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Republic of Ghana

MINISTRY OF COMMUNICATIONS

eGHANA PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) FOR

PROPOSED CONSTRUCTION OF 10 REGIONAL INNOVATION CENTRES
AND
REFURBISHMENT OF PWD CENTRAL STORES AS BPO CENTRE

May 2010

CONTENTS

1.0 INTRODUCTION

The Ministry of Communication (MOC) is to embark on the construction of ten (10) Regional Innovative Centres for disseminating e-government applications, and the refurbishment of government facilities to be used for Business Process Offshoring (BPO). The Innovation Centers are aimed at facilitating information flow towards the social and economic development of the beneficiary areas in which the facilities are to be provided. In both cases, theGovernment is aiming to use sites and infrastructure which are Government – owned and is actively looking for such locations. Some tentative sites have been located for the BPO but discussions are still on-going. The same situation applies to the Innovation Centers where the Ministry of Communication has held preliminary discussions with Regional Coordinating Directors to identify potential government buildings/sites for the Centers. It is likely, however that Centers in particular may involve the construction of new buildings. For the BPO, the agreement with the Private Sector (based on recommendation of an International Investment Promotion Company hired by the Government) is for refurbishment of an old building as a fast track solution to meet urgent real estate needs. The types of works to be undertaken in both cases may have direct and indirect environmental and social impacts in the affected areas. The Environmental Protection Agency (EPA) in accordance with its mandate specified in the EPA Act 490 (1994) which is further elaborated in the LI 1652 requires that the planning and execution of development projects are undertaken in compliance with laid down environmental and social impact mitigation procedures. This report presents the Environmental and Social Management Framework (ESMF) for mainstreaming environment and social safeguards into the design and planning of the project. The reasons for the preparation of the ESMF and RPF are as follows:

- The activities fall within the category of EPA projects which require environmental concerns to be addressed.

- The MOC considers it useful to have a framework of principles and procedures that will govern the mitigation of adverse environmental and social (E&S) impacts induced by the project and its sub-projects.

- The activities are at the preparatory phase and even though the beneficiary districts have been selected the exact location of the Innovation Centres within each community is not known at this stage and the level of the specific project impacts cannot yet be determined.

- The Government intends to use Government properties that do not have squatters or claims on it, but there may be some cases where they may have to acquire land and resettle people

- The activities have a wide geographical spread involving all the ten regions in Ghana.

- The project triggers the World Bank policy on environmental assessment OP 4.01and O.P 4.12 which requires that the project prepares an Environment and Social Management Framework (ESMF) to address potential impacts. For this project, the Resettlement Process Framework (RPF) has been developed as part of the ESMF.

The ESMF provides a corporate environmental and social safeguard policy framework, institutional arrangements for the identification and mitigation of potential safeguard issues and impacts of the project. The ESMF includes a Resettlement Framework in the event that people need to be resettled. The key components of the ESMF include the following.

- A brief description of the proposed project
- A brief description on the approach to the preparation of the ESMF and RPF
- The statement of the relevant policy, legal and administrative framework within which the ESMF has been prepared and a list of the relevant clauses which are consistent with national and local E&S requirements of the LI 1652 as well as the OP4.01 and OP4.12 and other applicable safeguard provisions of the World Bank to guide implementation of environmental safeguards.
- A baseline description of the Environment of the Proposed Project Areas
- An overview of potential environmental and social risks associated with the project and the proposed mitigation factors that could be applied to safeguard such impacts.
- Institutional arrangements and mechanisms for effective environmental and social safeguard compliance and enforcement.
- A resettlement framework consisting of land tenure and ownership, procedures for valuation, entitlements and compensation and grievance redress mechanisms.

2.0 PROJECT DESCRIPTION

As part of its efforts to extend the use of information and communication technologies to unserved and underserved communities in Ghana the Ministry of Communication has embarked on a project to provide information centres in ten (10) urban towns within the ten regions of Ghana. The project is expected to be funded by the World Bank. The Regional Innovation centers are expected to be located on Government Property which are still being identified. The Government is actively exploring the option to locate such Centers on Government owned properties and, where appropriate, use existing facilities. It is also possible that the activity may involve the construction of permanent structures. In all cases, the facilities are expected to be resourced with technical equipment including ICT facilities to facilitate information flow towards socio economic development. Each structure will have a video conference room, a software development unit, a hardware development unit, an internet café, a library, a documentation centre, a repair workshop, a sever room, an open office and a spare room. Each building is also expected to be equipped with the following amenities: a courtyard, a store, toilet facilities and a terrace.

In the event of construction, pre-construction activities for the innovative centres would include acquisition of land, identification of any persons to be located or settled permanently or temporary with appropriate entitlements completed; clearing of bushes to allow for surveyors to establish levels and the establishment of site office inclusive of temporary site pit latrine. Construction method and works would be based on existing regulations and statutes on the construction of buildings in Ghana. Duration of the construction phase should

not exceed 6 months. Water and electricity will be supplied in the conventional manner followed by the installation of the ICT equipment. Solid and liquid waste disposal will satisfy required specifications and will also be sized to suit the number of people who will use the system. Storm water flows will be calculated and dispersed to nearest gully/sinkhole using storm water pipes of the required size. In the event new land is acquired which could involve some resettlement of squatters, the resettlement process will be in the form acceptable to National and World Bank guidelines. The possible environmental and social impacts from the construction and renovation process are detailed in the mitigation plan (see section 6.1).

