



FORESTRY COMMISSION OF GHANA
MINISTRY OF LANDS AND NATURAL RESOURCES
Republic of Ghana

REDD+ MECHANISM IN GHANA

UPDATED Environmental and Social Management Framework (ESMF)

Prepared by
SAL Consult Ltd, P O Box GP20200, Accra, Ghana
August 2016



LIST OF ABBREVIATIONS

AfDB	African Development Bank
CFC	Collaborative Forest Committee
CIF	Climate Investment Funds
COCOBOD	Ghana Cocoa Board
CREMA	Community Resource Management Area
CRIG	Cocoa Research Institute of Ghana
CSIR	Council for Scientific and Industrial Research
CSOs	Civil Society Organisation(s)
DAs	District Assemblies
DGM	Dedicated Grant Mechanism for Indigenous People and Local Communities
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency, Ghana
ESIA	Environmental and Social Impact Assessment
ELCIR+	Engaging Local Communities in REDD+
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework
EU	European Union
FAO	Food and Agriculture Organisation
FASDEP	Food and Agricultural Sector Development Policy
FC	Forestry Commission
FCPF	Forest Carbon Partnership Facility
FDMP	Forest Development Master Plan
FIP	Forest Investment Programme
FLEGT	Forest Law Enforcement, Governance and Trade
FORIG	Forestry Research Institute of Ghana
FP	Focal Point
FSD	Forest Services Division
GFTN	Global Forest and Trade Network (WB/WWF)
GHG	Green House Gas
GIS	Global Information System
GoG	Government of Ghana
GNFS	Ghana National Fire Service
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GSBA	Globally Significant Biodiversity Areas
GTA	Ghana Timber Association
GTMO	Ghana Timber Millers Organisation
HFZ	High Forest Zone
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
LI	Legislative Instrument
LVD	Land Valuation Division
LULUCF	Land use, Land Use Change and Forestry
MC	Minerals Commission
M&E	Monitoring and Evaluation
MESTI	Ministry of Environment Science Technology and Innovation

MLGRD	Ministry of Local Government and Rural Development
MLNR	Ministry of Lands and Natural Resources
MoFEP	Ministry of Finance and Economic Planning
MoFA	Ministry of Food and Agriculture
MRV	Monitoring Reporting and Verification
NADMO	National Disaster Management Organisation
NCRC	Nature Conservation Research Center
NGOs	Non-Governmental Organisations
NREG	Natural Resources and Environmental Governance
NFF	National Forest Forum
NRCD	National Redemption Council Decree
NTFPs	Non Timber Forest Products
NATSC	National Tree Seed Centre
OASL	Office of the Administrator of Stool Lands
PF	Process Framework
REDD	Reducing Emissions from Deforestation and forest Degradation
REDD+	REDD plus sustainable management of forest, forest conservation, enhancement of carbon stocks
RMSC	Resource Management Support Centre
R-PP	Readiness Preparation Proposal
SEA	Strategic Environmental Assessment
SESA	Strategic Environmental and Social Assessment
SRI	Soil Resource Institute of Ghana
SRA	Social Responsibility Agreement
TAs	Traditional Authorities
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention for Climate Change
VCS	Voluntary Carbon Sequestration
VPA	Voluntary Partnership Agreement
WB	World Bank
WD	Wildlife Division
WRC	Water Resources Commission

