Heavy silt load and transport from the upper reaches of the Odaw river which block drains in the metropolis. • Poor solid waste management practices in the metropolis; and • Encroachment within the buffer areas reserved for protection of the river. <p>Under the GAMA S&W project, some few drains are currently being reconstructed but scope is very limited. Expecting that, under GARID much bigger effort will be made. Specific hotspots include Old Fadama and Kwame Nkrumah Circle where settlements will be affected. It is important that the project includes provision of retention basins to control flood and also appropriate designs to trap silt.</p> <p>Following from earlier projects executed, the Assembly now has good understanding of safeguard measures and some competence has been gained to successfully implement safeguard activities under GARID. However, some further training will be useful to assist them also train staff at the sub- metro level who are in direct contact with communities. He expressed worry that there is little safeguard appreciation at the sub metro level. It is expected that the safeguard planning and execution will cover the management of the facilities after construction, to ensure sustainability.</p>
2.0	<p>Ga East Municipal Assembly Persons consulted: Alex Amoah, GARID Project Coordinator; Jajah Rashid, Procurement officer; Francis K. Meuro, Planning officer; Municipal Coordinating Director</p> <p>Earlier experience with safeguards under the GAMA S&W project was very bitter and also instructive because sub projects were halted for over seven months due to inadequate safeguard actions. The Assembly will not wish a repeat of this situation under the GARID project. The coordinator elaborated on their understanding of safeguards and confirmed training for screening of projects before commencement. He showed examples of screening reports prepared under GAMA S&W project and also efforts to obtain environmental permits for project from the EPA. There were complaints about the illegal settlements along the river and the difficulties to be encountered in relocating them. Some traditional leaders are to be blamed for some of the</p>

	<p>problems. In implementing past projects, reports are sent to the project office on quarterly basis which includes all safeguard actions taken over the period. As part of the Assembly's procedure for grievance redress, a Client's Service desk has been created to attend to all public complaints. The Public Complaint's Committee is chaired by the Presiding Member. There are frequent town hall meetings to afford the public the opportunity to bring issues of concern to them. These are held twice in a year.</p>
3.0	<p>Office of the Dome Zonal Council Patience Ofosuhene Ocrach, Council Chairperson/ Assembly woman (Taifa North Electoral area); Mohammed Ali, Assembly man (Dome East and West Electoral area); Stephen Yeboah, Zonal Environmental officer; Dominic Armah, Zonal Environmental officer; Richard Donkor</p>
	<p>This is one of the two (2) Zonal Councils under the Ga East Municipal Assembly and resides totally within the Odaw catchment.</p> <p>The Chairperson of the Council as well some administrative staff and an Assemblyman for one of the electoral areas were in attendance. Incidentally, the Chairperson of the Council is also an Assemblyperson. They enumerated various challenges faced by the communities as including intense and widespread flooding during rain events and poor solid waste management practices despite sustained education and awareness creation programs. However, monitoring and enforcement have been poor. The existing drains are under designed and carrying capacity has been further reduced extremely by choked culverts. Logs, shrubs and all sorts of waste are trapped by the culverts which contribute to flooding upstream. Women and children are the main sufferers when there is flooding. Children are unable to go to school. The lack of footbridges across the stream limits movement within the communities and community members are forced to wade through the stream at great peril to their lives. Some community members have contributed money to dredge the stream within the stretches in their vicinity with little support from the assembly. The assembly woman for Taifa North Electoral area had a meeting with the landlords in the area who agreed to contribute five hundred Ghana cedis (¢500) each to enable them to start constructing some footbridges. The construction of footbridges will improve accessibility for all especially school children.</p> <p>The assembly will need assistance to manage waste especially solid waste once the project is in operation. Sustained awareness creation and capacity building through training should be conducted for assembly. Safeguard awareness is poor and there has never been an opportunity to participate in any such training program even though they are the ones who interact directly with the communities. They will welcome the opportunity to be part of the environmental and social safeguard implementation effort.</p>
4.	<p>Ashiedu Keteke Sub metro, Accra Raymond Tettey, Sub Metro Chairman; Ernest Carlos Myeus, Sub Metro Director; Victor Kotey, Ag. Head, Waste Management Department,</p>
	<p>This is one of the 10 sub metros under the AMA and the most populous. It superintends over the management of the Korle lagoon which is probably the most polluted water resource in the country caused by intense human activities within its catchment. The sub metro is yet to be officially informed about the GARID project even though they believe they may have a big role to play to make the project successful. There is no capacity for safeguard implementation at their level and will require training to play any required role in the project. They lamented over fact that activities are still very centralized at the head office (AMA). The sub metro has been actively educating communities on safe disposal of solid waste which is their main sanitation burden but success has been limited. Prosecution seems to be the only workable option for deterrence.</p>