For the BPO facilities, government is exploring refurbishment of existing government facilities. Some discussions are ongoingwith the Public Works Department (PWD) Central Stores Warehouses which are located in Central Accra, opposite the Awudome cemetery. The facility consists of 12 structures and each structure or warehouse shell is 50m x 15m. This facility also has a one-storey office building with 24 rooms. The property is already fenced. This location has an open space and a park-like ambiance that can create the clustering effects technology parks around the world have. The refurbishment of the PWD stores would include an upgrade on existing facilities and the installations of technical equipment to suit the required use. The Government is also exploring other possibilities in the event that this option does not materialize.

3.0 APPROACH TO THE PREPARATION OF ESMF

The approach to the development of the ESMF involved a review of the project document, review of existing laws on environmental and social impact mitigation for development projects in Ghana and a review of the World Bank's environmental and social safeguards guidelines for such projects. Initial consultations have been held with key representatives and stakeholders in the affected communities. The main National and the World Bank reference documents reviewed included the following:

- The project document for the proposed establishment of 10 innovative centres,
- The project document for the refurbishment of the PWD stores to be used as BPOs.
- The Environmental Protection Agency Act, 1994 (Act 490);
- The Environmental Assessment Regulations, 1999 (LI 1652);
- The National Environmental Action Plan;
- The Ghana EIA Procedures; and
- World Bank's Environmental and Social Safeguards Policies (OP/BP 4.01 and OP/BP 4.12).

4.0 GENERAL POLICY LEGAL AND ADMINISTRATIVE FRAMEWORKS OF THE ESMF

The proposed project falls within what is described as low-risk topologies. It involves small-scale works in building construction and minor rehabilitation through civil works contracts with small, localized impacts. Therefore the relevant policy, legal and administrative framework within which the ESMF was carried out was based on the policy issues which are listed below and further reviewed in the following paragraphs.

- Ghana's Environmental Policy;
- The Environmental Protection Agency Act of 1994 (Act 490);
- The Environmental Assessment Regulations (LI 1652), and EIA procedures;
- Local Government Act, 1993 (Act 462); and
- The World Bank's policies and guidance on Environmental Assessment (OP4.01), and also the Involuntary Resettlement (OP/BP 4.12)

4.1 National Environmental Policy Requirements

4.1.1 Ghana's Environmental Policy

The environmental policy of Ghana formulated in the National Environmental Action Plan (NEAP) of 1993 hinges strongly on 'prevention' as the most effective tool for environmental protection. The policy aims at a sound management of resources and environment, and the reconciliation between economic planning and environmental resources utilization for sustainable national development. It also seeks among others, to institute an environmental quality control and sustainable development programs by requiring prior environmental assessment of all developments, and to take appropriate measures to protect critical eco-systems, including the flora and fauna they contain against harmful effects, nuisance or destructive practices. The adoption of the NEAP led to the enactment of the EPA Act 1994 (Act 490); and subsequently the passing of the Ghana EIA Procedures into the EA Regulations, 1999 (LI 1652).

4.1.2 The Environmental Protection Agency Act

The Environmental Protection Agency (EPA) Act, 1994 (Act 490) grants the Agency enforcement and standards-setting powers, and the power to ensure compliance with the Ghana environmental assessment requirements/procedures. Additionally, the Agency is required to create environmental awareness and build environmental capacity as it relates to all sectors, among others. The Agency (including its Regional and District Offices) is also vested with the power to determine what constitutes an 'adverse effect on the environment' or an activity posing 'a serious threat to the environment or public health', to require environmental assessments (EA), environmental management plans (EMP) etc. of an 'undertaking', to regulate and serve an enforcement notice for any offending or non-complying undertaking. The Agency is required to conduct monitoring to verify compliance with given approval/permit conditions, required environmental standard and mitigation commitments. Furthermore, a requirement by EPA for an EA precludes any authorising MDA from licensing, permitting, approving or consenting such undertaking, unless notified otherwise.

4.1.3 EA Regulations and Procedures

The EA Regulations combine both assessment and environmental management systems. The regulations prohibit commencing an undertaking/activity without prior registration and environmental permit (EP). Undertakings are grouped into schedules for ease of screening and registration and for EP. The schedules include undertakings requiring registration and EP (Schedule 1), EIA mandatory undertakings (Schedule 2), as well as Schedule 5-relevant undertakings (located in Environmentally Sensitive Areas).

The Regulations also define the relevant stages and actions, including: registration, screening, preliminary environmental assessment (PEA), scoping and terms of reference (ToR), environmental impact assessment (EIA), review of EA reports, public notices and hearings, environmental permitting and certification, fees payment, EMP, suspension/revocation of permit, complaints/appeals, etc.