Table of Content

LIST OF ABBREVIATIONS.....	ii
EXECUTIVE SUMMARY	vii
1.0 INTRODUCTION	1
1.1 The Purpose of the ESMF	1
1.2 Approach to the ESMF Study.....	1
1.2.1 Baseline Information	2
1.2.2 Stakeholder Consultations.....	2
1.2.3 Analysis of data and Content of report	3
2.0 DESCRIPTION OF THE PROPOSED REDD+ STRATEGY INTERVENTIONS	4
2.1 Implementing and collaborating institutions	7
3.0 INSTITUTIONAL FRAMEWORK	8
3.1 World Bank Safeguard Policies	9
4.0 GHANA BASELINE DESCRIPTION	11
4.1 Environmentally sensitive and protected areas	11
4.2 Forestry and agricultural (cocoa) sectors	17
4.3 Analysis of carbon stock distribution	19
4.4 Carbon emissions.....	20
5.0 REDD+ ACTIVITIES POTENTIAL IMPACT ISSUES AND CONCERNS AND SCREENING.....	21
5.1 List of key REDD+ project activities/ interventions	21
5.2 Description of some potential impact issues	24
5.2.1 Impacts on Biodiversity	24
5.2.2 Impacts on water resources	25
5.2.3 Impacts on soil	25
5.2.4 Other Impacts	26
5.2.5 Social Issues with Plantation Plantings	26
5.3 Some issues arising from the SESA study	27
6.0 GUIDELINES FOR MITIGATION AND ENHANCEMENT MEASURES.....	32
6.1 Mitigation Measures	32
7.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN	36
7.1 The Environmental and Social Screening Process	36
7.2 ESIA Procedure to be followed for Projects	37
7.3 Technical Specifications and Standards.....	41

7.3.1	Technical specifications	41
7.3.2	Environmental standards.....	41
8.0	INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION	42
8.1	Institutional roles and responsibility for the ESMF Implementation	42
8.1.1	Implementing Plans	43
8.2	Institutional Strengthening and Capacity Building	44
8.2.1	Forestry Commission Environmental and Social Safeguard Focal Point	44
8.2.2	Environmental and social consultants.....	44
8.2.3	Regional Environmental and Social Focal Points	44
8.3	Institutional Strengthening and Capacity Building	45
8.4	Budgetary provisions	48
9.0	MONITORING AND EVALUATION.....	50
10.0	CONSULTATIONS, ESMF DISCLOSURE AND GRIEVANCE MECHANISM.....	53
10.1	Stakeholder consultations	53
10.2	ESMF Disclosure	53
10.3	Grievance Mechanism	53
11.0	CONCLUSION	56
12.0	REFERENCES/ BIBLIOGRAPHY	57

List of Figures

Figure 1: Drainage Map of Ghana	14
Figure 2: Map of Protected Areas of Ghana	15
Figure 3: Vegetation/ Ecological Map of Ghana	16

List of Tables

Table 1: List of some stakeholders consulted in the regions	2
Table 2: Proposed REDD+ strategy options	5
Table 3: Description of Protected Areas in Ghana	12
Table 4: Potential adverse environmental and social impacts/ issues	22
Table 5: REDD+ sub- project activities and potential environmental and social impact issues/ concerns	29
Table 6: Environmental and social mitigation measures	33
Table 7: Summary of environmental screening process and responsibilities	40
Table 8: Summary of environmental and social due diligence capacity and training programme	47
Table 9: Estimated budget to implement ESMF	49
Table 10: ESMF and RPF monitoring indicators and responsibilities	50
Table 11: Monitoring indicators and responsibilities for implementation of mitigation measures	51
Table 12: Grievance redress process	55

Annexes

Annex 1: Policy and Legislative Framework

Annex 2: Some recommendations from the SESA study

Annex 3: Checklist for Environmental and Social Screening of Projects

Annex 4: Environmentally sensitive/ critical Areas

Annex 5: Undertakings requiring Registration and Environmental Permit (EPA LI 1652 (1999))

Annex 6: Sample copy of EPA Registration Form, EA1

Annex 7: Terms of Reference for recruitment of ESIA Consultants

Annex 8: Stakeholder Consultations

EXECUTIVE SUMMARY

Ghana is a key participant country in the FCPF and the Government is currently implementing its Readiness Preparation Proposal (R-PP) with regards to the REDD+ Readiness phase, and has requested a FCPF Readiness Preparation Grant to support the design of its REDD+ Strategy. This Strategy aims to control deforestation and degradation in order to reduce green house gas emissions into the atmosphere.

The purpose of the ESMF is to: establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of interventions to be financed under the project; specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project interventions; and determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.