5.	<p>Old Fadama Community Management Committee Thomas Yaw Asare, Community Chairman; Yakubu Issah Bob, Asst. Chairman; Fredrick Opoku, Community Secretary,</p>
	<p>The Old Fadama community is within the Ashedu Keteke sub metro and is one of the most populous and deprived settlements in the GAMA. It was called ‘Sodom and Gomorrah’ due to the perceived deprivation of the settlement which lies well within the lagoon catchment. The community is now anxious to clean itself of this bad image and has set up Community management committee to handle its affairs. The community is made up of sixteen (16) tribes with a chief acting as a head of each tribe. The tribal chiefs act as the council of elders in support of the community management committee. A total number of ten (10) people made up the community management committee. They agreed that many of the settlers who are from various parts of the country are squatting within areas which fall within the flood plains and inside the buffer zone reserved for the protection of the lagoon. Unfortunately, after a recent dredging programme, the cleared buffer area around the lagoon was left fallow and open which encouraged people to encroach again. Such spaces must be planted with trees to discourage people from encroaching again or should be completely fenced. They lack waste bins and other sanitation facilities so almost all their waste finally ends up in the lagoon. Community members will be willing to pay for waste collection services and upcoming projects include the planting of trees to demarcate the boundaries as no-go areas to protect the lagoon. Grievances are usually solved satisfactorily by the community management team and with assistance from the local chiefs and elders. Obviously, the community is well aware of the environmental sanitation challenges and the associated risks and are willing to participate in any such project to improve their living conditions. Also, the community management structures are in place to make the project successful.</p>
6.	<p>Neighbourhood Watch Committee- Old Fadama Basavei Bukari Mariama, Member; Fu-ad Sani, Member</p>
	<p>As part of the effort by the Old Fadama community to clean itself of miscreants and other criminals, the community has teamed up with the Ghana Police to set up a Watch Committee to provide security to its members. Members of this Committee affirmed that community sanitation risks are intertwined with security hence will be interested in playing any assigned role to assist the project succeed within their particular community. They agreed that the lagoon should be dredged and affected persons will be encouraged by the community to vacate unauthorized areas without any fuss. The committee will be happy to participate in any education or awareness creation programmes to the benefit of the community as a whole. The members are aware that an earlier MOU between the AMA and the community to leave a buffer area of about 100m around the lagoon was signed but this has been flouted with the change in government. They lamented that national politics is a major source of tension among community members and it is important that any project introduced to the community must be free of any political inferences.</p>
7.	<p>Council of Elders- Tafia North Electoral Area Nana Adu- Bediako I, Chief of Taifa (Nkosuohene); Margaret Senkyire, Unit committee member; Osei Duku, Elder; Joseph Oppong Asumadu, Elder; Samuel K.Sasu, Assembly member; Patience O. Okrah, Elder; Emmanuel Kotey, Community member</p>
	<p>The Taifa community within the Ga East Municipal Assembly is one of the most vulnerable communities within the Odaw basin. Access to the community is cut off with the slightest rain event because the culvert at the road crossing entering the town seems to be under designed. There are numerous stretches on the Odaw river in the town where channel designs seem inadequate with consequent danger to the residents. Movement within the community is usually severely restricted from the floods. Some footbridges have been provided from community effort but these are poorly constructed. The council of elders are fully in support</p>