4.1.4 EA (Amendment) Regulations, 2002

The EA (Amendment) Regulations were made to amend sections of the EA fees regime of LI 1652 (the 'principal enactment') on fee payment for environmental permit (EP) and certificate issued by the Agency.

4.2 National Labour, Safety and Health Requirements

4.2.1 Occupational Safety and Health Policy of Ghana (Draft)

The policy statement of the OSH Policy (draft 2004) is: 'to prevent accidents and injuries arising out of or linked with or occurring in the course of work, by minimizing, as far as reasonably practicable, the cause of the hazards in the working environment and, therefore, the risk to which employees and the public may be exposed'. The policy is derived from provisions of the International Labor Organization (ILO) Conventions 155 and 161. The policy document has specific sections on objectives, scope, strategies, activities and promotion and awareness creation.

4.2.2 National Workplace HIV/AIDS Policy

The broad objectives of the policy, among others, are to provide protection from discrimination in the workplace to people living with HIV and AIDS; prevent HIV and AIDS spread amongst workers; and provide care, support and counseling for those infected and affected.

4.2.3 Labour Act

The purpose of the Labor Act, 2003 (Act 651) is to amend and consolidate existing laws relating to labor, employers, trade unions and industrial relations. The Act provides for the rights and duties of employers and workers; legal or illegal strike; guarantees trade unions and freedom of associations, and establishes the Labor Commission to mediate and act in respect of all labor issues. Under Part XV (Occupational Health, Safety and Environment), the Act explicitly indicates that it is the duty of an employer to ensure that every worker works under satisfactory, safe and healthy conditions.

4.2.4 Land Acquisition and compensation laws

Acquisition of land for infrastructure projects is regulated by the Lands (Statutory Wayleaves) Act 1963 Act 186 (Vide Section 1, 2(1) and 2, 6 (1-5). A wayleave instrument contains the following:

* A description (with measurements) of the land affected by the Statutory wayleave together with a plan showing the position of the works. A copy of wayleave instrument is served on the owner or occupier of the land affected by the Statutory wayleave. Under Section 6(1) of the Act, any person who suffers any loss or damage as a result of the construction, maintenance etc shall be entitled to compensation. A claim for compensation shall be made to the Minister in the prescribed form not more than three months after the date of declaration made by the President under Section 1 of the Act.

The relevant legal and regulatory provisions include:
 The Constitution of the Republic of Ghana, 1992
 The State Lands Act, 1962
 The Lands (Statutory Wayleaves) Act, 1963

Land ownership may be categorized into these 2 main forms:
 Customary land comprising stool and family lands; and
 Public land comprising state and vested lands.

Public Institutions involved in Land Administration include:
 Land Commission
. Land Title Registry
 Survey Department
 Land Valuation Board
 Department of Town and Country Planning
 Office of the Administrator of Stool Lands
 The Ministry of Lands and Natural Resources

4.3 The World Bank Requirements

The World Bank's ten safeguard policies are designed to help ensure that programs proposed for financing are environmentally and socially sustainable, and thus improve decision-making. The Bank's Operational Policies (OP) are meant to ensure that operations of the Bank do not lead to adverse impacts or cause any harm. They include guidance on EA requirements.

Of the Bank's Safeguard Policies, two are relevant for consideration under the project. These are:

- Environmental Assessment (OP 4.01);
- Involuntary Resettlement (OP/BP 4.12);

4.3.1 Environmental Assessment (OP 4.01)

The OP 4.01 requires among others that screening for potential impacts is carried out early, in order to determine the level of EA to assess and mitigate potential adverse impacts. The Bank's project screening criteria group projects into three categories:

- Category A – Detailed Environmental Assessment;

- Category B - Initial Environmental Examination; and
- Category C – Environmentally Friendly

The EA ensures that appropriate levels of environmental and social assessment are carried out as part of project design, including public consultation process, especially for Category A and B projects. The OP 4.01 is applicable to all components of the Bank's financed projects, even for co-financed components.

The Bank distinguishes between small and large projects, and the policy is triggered for small projects. Both the design and supervision of works would take into account the relevant environmental and safety issues. The prospective private engineering firms and public engineers will receive required training on for the proposed construction/rehabilitation works and on environmental and safety issues under the project. The EIA of sub-projects will be carried out by separate independent consultant firms contracted by the project.

4.3.2 Involuntary Resettlement (OP/BP 4.12)

The Policy on Involuntary Resettlement is intended to assist displaced people arising from development projects, in order not to impoverish any affected people within the area of influence of projects. An action plan that at least restores the standard of living must be instituted, in cases where resettlement is inevitable or loss of assets and impacts on livelihood occurs.

4.3.6 Bank's Policy on Disclosure (BP17.50)

The Bank's policy on disclosure currently under review requires that all the people residing in the given areas of a project have the right to be informed of the proposed development project. Prior to project appraisal therefore, the summary of the study of the development action along with other relevant information should be disclosed in the info-shop and in the project area as well as nationally. The ESMF (with RPF) has been submitted to the Bank's Infoshop and disclosed on the project website. In addition, following on the consultations for the project and initial discussions on the Additional Financing, the ESMF will be discussed at a workshop representing stakeholders including Government, the DA representatives for the area, NGOs operating in the area, other local stakeholders. The ESMF is also being distributed to affected ministries, DA offices, and other relevant public locations.