The ESMF for the REDD+ has been prepared to be consistent with the already drafted ESMF for the other World Bank financed forest management initiative, the Forestry Improvement Programme (FIP) and other related programmes such as the DGM and the UNFCCC. This will ultimately feed into a sector Safeguards Information System.

The proposed REDD+ strategy options for addressing the preliminary identified drivers, according to the R-PP comprise the following:

- A. Improve the quality of multi-stakeholder dialogue and decision –making
- B. Clarify natural resource rights
- C. Improve forest law enforcement, governance and trade
- D. Address unsustainable timber harvesting by supporting sustainable supply of timber to meet export and domestic / regional timber demand
- E. Address problem of local market supply
- F. Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)
- G. Strengthen local decentralised management of natural resources
- H. Improve sustainability of fuel wood use
- I. Improve quality of fire-affected forests and rangelands
- J. Address local market demand
- K. Improve returns to small-scale enterprise
- L. Improve regulation of mining activities to reduce forest degradation Rehabilitation of degraded forest reserves
- M. Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases)

The REDD+ will therefore achieve GHG emissions reductions through one or a mixture of the following forestry strategies:

- reduced deforestation and forest degradation;
- forest conservation;
- sustainable management of forests; and
- enhancement of forest carbon stocks (afforestation and reforestation).

The key project activities which have been identified to impact on the environment may comprise the following:

- On reserve rehabilitation;
- Tree Plantation- On Reserve;
- Enrichment Planting On Reserve;
- Tree Plantation- Off Reserve;

- Migrate Sacred Groves to Community Dedicated Forest Reserves;
- Landscape Planning for corridors;
- Plantation Field Trials/ Models/ Innovations

- Ecosystem friendly cocoa production;
- Shade Tree Planting in Cocoa Farms;
- Shade Trees in Agricultural Farming Systems;
- Cocoa Marketing Incentives and
- Sustainability Production;

- Non-Timber Forest Industry Promotion;
- Development of wood based fuel supply (woodlots etc);
- Timber and Non-Timber Innovation, Community Based Enterprise Trials;
- Community Based Enterprises;
- Promotion of Improved Charcoal Production;

- Community Based Nurseries;
- Seed Orchards In Districts on Reserve;
- Model Forest Nurseries for Native Species;
- Cold room storage facilities.

Meetings were therefore held with key officials and opinion leaders throughout the country to gauge level of awareness and involvement with the project, their concerns about project implementation, and to obtain relevant documents for the baseline study. Some crucial information provided by the SESA team also enriched this assessment. The consultations also served as a means to gather information on institutional mandates and permitting requirements to inform the development of the Projects. The list of stakeholders contacted is given in the report as well as the issues which were discussed.

The significant potential social and environmental impact issues which may become important from the implementation of the project activities have been provided in the report. Mitigation guidelines have also been given to address the significant impacts. The responsibilities for implementing these measures are described in the report.

An Environmental and Social Management Plan (ESMP) is presented to provide guidance to the MLNR and the Forestry Commission on procedures to be followed and standards to be met in implementing the projects which should be in agreement with national and World Bank safeguard provisions. Roles and responsibilities of the FC/FSD and other collaborating agencies are clearly defined as well as monitoring protocols to be followed to ensure that the required

provisions are adhered to. Budgetary estimates are provided to support the implementation of the environmental and social management plan.

The main responsibility for implementing the ESMF rests with the FC and it is proposed to have Focal Point to spearhead all environmental and social safeguard activities. The FSD regional managers will oversee the implementation of all actions to mitigate adverse environmental and social impacts within their respective operational regions, and also supervise their district managers to ensure sound management practices at the community level.

The capacity and competence with which the FC would carry out their respective design, planning, approval, permitting, monitoring and implementation roles will, to a large extent, determine the success and sustainability or otherwise of the Programme. The capacity building requirements will mostly be in the form of training workshops and a Plan as well as a budget of US\$1,400,000 has been presented in the report for the 4 year project period.