	of the idea of community involvement in the implementation of the project and will contribute their quota in sensitizing their people to welcome the project into their community rather than anywhere else, and to make the project successful. They have structures in place to attend to grievances and disputes and would usually as expected, refer criminal cases to the police.
	GAMA PCU Stakeholder: Mr. George Awudi, Safeguard specialist
	<p>Safeguard lessons learnt from the implementation of GAMA Sanitation and Water Project include the following:</p> <ul style="list-style-type: none"> • Preparation of safeguards documents for a proposed civil works comes on the heels/dependent of the following and should strictly be put into focus consciously during the project implementation: • Agreement on the proposed project sites • Availability of preliminary engineering designs of the proposed works • Availability of an approved TOR for the safeguards instrument preparation • Therefore, delay in putting the above issues in place early in the project implementation arrangements can lead to delays in the delivery of a particular subproject activity and delay in the overall project implementation. It is consequently recommended that identification/decision on all subproject sites and alternative sites and preparation of preliminary engineering designs be prioritized to avoid delays in project delivery targets. • Civil works that ought to be subjected to safeguards instruments preparation by the Project Team and approval of the instrument by the Bank MUST NOT be commenced prior, least, the said civil works could be stopped by the Bank till the safeguards instruments is approved by the Bank. • The project stakeholders especially the project management team/ MMDAs and ministries should refrain from interfering in the smooth flow of the safeguards procedures on the project. Any unnecessary interference could lead to undue delays on the project. • Project Teams/MMDAs and ministries have the tendency to think that safeguards procedures especially assessment and payment of compensation to project affected persons should be ignored or treated lightly. This attitude must be discouraged and avoided on the project. • The World Bank approval for all prepared safeguards instruments should seek no objection from the TLL before it is deemed to be approved by the Bank. • The project team and other relevant staff who will be involved in the planning and implementation of the GARID ESMF and the RPF be given an early training and capacity building on these document and other relevant safeguards requirements of the project. The World Bank, the EPA and other competent consultants can be called upon to provide the trainings

Name (Complainant):

ID Number (PAPs ID number):

Contact Information (house number/ mobile phone):.....

Nature of Grievance or Complaint:

.....

Details of Grievance:

.....

.....

.....

.....

.....

Name (Receiver): Signature:.....

Date:.....

Name (Filer): Signature.....

Date:.....

Relationship to Complainant (if different from Complainant):

Review/Resolution	Level 1 (MMDA)	Level 2 (MDA)	Level 3 (PCU)

Date of Conciliation Session:

Was Filer/Complainant Present?:	Yes	No

Was field verification of complaint conducted?	Yes	No

Findings of field

investigation:.....

.....

Summary of Conciliation Session

Discussion.....

Issues.....

.....

Was agreement reached on the issues?	Yes	No
1. The proposed changes to the constitution are necessary and justified.		
2. The proposed changes to the constitution are in the best interests of the club.		
3. The proposed changes to the constitution are fair and equitable.		
4. The proposed changes to the constitution are consistent with the club's values and mission.		
5. The proposed changes to the constitution are supported by the majority of the members.		
6. The proposed changes to the constitution are supported by the majority of the committee.		
7. The proposed changes to the constitution are supported by the majority of the board.		
8. The proposed changes to the constitution are supported by the majority of the stakeholders.		
9. The proposed changes to the constitution are supported by the majority of the community.		
10. The proposed changes to the constitution are supported by the majority of the industry.		

If agreement was reached, detail the agreement:.....

Signed (Conciliator): Signed (Filer/Complainant):
Signed:
(Independent Observer eg. Assembly Member/Opinion Leader)
Date:

Date of implementation:

If satisfied, sign off & date:.....

(Filer/Complainant) (Conciliator)

.....

Page 102

Annex 12 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, 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 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, and 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/construction materials and other hazardous chemicals shall be banded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed of 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 of 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 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 these 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 downstream, 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 assets 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 Health, Safety and Environment Management Plan (HSE-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 HSE 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 HSE aspects of the project, and as a basis for monitoring of the Contractor's HSE 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.