5.0 DESCRIPTION OF ENVIRONMENTAL CONDITIONS OF PROJECT AREAS

The major categories of the parameters determining the baseline environmental conditions are physical environment and socio-economic parameters. An overview of the physical and social characteristics of the areas in which the projects are to be sited is presented as follows:

5.1 Accra

Location and size: AMA has a total land size of 200 square kilometres and is made up of six sub metros namely Okaikoi, Ashiedu Keteke, Ayawaso, Kpeshie, Osu Klotey and Ablekuma.
Drainage: The Accra metropolitan drainage catchment area extends from the eastern boundary of the Nyanyanu catchment on the west of greater Accra regional boundary to Laloi east of Tema.

Climate: The Accra Metropolitan Assembly lies in the Savannah zone. There are two rainy seasons. The average annual rainfall is about 730mm, which falls primarily during the two rainy seasons. 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.

Vegetation: The vegetation consists of dense clusters of small trees and shrubs, which grow, to an average height of five metres. The grasses are a mixture of species found in the undergrowth of forests. Different species of antelopes, squirrels, monkeys and reptiles live in Accra. Many animals such as the Togob have grass cutter, bush baby and bossman potto are found in the Achimota forest and outside the urbanised area. Open lagoon systems also support a wide range of crustacean, mollusks, gastropods, predatory and bottom feeding fish.

Geology: The geology of Accra consists of Precambrian Dahomeyan schists, granodiorites, granites gneiss and amphibolites to late Precambrian Togo series comprising mainly quartzite, phillites, phylitones and quartz breccias. Other formations found are the palaeozoic accraian sediments - sandstone, shales and interbedded sandstone-shale with gypsum lenses.
Soils: The soils can be divided into four main groups: drift materials resulting from deposits by wind blown erosion; alluvial and marine motted clays of comparatively recent origin derived from underlying shales; residual clays and gravels derived from weathered quartzites, gneiss and schist rocks, and lateritic sandy clay soils derived from weathered Accraian sandstone bedrock formations.

5.2 KUMASI

Location and Size: The land area in Kumasi covers 299 square kilometres and is about 270km north of the national capital, Accra. It is between latitude 6.35o – 6.40o and longitude 1.30o – 1.35o, with an area of about 254 square kilometres.
Relief and Drainage: The Kumasi Metropolis lies within the plateau of the South–West physical region which ranges from 250-300 metres above sea level. The topography is undulating.

Drainage: The city is traversed by major rivers and streams, which include the Subin, Wiwi, Sisai, Owabi, Aboabo, Nsuben among others.

Climate: The Metropolis falls within the wet sub-equatorial type. The average minimum temperature is about 21.5oc and a maximum average temperature of 30.70c. The average humidity is about 84.16 per cent. It has the double maxima rainfall regime (214.3mm in June and 165.2mm in September).

Vegetation: The city falls within the moist semi-deciduous South-East Ecological Zone. Predominant species of trees found are Ceiba, Triplochlon, Celtis with Exotic Species.

Geology: The metropolitan area is dominated by middle Pre-cambrian rock. It is within the plateau of the south-west physiological region, which ranges between 250 and 350 metres above sea level

Soils: The major soil type of the metropolis is the Forest Ochrosol. The detailed soil associations are the following: Kumasi - Offin Compound Association; Bomso – Offin Compound Association; Nhyanao - Tinkong Association; Bomso – Suko Simple Association; Bekwai – Oda Compound Association and Bekwai – Akumadan – Oda Compound Association.

5.3 HO

Location and Size: The Ho Municipality lies between latitudes 6° 207 N and 6° 55; N and Longitudes 0° 127 E and 0° 53; E and covers an area of 2.660 sq km.

Geology: The general relief of the Ho Municipality falls into two main parts: mountainous part and low land areas. The mountainous areas are mostly to the North and Northeast, which are part of Togo Ranges and have height between 183 - 853 metres. Soil: There are several major soil groups in the Ho Municipality. These could be put into two major groups: a) Forest Soil - forest ochrosols, lethosols and intergrades found in the mountainous and wetter northern areas of the Municipality. b) Savanna Soil - sandy soil in Sokode and part of Ho Township.

Vegetation: The two types of vegetation in the district are the moist semi-deciduous forests of the hilly areas of the savannah woodland. The district has 33.83 square kilometres of forest reserve at four main locations Ho Hills, Kabakaba Hills, Abutia Hills and Klemu

Climate: Generally, mean monthly temperatures in the Municipality range between 22° C and 32° C while annual mean temperatures range from of 16.5° C 37.80 C. Rainfall The rainfall pattern is characterized by two rainy seasons referred to as the major and the minor seasons. The major season being March to June while the minor one from August to November. The rest 5 months of the year is referred to as dry season. Mean annual rainfall figures are between 20.1mm and 192mm.