Monitoring plans have been developed for implementation at different levels, namely at the: REDD+ and national Policy level; Environmental and social safeguards framework level; and Project level. The Plan is accompanied by verifiable indicators as well as responsibilities for the various monitoring issues.

1.0 INTRODUCTION

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a proposed global mechanism to mitigate climate change, while mobilizing financial resources for socio- economic development in forest countries. The Forest Carbon Partnership Facility (FCPF), facilitated by the World Bank, brings together 50 donor and forest country participants with the aim of supporting the forest countries in the preparation and subsequent implementation of their REDD+ Strategies.

Ghana is a key participant country in the FCPF and the Government is currently implementing its Readiness Preparation Proposal (R-PP) with regards to the REDD+ Readiness phase, and has requested a FCPF Readiness Preparation Grant to support the design of its REDD+ Strategy. This Strategy aims to control deforestation and degradation in order to reduce green house gas emissions into the atmosphere.

This Environmental and Social Management Framework (ESMF) is prepared to contribute to the smooth implementation of the REDD+ strategies by providing guidelines to mitigate all anticipated adverse impacts during the planning and implementation of the various sub projects under the strategic interventions. The contract to prepare the Strategic Environmental and Social Assessment (SESA) for the REDD+ Mechanism in Ghana included the preparation of this ESMF as well as a Resettlement Policy Framework (RPF) as separate documents.

1.1 The Purpose of the ESMF

The purpose of the ESMF is to:

- Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of interventions under the REDD+ mechanism
- Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project interventions;
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and
- Provide practical information on resources for implementing the ESMF.

1.2 Approach to the ESMF Study

This ESMF study has benefitted from the preparation of the following recent reports:

- Environmental and Social Management Plan (ESMP) for the African Development Bank (AfDB) component of the Forest Investment Program (FIP);
- Environmental and Social Management Framework (ESMF) for the World Bank financed FIP; and
- The updated Strategic Environmental and Social Assessment (SESA) study for the REDD+ mechanism.

The ESMF for the REDD+ is national in scope compared to the FIP which is sub- national and focused on the pertinent regions of the Brong Ahafo and Western Regions. The Consultant has therefore actively engaged key stakeholders including the relevant government ministries and agencies such as the MMDAs throughout the country to prepare this report.

1.2.1 Baseline Information

The consultant, through the preparation of the earlier and updated SESA, collected and analyzed baseline information regarding:

- key components of the Project
- relevant existing environmental and social policies, laws and regulations related to the forestry sector in Ghana,
- 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 ESA studies available as reference.

1.2.2 Stakeholder Consultations

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 REDD+ mechanism as well as with linkages to the poor and marginalized.

The consultant visited six (6) out of the ten (10) regions of Ghana and these visits spanned all the different ecological zones of the country. The visited regions comprise Western, Central, Brong Ahafo, Ashanti, Northern, Upper East. The rest participated in the SESA regional workshops and where their views were solicited on the key issues.

Some of the stakeholders consulted in the respective regions are listed in the table below.

Table 1: List of some stakeholders consulted in regions

No.	Region	List of some stakeholders consulted
1.	Western	FSD, WILDLIFE, TIDD, DISTRICTS- (Enchi, Jomoro, Sefwi Wiawso), Communities (Nsuano, Kunuma, Amokwa (CREMA))
2.	Central	Forest Districts (Assin Fosu, Cape Coast)
3.	Ashanti	FSD, RMSC, TIDD, FORIG, Tropenbos Int (NGO), OASL, Lands Commission, IRNR (KNUST), FORM Ghana
4.	Brong Ahafo	FSD (Goaso, Kintampo), FORM Ghana, UENR, OASL, Communities (Boadikrom, Akwaboa nr 2, Nante, Krabonso Dagomba Lines)
5.	Northern	FSD (Bole, Tamale), Lands Commission, GNFS, OASL, MOFA, RCC, NGOs (Tree Aid, Care Int, Assoc of Church Based Devt), Communities (Zakaryili, Moya, Grupe, Nasayeli)
6.	Upper East	FSD (Bolgatanga), Wildlife Division, Lands Commission, OASL, EPA, GNFS, FORIG, MOFA, WRC, NADMO, RCC, Communities

The ultimate beneficiaries of this project may be the fringe communities who manage land and forests for their livelihoods and will have access to new skills, opportunities and markets. They were therefore mostly the target for consultation. The Ministries, Departments and Agencies responsible for natural resources and environmental management 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 institutional and policy reform, and improved resource management practices in the key regions and sectors of focus.