HSE 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 HSE report is given below. It is expected that the Contractor's reports will include information on:
- HSE management actions/measures taken, including approvals sought from local or national authorities;

- Problems encountered in relation to HSE 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 HSE aspects; and
 - Observations, concerns raised and/or decisions taken with regard to HSE management during site meetings.
58. It is advisable that reporting of significant (including minor injuries, fatalities and mere misses) HSE incidents be done “as soon as practicable”. Such incident reporting shall therefore be done individually by either witnesses or affected persons. The Contractor is expected to 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. Example formats for an incident notification and detailed report are given below. Details of HSE 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:
- HSE in general (working procedures);
 - emergency procedures; and
 - social and cultural aspects (awareness raising on social issues).

ANNEX 13: CHANCE FIND PROCEDURE

Introduction

The purpose of this document is to provide the GARID Project Management of Ministry of Works and Housing and their contractors with the procedures for dealing with situations in which buried cultural resources are unexpectedly encountered during civil works involving excavations. The ‘chance finds’ procedure is prepared taking into consideration international best practice based on the World Bank Policy on Physical Cultural Resources OP4.11, the 1972 UNESCO Convention on the Protection of World Cultural and Natural Heritage (World Heritage Convention) which Ghana ratified in 1975.

Physical Cultural Resources- Definition

For simplicity, the term ‘cultural resource’ includes movable or immovable objects, sites, structures or groups of structural having archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

Ownership

At the moment, the Project is only at the planning stage. However, the identity of ownership of any cultural resources will be determined by the concerned authorities when cultural resources are encountered during the Project. The ownership could be for the state, a community, a religious institution, a landowner, etc.

Chance Find Procedure

Cultural resources may be identified during construction or accidentally exposed. The following procedural guidelines must be considered if heritage resources are exposed or found during the life of the Project. The procedures covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

The initial procedure when such sites are found aim to avoid any further damage. The following steps and reporting structure must be observed.

Procedure

MITIGATION /MONITORING ACTION	RESPONSIBILITY	SCHEDULE
Should a heritage site or item be uncovered or discovered during the construction phase of the project, the ‘chance find’ procedure should be applied. The details of this procedure are highlighted below:	GARID Project Coordinating Unit	When necessary
<ul style="list-style-type: none"> ○ If a heritage item is uncovered by operating machinery or equipment: Stop all activities in the immediate vicinity of the site ○ Identify the site with a flag tape ○ Immediately inform the construction Foreman about the discovery 	The person or group who discovered the archaeological or heritage item	When necessary
<ul style="list-style-type: none"> ○ Ensure that the site is secured and limit access to the site. ○ Determine GPS position if possible ○ Report findings, site locations and actions taken to the GARID Project Coordinator and Safeguards Specialist ○ Cease any works in immediate vicinity 	Foreman	When necessary
<ul style="list-style-type: none"> ○ With the assistance of a qualified archaeologist, visit site and determine whether work can proceed without damage to findings ○ Determine and mark exclusive boundary ○ Site locations and details to be added to project GIS for a field confirmation by an archaeologist 	GARID Project Coordinator and Safeguards Specialist	When necessary
<ul style="list-style-type: none"> ○ Inspect site and confirm addition to project GIS ○ Advise the Ghana National Commission on Culture and request written permission to remove findings from work area ○ Recovery, packaging and labelling of findings and transfer to National Museum 	Archaeologist	When necessary

<p>At the request of the Project Coordinator, the Archaeologist and within 4 days, make a chance find report. The chance find report should record:</p> <ul style="list-style-type: none"> ✓ Date and time of the recovery ✓ Location of the discovery ✓ Description of the heritage item ✓ Estimated weight and dimensions of the discovery ✓ Temporary action implemented to protect the heritage item ✓ In consultation with the heritage and scientific community recommend further suspension of works at the vicinity of the discovered site to protect the 'chance find' or recommend project design that ensures minimal impact to the site, if necessary. 	<p>Archaeologist</p>	<p>When necessary</p>
<ul style="list-style-type: none"> ○ Should human remains be found the following actions will be required: <ul style="list-style-type: none"> ✓ Apply the chance find procedure as described above ✓ Schedule a field inspection with an archaeologist to confirm that the remains are human ✓ Advise and liaise with the heritage and scientific community and Police ✓ Remains will be recovered and removed to the National Museum. 	<p>Archaeologist</p> <p>Heritage and scientific community</p> <p>Police</p>	<p>When necessary</p>