Topology The north and north-western parts of the district are mountainous, comprising part of the Togo Ranges.

Drainage: There are four major rivers and these are Alabo (Tsawe), Kalapa, Waya and Todzie.

5.4. Tamale

Location & size: The Tamale Metropolitan Assembly is located at the centre of the Northern Region. It lies between latitude 9o 16’ and 9o 34’ North and longitudes 0o 36’ and 0o 57’ West. The Tamale Metro occupies approximately 750 km sq. which is 13% of the total area of the Northern Region.

Topology: The Tamale Metropolitan Assembly is located approximately 180 metres above sea level. The topography is generally rolling with some shallow valleys which serve as stream courses.

Drainage: The Tamale Metropolis is poorly endowed with water bodies. The only natural water systems are a few seasonal streams which have water during the rainy season and dry up during the dry season. Notable among these streams are the Pasam, Dirm-Nyogni and Kwaha.

Climate: The Metropolis experiences one rainy season starting from April/May to September/October with a peak season in July/August. The Metropolis experiences a mean annual rainfall of 1100mm within 95 days of intense rainfall. The mean day temperatures range from 33o C to 39o C while mean night temperature range from 20o C to 22o C. The mean annual day sunshine is approximately 7.5 hours.

Vegetation: The Tamale Metro lies within the Guinea Savanna belt of Northern Ghana. Apart from the preserved natural colonies of vegetation at fetish groves, forest reserves and community woodlots, the whole Metropolis exhibits tall grass interspersed with drought resistant trees such as neem, sheanut, dawadawa and mahogany.

Geology: The Tamale Metropolitan area is underlain by sandstone, mudstone and shale, which over time, have been weathered to different degrees.

Soil: The main soil types that have resulted from the above natural phenomenon include sand, clay and laterite ochrosols. These soil types are inadequately protected resulting in serious erosion during the rains.

5.5 WA EAST

Location and Size: It has a landmass of about 1,078km², which lies between latitudes 9º 55”n and 10º 25”n and longitude 1º 10”w and 2º 5”w.

Topology: The land is generally undulating with height between 180-1300m above sea level. Drainage is the dendrite type, dominated by the Kulpawn and its tributaries.

Drainage: Most of the rivers over flow their banks during the raining seasons and make most parts of the district inaccessible during this period. However, they dry up during the dry season but offer great opportunities for fishing and irrigation dams if they are properly harnessed.

Climate: The climate is tropical equatorial, which prevails through out the northern part of Ghana. Temperatures are high all-year, ranging between 15cº-45cº. The average annual and average monthly temperatures are 21cº and 38cº respectively. The average annual rainfall is about 1,200mm/year and they are torrential, erratic and stormy.

Vegetation: The vegetation is guinea savanna, depicted by isolated woodlands, short thick trees, shrubs and grasses of varying heights. The common economic trees in the district

include sheanut, baobab, kapok, dawadawa, acacia, neem and ebony, mangoes, cashew and acheaple.

Geology: The district consists mainly of pre-cambrian base rock, granite and metamorphic rock types. Deposits of gold, iron and bauxite and clay abound in the Bulenga sub-district and in other parts of the district.

Soil: The soils are mainly sandy loamy which are very fertile and suitable for the cultivation of tubers, cereals, legumes and livestock.

5.6 WA WEST

Location & size: The Wa West District is located in the North Western part of the region. It stretches from longitudes 40°N to245° and from latitudes 9"W to32°W, thus covering an area of approximately 5,899.3 square kilometers.

Topology: The topography is generally gently undulating with an average there height of between 180m and 300m above sea level.

Drainage: The Black Volta and its tributaries is the main drainage system in the District.

Climate: The total rainfall figure is about. 270mm and the mean Annual Rainfall 840mm 1400mm. Average monthly maximum temperature is 33°c where as the daily highest is 35°c.

Soil: There are two main soil types, the most extensive being the ground water lateratic soil. There is also the Savanna orchrosols found along the Black Volta.

Vegetation: The natural vegetation of the District is the Guinea Savanna grassland type, made up of short trees and shrubs of varying heights and luxuriance. Common trees are Sheanut, Dawadawa, Kapok and Baobab. Cashew, sheanut and Mango are some species that have good potential in the District. Most trees are deciduous shedding their leaves during the dry season in order to conserve water

5.7 SEKONDI-TAKORADI

Location & size: It has a land area of 385 square kilometers.

Topology: The metropolis is of varied topography, with the central area of Takoradi being low lying and occupied by muddy lagoons interspersed with ridges and hills.

Drainage: The metropolis is bordered to the west by the Whin River, with its main tributary, the Ayire, joining the Whin lagoon before entering the sea, while on the east also flows into the Pra River.

Climate: The metropolis has an equatorial type of climate. Temperatures are high with an average of 22 degree Celsius. It has a mean annual rainfall of 2.350 mm, which is

experienced heavily in May and June with the minor rains occurring between September and October.