1.2.3 Analysis of data and Content of report

The Consultant has analysed the gathered data and produced the ESMF which comprises the following content:

- Introduction
- Description of the Project and Related Activities
- Institutional Framework
- Ghana Baseline Description
- REDD+ 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

2.0 DESCRIPTION OF THE PROPOSED REDD+ STRATEGY INTERVENTIONS

Addressing deforestation and forest degradation presents a number of challenges in Ghana, though success in REDD+ policy making would offer significant benefits for the society not only in the area of carbon emissions reductions but also in relation to biodiversity conservation, forest industry, agriculture and livelihoods. Below is a list of the proposed strategy options for addressing the preliminary identified drivers, according to the R-PP:

- A. Improve the quality of multi-stakeholder dialogue and decision –making
- B. Clarify natural resource rights
- C. Improve forest law enforcement, governance and trade
- D. Address unsustainable timber harvesting by supporting sustainable supply of timber to meet export and domestic / regional timber demand
- E. Address problem of local market supply
- F. Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)
- G. Strengthen local decentralised management of natural resources
- H. Improve sustainability of fuel wood use
- I. Improve quality of fire-affected forests and rangelands
- J. Address local market demand
- K. Improve returns to small-scale enterprise
- L. Improve regulation of mining activities to reduce forest degradation Rehabilitation of degraded forest reserves
- M. Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases)

Table 2 provides details of the indicative REDD+ strategies. In summary, REDD+ achieves GHG emissions reductions through one or a mixture of the following forestry strategies:

- reduced deforestation and forest degradation;
- forest conservation;
- sustainable management of forests; and
- enhancement of forest carbon stocks (afforestation and reforestation).

Table 2: Proposed REDD+ Strategy Options

THEME: FOREST SECTOR POLICY, LEGISLATION AND GOVERNANCE ACTIVITIES			
Challenge / Immediate Driver of Deforestation	Candidate element within national REDD strategy	Sub-component	Activities proposed under R-PP
Gaps in Forest Policy, and Policy Realisation	A: Improve the quality of multi-stakeholder dialogue and decision – making	A: Strengthened National Forest Policy Forum and improved Forest Information Dissemination	A. Maintain links to ongoing Forest Policy Review
	B. Clarify rights regime	B. Carbon rights allocated	B. National Expert Consultation on the Allocation of Carbon Rights, to review terrestrial carbon rights, benefit sharing and tree tenure
	C. Improved FLEGT	C. Implement VPA and related actions	C. Maintain links to VPA process, and integrate actions as appropriate
	D: Address unsustainable timber harvesting by supporting sustainable supply of timber to meet export and domestic / regional timber demand	D: Policy measures to ensure a sustainable timber industry, including on-reserve rehabilitation, plantations development and off-reserve actions (incl. tree tenure reform and REDD-friendly cocoa)	D. National Expert Consultation on Provisioning of the Timber Supply
	E. Address problem of local market supply	E. Better regulation of small scale lumbering (SSL), sustainable supply of timber to meet export and domestic / regional timber demand, implemented	E: Working Group on Local Market Timber Supply (or amalgamate with proposed VPA action)
Demographic Pressures	F: Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)	F1. Support Ecosystem-friendly Cocoa Production F2. Improve productivity of farmland F3. Improve law enforcement on FR encroachment F4. Promote ecosystem-friendly agro-industry development	F. Liaise with MoFA, COCOBOD and Cocoa Research Institute F. Working Group on REDDplus-friendly Cocoa Production (Cocoa Carbon) F. Working Group on Low Carbon Agro-industrial Development
	G. Strengthen local decentralised management of natural resources	G1: Support training in forest and resource management at district level administrations (already part of NREG) G2: Support pilot projects in decentralised environmental management and resource planning,	G. Maintain links to existing NREG strategy and Ghana's long-term development plan (under preparation; successor to GPRSII)

		through national agencies (EPA, MLGRD)	
	H. Improve sustainability of fuel wood use	H1: Implement policy measures and fuel efficiency initiatives projects that will reduce carbon emissions arising from charcoal and fuel wood use. H2: Develop wood-based fuel supply (woodlots, etc.) H3: Develop alternatives to primary fuels	H: Working Group on Charcoal and Fuel wood
	I. Improve quality of fire-affected forests and rangelands	I. Policy and practical measures to address degradation caused by fire in the agricultural and livestock production cycles (e.g. rangeland zoning strategies; alternative grass control methods, incentives for community fire management; payments for ecosystem services)	I1. Maintain links with National Wildfire Policy and Sustainable Land Management Programme I2. Challenge Fund for projects on Fire Control
Economic Forces	J. Address local market demand	J. Timber supply situation rationalized	A-E above
	K. Improve returns to small-scale enterprise	K. Eco-friendly approaches to forest land development K. Intensification strategy supported	F, G, I above
	L. Improve regulation of mining activities to reduce forest degradation	L: Implementation by mining companies of EIA requirements for forest rehabilitation following the closure of mining sites enforced L: Measures to reduce forest degradation as a result of unregulated (sometimes illegal) small scale mining implemented	Maintain links to NREG
Natural causes [NC]	M. Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases	M. Policy implantation takes account of risks from natural events	M. Review permanence and liability issues as the R-PP develops

(Source: Revised Ghana R-PP, Final December 2010)

2.1 Implementing and collaborating institutions

The main responsible ministry is the Ministry of Lands and Natural Resources (MLNR) with the Forestry Commission as the lead implementing agency. The Forestry Commission will work with partners with skills in communication, community engagement, landscape management practices especially those already engaged with CREMA development. Others are stakeholders in the cocoa landscape supply chain and will include COCOBOD, licensed buying companies, private agents and extension agents and service providers (Solidaridad, NCRC, IUCN etc) , research institutions (FORIG and CRIG) .

The project will also support the GoG in regular communication and coordination among REDD+ financed interventions and related activities, to promote synergies among other forestry programmes such as the FIP projects (WB, AfDB, IFC, DGM) as well as information and knowledge sharing among other REDD+ institutions and countries.

3.0 INSTITUTIONAL FRAMEWORK

The national policy statements and legal provisions related to the project are presented in the **Annex 1** of this report. The institutions with urgent bearing are described below:

Environmental Protection Agency

As the law stipulates, the EPA is statutorily mandated to ensure that the implementation of all undertakings do not harm the environment. Currently, the Agency has no district offices but the ten (10) regional offices are largely accessible and sufficiently staffed and equipped to perform its functions satisfactorily. It is expected that the sub projects under REP II will abide by statutory requirements and the implementing institutions will liaise sufficiently with the Agency to ensure compliance.

Forestry Commission

The Forestry Commission of Ghana is responsible for the regulation of utilization of forest and wildlife resources, the conservation and management of those resources and the coordination of policies related to them. The Commission embodies the various public bodies and agencies that were individually implementing the functions of protection, management, the regulation of forest and wildlife resources. These agencies currently form the divisions of the Commission:

- Forest Services Division
- Wildlife Division
- Timber Industry Development Division
- Wood Industries Training Centre
- Resource Management Support Centre

It is the aim of the Commission to be a corporate body of excellence in the sustainable development management and utilization of Ghana's forest and wildlife resources meeting both national and global standards for forest and wildlife resource conservation and development.