Vegetation: The vegetation is highly woodland in the northern and central parts, while thicket is intermingled with tall grass species along the coast, especially in areas where there are no permanent crop.

Geology: The geology of the metropolis consists of faulted shoals and sandstone of various types resting on a hard basement of granites, gneiss and schist. The land surface is well watered.

5.8 CAPE COAST

Location & size: The Cape Coast Metropolis covers an area of 122 square kilometers.

Topology: The landscape of Cape Coast Municipality is dominated by batholiths interspersed with valleys.

Drainage: Located in the valley are several streams, the largest of which is the Kakum. Many of the steams end in wetlands and the Fosu Lagoon at Bakaano.

Climate: The Cape Coast Municipality is located in the littoral anomalous zone of Ghana which makes the municipality experiences high temperatures year round. The municipality has a double maximal rainfall, with annual rainfall total between 750 mm and 1,000 mm.

Vegetation: The present vegetation of the municipality consists of shrubs of about 1.5 meters high, grass and a few scattered trees.

Geology: The rock type of the district is of the Birrimian formation and consists of schist and introduced granites and pegmatite..
Soil: The dominant soils of the District are lateritic in nature and are derived mainly from the weathered granite and schist. Along the slopes the soil profiles have top soils with depths of about 0.33m while on the hills, loose to dense sandy soil of about 2.36m in depth frequently occur. In the valleys and swampy areas, find sandy deposits occur extensively.

5.9 NAVRONGO

Location and Size: Navrongo is situated in the Kassena Nankana district in the Upper East, Ghana, its geographical coordinates are 10° 44' 0" North, 1° 3' 0" West and its original name (with diacritics) is Zuo.

Topology: The topography is low-lying with an average height of 100 metres above sea level. The terrain is undulating with isolated hills dotting the landscape. It has isolated hills rising up to about 300 metres in the western parts of the District. Notably among these hills include Fie (280 metres), Busono (350 metres) and Zambao (360 metres).

Drainage: The drainage system of the District is constituted mainly around the tributaries of the Sissili River – Asibelika, Afumbeli, Bukpegi and Beeyi.

Climate: The climate conditions of the District are characterized by the dry and wet seasons, Day temperatures are high recording 42° Celsius (especially February and March) and night temperatures are as low as 18° Celsius. The District experiences the tropical maritime air mass between May and October. This brings rainfall averaging 950mm per annum.

Vegetation: The District is covered mainly by the Sahel and Sudan-Savannah types of vegetations; comprising open savannah with fire-swept grassland and deciduous trees.

Geology: The geology of the district comprises granite and shale, although the rock formations are actually of a diverse nature.

Soil: Two main types of soil are present within the District namely the Savannah ochrosols and groundwater laterite.

6.0 OVERVIEW OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND PROPOSED MITIGATION FACTORS

The potential environmental and social impacts of the project can be classified as both positive and negative and the details are presented as follows;

6.1 Key Environmental Impacts and Mitigation

The potential environmental issues associated with buildings was based on the guideline for Environmental Management Checklist for Small Construction and Rehabilitation Activities by the World Bank as presented as summarized in the following matrix

Impact Parameter	Anticipated Impacts	Mitigation Measures
Air Quality	-Pollution from dust from the use of cement dust and emissions from the construction vehicles and machinery both during the site clearing as well as during construction phases. -Dust from interior demolition of structures being refurbished	-Provision of masks to workers -Stockpiling of dust producing building materials such as sand or cement in low enclosures -Demolition debris shall be kept in a controlled area and sprayed with water to reduce debris dust
Water Quality	-Incidence of water contamination from improper disposal of solid waste and poor sanitation at construction sites which can result in water	-Provision of septic tank/ soak pit of adequate capacity for the entire duration of construction phase -provision of, absorption trenches and

Impact Parameter	Anticipated Impacts	Mitigation Measures
	borne diseases - Oil Spillage and pollution of water sources	settling tanks. Refueling sites with impervious base which is bund and secured will be set so as to prevent spillage or leakage of oil. -Leaking or empty oil drums will be removed from the site immediately and disposed of via a licensed waste disposal contractor.
Noise	- The use of construction machinery such as concrete mixers and the transportation of material such as sand and stone might generate considerable noise, which might impact significantly on workers, and also the public in the built-up segment -Exposure to noise levels above 90 dB (A) could pose health hazards.	- The application of protective measures such as the use of ear muffs or ear plugs by workers during periods of noise exposure. -Restriction of use of heavy machinery to daylight hours in order to minimize the noise. -Minimisation of excessive idling of machinery on site. -Provision of silencers and mufflers for machineries where possible -Monitoring to ensure that baseline ambient noise as stipulated is ensured. .
Soil	-Improper storage or handling of hazardous or flammable materials, including fuel, paints and solvents) could result in soil contamination.	-Washings from concrete mixers, paint or paint utensils will not be allowed to flow into any drain or watercourse.
Terrestrial Ecology	- Site clearing and subsequent excavation activities will result on the removal of vegetative cover from - Demolition of parts of existing structures might create piles of building materials (e.g. sand, cement, etc. which can stress flora and fauna exposed to it	-Restoration of original condition on the development site by landscaping.
Waste	-Improper disposal of waste,	-Proper collection and disposal of