District/Municipal/Metropolitan Assemblies

The current local government structure or the district assembly system is established by two main Acts, namely Act 462 and Act 480. Both Act 462 and Act 480 designate the District/Municipal/Metropolitan Assembly as the planning authority, charged with the overall development of the district. Both Acts provide that local people (communities) must participate in the formulation of the District Development Plan. A key feature of this Assembly System is the involvement of communities or zones or whole villages who elect their representatives (Assemblymen) to the Assembly. The structure of the Assembly comprises Unit Committees which are usually formed at the community levels, and the Urban/Town/Area Councils.

The Regional Coordinating Councils (RCCs) are active participants in the REP II and therefore the DAs through the Assemblypersons will as and when required, liaise between subproject owners and the administrative authorities for permitting and other statutory issues.

3.1 World Bank Safeguard Policies

The proposed Project is anticipated to have positive social and environmental impacts. Component 2 may result in changes in land use which impact livelihoods. However, these will be voluntary and based on community based decision making. The specific locations of activities and intervention are still being identified. A Social and Environmental Strategic Assessment (SESA) was prepared under FCPF which identified other possible social and environmental risks. Also, an Environmental and Social Management Framework (ESMF) was developed under the FCPF.

Based on the work done to date, a project specific ESMF and Process Framework will be developed, consulted upon and disclosed by the time of appraisal.

- Environmental Assessment OP/ BP 4.01. The project will engage in a number of activities that use forest resources in selected sites and potentially impact other environmental areas. These activities may have environmental impacts on a limited scale. An ESMF will be prepared, consulted upon, and disclosed before appraisal.
- Natural Habitats OP/BP 4.04. Some of the forest and woodlands to be targeted will contain critical ecosystems; the project will enhance the quality of the management of these critical ecosystems and reduce risks associated with potential economic development. The ESMF will provide guidance on avoiding or mitigating impacts on natural habitats.
- Forests OP/BP 4.36. Forest policy and management are a primary focus of this project, in addition to trees in the agroforestry landscape. The project will explore integrated and participatory forest management as part of a strategy of increasing carbon sequestration through sustainable forest management. The ESMF will include guidance on managing forestry issues.
- Physical Cultural Resources OP/ BP 4.11. This policy could be triggered if project activities promote actions in areas containing sites deemed physical cultural resources by the local communities (e.g. holy/secret sites such as sacred groves, sacred forests, etc.). Though it is not anticipated that the project will have negative impacts on any such sites, the existence of any such sites and the corresponding need to trigger this policy will be determined once the targeted zones are confirmed.
- Pest Management OP 4.09. Support integrated approaches to pest management, identify pesticides that may be financed under the project and develop appropriate pest management plan to address the risks.
- Involuntary Resettlement OP/BP 4.12. No involuntary resettlement is anticipated. However, there may be cases where use and access to resources may be restricted due to changes in forest management and resource management plans. Therefore a Process Framework will be prepared.

Resettlement Policy framework

A Resettlement Policy Framework (RPF) document has been prepared under separate cover for the project. It entails involuntary resettlement, acquisition of land, impact on livelihood, or restricted

access to natural resources under the World Bank safeguard policy on involuntary resettlement (OP 4.12). The RPF supports the activities of project stakeholders with regard to addressing compensation issues as related to affected properties/livelihoods including land and income generation activities during Project implementation.

4.0 GHANA BASELINE DESCRIPTION

The Republic of Ghana is situated on the West Coast of Africa between latitude 4° 30' and 11° N and longitude 1° 10' E and 3° 15' W with a land size of 238,539km². It has a total border of 2,093km, including 548km with Burkina Faso to the north, 688km with Côte d'Ivoire to the west, and 877km with Togo to the east. It has a coastline on the Gulf of Guinea, part of the Atlantic Ocean, measuring 539km. The country is divided into 10 administrative regions and 170 districts.

The country is characterised by fairly low relief with few areas of moderate elevation in the north and east. The land is generally 600 meters above sea level. Physiographic regions include the coastal plains, the forest dissected plateau, and high hill tops which are important ecological subsystems in a generally undulating terrain. At the southern and northern margins of the Volta Basin, there are two prominent areas of highland – the Kwahu Plateau, and the Gambaga Escarpment. On the eastern margins of the Volta Basin is a relatively narrow zone of high mountains running in a south-west to north-east direction with the Akwapim, Buem, Togo Ranges registering the highest point (Mt. Afadjato) in the country.