Impact Parameter	Anticipated Impacts	Mitigation Measures
Disposal	materials including concrete waste, wood, steel, and packaging plastics which could be dispersed and could end up blocking drainage channels.	construction spoils/ solid waste at designated landfill sites. -Provision for solid waste management facilities for collection, conveyance and disposal of solid waste -There will be no open burning of debris on site
Safety	- Accidents situations at construction sites from falling debris from heights etc	Provision of protective clothing such as helmets and boots during construction periods. Provision of adequate training in handling specialized equipment. Supervision of works by experienced personnel Application of good principles for good employment practices. Mandated provisions on health, sanitation and appropriate working conditions including accommodation where appropriate for construction worker at camp site.

6.2 Social Impacts

It is anticipated that apart from causing environmental problems the project will also impact on the social life of communities within which they are sited. Such social impacts may include the following;

Impact Parameter	Anticipated Impacts	Mitigation Measures
Positive Impacts		
Economic Benefits	Creation of employment opportunities	-The positive impact is represented by the creation of jobs during the construction

Impact Parameter	Anticipated Impacts	Mitigation Measures
Educational Benefits	Empowerment of communities through knowledge acquisition	phase of the development. The positive impact will be evident by improved communication and knowledge
Negative Impacts		
Land Acquisition	Displacement from land Land Acquisition Loss of livelihood	-Community Consultations and required support -Payment of compensation for land - Compensation in the form of assistance/restoration of livelihood
Culture and Sensitivity and Heritage Preservation	Destruction of Sacred Areas cultural insensitivity resulting in conflicts	Cultural resources preservation principles Habitat protection principles
Social and Health Risks from Low migrant-worker influx	Possible spread of HIV/AIDS spread, incidence of teenage pregnancy and dropout rates, etc	Education of workers and supply of preventive interventions such as condoms

7.0 INSTITUTIONAL ARRANGEMENT FOR ESMF/RPF IMPLEMENTATION AND MANAGEMENT

This section presents the institutional arrangement, capacity building, and the environmental and social monitoring plan necessary for the ESMF implementation. The successful implementation of the ESMF will depend on the commitment of the MOC, the affected districts, the contractors, consultants, Private Sector, and the EPA's safeguards specialist as well as the beneficiary communities. It will also depend on the capacity within the MOC and the institutional arrangement that is set up to effectively use the framework.

7.1 Implementing the ESMF/RPF

The environmental and social management (ESM) is linked to the project implementation activities. The ESM commitment originates from the requirement in Section 5 of the Initial Assessment/EA Screening Form by the EPA. The ESM phase comprises monitoring, management (of environmental and social impacts and mitigations) and reporting during implementation activities such as rehabilitation, maintenance, decommissioning of sites, etc. The ESM process will verify:

- Land acquisition and compensation measures being implemented
- Effectiveness of mitigation measures being implemented;
- Compliance with mitigation and other environmental and social requirements;

- Unanticipated or residual impacts that have arisen requiring remedial action;
- How far contractors are meeting or adhering to required environmental and social principles, standards and commitments; and
- Extent to which project monitoring and reporting requirements are met.

7.2 Institutional Arrangements

The MOC and the DAs are the main implementers of the project of the Regional Innovation Centers. For the BPO Center, the Private Sector IT Association established under the eGhana Project will be the main counterpart for implementation. The other institutions and agencies whose functions relate to the project in terms of project design, technical support and project environmental and social approvals include the Safeguards Specialist from EPA, project consultants, contractors and the Ghana Association of Software and IT Companies for the BPO Centre.

7.2.1 Role of the Ministry of Communication (MOC)

The MOC will take custody of this ESMF which includes an RPF and will play a lead role under the guidance of a consultant in ensuring that the appropriate environmental assessment and social and mitigation plans are integrated into the project framework. It will, with the aid of consultant, conduct the initial sub-project environmental and social impact assessment and the development of management plans. It will ensure that environmental impact assessment and management plans are developed with the assessment of consultants to meet the specific requirements at each project site. Issues associated with land acquisition, compensation and conformity with laid regulations will also be implemented by the MOC together with the affected district assemblies (DA's), representatives of the affected communities, the private sector, and the EPA. It will specifically liaise with the EPA for submission of the completed assessment forms, for inspection and other processes leading to granting of the permit for sub-projects. Where possible the MOC will engage communities in public consultations on issues relating to land acquisition, displacement etc.

The MOC will also ensure that appropriate contract clauses are inserted in contract documents which will help avoid or mitigate the effects of the project works on the social life of affected communities. Explicit line items will be introduced into Bill of Quantities for environmentally related sub items such as the haulage of materials, provision of safety measures and the disposal of waste. The clauses will guide the MOC, the DA's, Private Sector, and the Environmental and Social management consultants in the supervision and the implementation of the management plans.

Adequate financial resources have been made under the eGhana Projectfor the MoC and local contractors for meeting the environmental clauses defined in the contract documents. This will mitigate the negative social impacts caused by the inappropriate such as improper disposal of waste. The MOC will ensure that adequate supervision of construction works especially in the enforcement and inspection of safety and health issues is attained. Where necessary the MOC with the aid of the relevant expert provide environmental training for its supervision staff as well as project contractors and their staff.

7.2.2 Role of District Assemblies

The individual District Assemblies (DA) within which the projects will be executed will assist with the implementation of the environmental and social management plans. The DA's will be actively involved with issues relating to project sitting and land acquisition. Where applicable, issues involving community consultation for land acquisition will be led by the DA's. It will be involved with ensuring adequate compensation for displaced persons if applicable. It will issue the relevant building permits required for the sub-projects under their jurisdictions. The DA's will also be directly involved with the management of environmental and social issues during the project implementation through as monitoring.

7.2.3 EPA's Safeguard Representatives

The EPA safeguard representatives will review and approve environmental impact assessment and management plans for the project. The EPA will be responsible for issuing appropriate environmental permits for the project. The representative will ensure that technical issues such as the assessment of air quality, water quality, dust control etc is undertaken during construction works should concerns for such issues arise. The EPA will ensure that community consultations are conducted to address the social needs of the affected communities. The representative will also be a member of the project monitoring team and review reports on environmental mitigations.

7.2.4 Project Contractors, Consultants and Private Sector

Project contractors will be responsible for the actual execution of the environmental mitigation factors during construction under the supervision of the MOC, the DA's, the environmental safeguard consultants as well as the consultants who will supervise the civil works if such are involved in the project. For the BPO Centre, the Private IT Industry Association, GASSCOM which will be one of the key beneficiaries, will be involved in decisions pertaining to the refurbishment.

7.3 Project Oversight

An oversight committee made up of representatives of MOC, the DA's, the EPA, project consultant and the project contractors will be established to coordinate and oversee the implementation of the project. The committee will be chaired by the MOC and will perform the following functions amongst others.

- Provide guidance on strategic, policy and implementation issues;
- Coordinate activities of the ministry and other stakeholders involved in the project implementation;
- Review and approve work plans, budget and progress reports;
- Review and discuss quarterly project progress reports and make necessary recommendations; and
- Assess the progress towards achieving the project's objectives and take corrective action if necessary.

7.4 Capacity Building

Capacity building in environmental and social assessment and management will be essential for the ESMF and RPF implementation. The institutions need to understand the purpose of the safeguard documents, their expected roles and the extent to which the ESMF and RPF will facilitate the respective statutory functions. This will engender the required collaboration

for the implementation of the documents. The objectives of the capacity building efforts will include to:

- Support the mainstreaming of the environmental and management issues in the sub-projects; and
- Strengthen all stakeholders in the environmental and social issues and other aspects of the implementation of sub-projects.

The target groups for training include:

- Project coordinators;
- Project teams;
- Consultants;
- Contractors;
- District staff
- EPA staff in the regional and district offices;

The broad areas for capacity building include the following:

- Project screening/initial assessment techniques, screening tools, legislation and procedures;
- General project planning and management inter-faced with environmental and social assessment and management;
- Environmental (and social) management (including monitoring, environmental and social audit, etc.);
- Environmental and Social Safeguards report preparation and other reporting requirements;
- Public participation techniques and procedures;
- Public awareness creation/educational techniques (on environmental, social and health issues)

7.5 **Public Consultations**

Following the Mid-term review of the eGhana Project in December 20009, the Ministry of Communication has held preliminary consultations with Regional Coordinating Directors from all 10 Regions to explain the concept of the Regional Innovation Centers and to solicit their support in the identification of potential Government Properties for location of such centers. Additional consultations will be required with the communities surrounding the locations which are likely to be part of the program. For the BPO, the Private IT Association, GASSCOM, created under the eGhana Project has been actively engaged with the MoC in exploring options for meeting the sector's need for Grade A facilities for BPO transactions. Key GASSCOM members participated in the Mid-Term Review during which period both WB and Government took the opportunity to explore various potential sites for the BPO Center. Again, additional consultations will need to be held with communities surrounding the final location that will be selected.

8.0 MONITORING PROGRAM

Monitoring is designated to check the effective implementation during the construction and operation phases of: i) proposed mitigation measures; ii) requirements specified in the various laws and regulations; iii) commitments of MOC and contractors to effectively implement and follow up these measures; iv) requirements of the other laws and regulations related to public health, improvement of living conditions of the communities, environmental protection,

water quality management, sensitive areas protection. The key verifiable indicators which will be used to monitor the impacts will be: i) air quality, in the construction and operation phases; ii) noise levels, iii) waste disposal strategies at the pre-construction and construction phases; iv) sanitary facilities for staff/workers (including construction sites); v) safety measures vi) employment opportunities for the local community members; vii) relocation of displaced persons or the payment of compensation, viii) mitigation of disturbance of religious and cultural sites and associated conflicts; and ix) HIV/AIDS and STIs awareness programs.