Average rainfall over the country is about 1,260 mm/ year, but ranges from 890 mm/year in the coastal zone near Accra to 2,030 mm/year in the southwestern rainforests. The rainfall is bi-modal in the southwestern forest zone, giving a major and a minor growing season; elsewhere, a uni-modal distribution gives a single growing season from May to October. There are two broad ecological zones - a high forest zone (HFZ) covering much of the southern third of the country, and a savannah zone covering two thirds of the considerably drier northern Ghana.

Ghana is drained by three (3) main river systems comprising the Volta, South western and Coastal River Systems. The Volta in Ghana occupies nearly two thirds (70%) of the land area of Ghana, the south western 22% and the minor coastal 8%. Global water resources are estimated at 53.2 km³ per year, consisting of 30.3 km³/year of internally produced water resource, and 22.9 km³/year of runoff from other countries.

4.1 Environmentally sensitive and protected areas

The environmentally sensitive and protected areas in the country are described in the following table. Ghana has 3,725 species of plants, 729 birds. The Ghana EPA has also classified 'no go' areas for development projects which are given in the annex of this report.

Table 3: Description of Protected Areas in Ghana

Typology	Area	Comments
Off-Reserve areas	201,000 km ²	Off-reserve areas are lands which are currently (or were) forests but where the policy presumption is that these lands would be converted to other use – in particular, agriculture. This includes 5,000 km ² of unreserved forests, 60,000 km ² of bush fallow, 71,000 km ² of bush fallow, 36,000 km ² of unimproved pasture, and 29,000 km ² of tree and annual crop land
Forest Reserves	26,000 km ²	Areas which have been designated as forest reserves where no farming is allowed (except for in “admitted” farms, that were usually present at the time of reservation of the forest).
Dedicated Forests	4 km ²	Dedicated forests are designed to enable communities to manage their own forest ‘reserves’ based on approved management plans. These are in the form of patches of forests, sacred groves and secondary forests in off-reserve areas. A dedicated forest management scheme was initiated in 1994, under a pilot scheme, two communities were assisted to declare Dedicated Forests (215 ha & 190 ha), in Fosu district to determine the feasibility of communities. The results proved so positive, and draft legislation and a programme to promote dedicated forests were formulated in 1997, but no further action was taken.
Sacred Groves	Unknown	There are numerous sacred groves throughout Ghana. These are managed wholly by communities but they have no legal status and are extremely small in most instances
Protected Areas (National Parks)	10,500 km ²	Generally a large and relatively undisturbed area of outstanding natural value containing representative samples of major natural regions, features or scenery and containing one or several entire ecosystems and not materially altered by man (or reflecting longstanding cultural land management practices). The areas should be accessible to the public, have high recreational, educational, inspirational and cultural potential of clear benefit to the local people, the region and the nation.
Resource Reserves (Game Production Reserve)	1,664 km ²	Areas of variable size in which habitats are managed to guarantee conditions essential to the well being of selected species for the sustained production of wildlife products (meat, timber, pasture, fruits, honey and other Non Timber Forest Products (NTFPs) for cultural practices, tourism and trophy hunting. These areas may be managed by a central authority, or through agreement, by other levels of government, special trusts or local community institutions as appropriate under the overall supervision of GWD.
Wildlife Sanctuaries	66km ²	Wildlife sanctuaries can be created on state land or local land. There is a revenue sharing mechanism at Agumatsa Wildlife Sanctuary in place. (Community 57%, FC 23% and Hohoe Dist Assembly 20%)
CREMA-Community Resource Management Area	30km ²	The Community Resources Management Area is a legally recognized unit of management that is capable of managing the wildlife resources within the defined area. Devolution of authority to the CREMA to the Executive Committee is conditional and confers the right to restrict access to the common property and extra-farm resources. This provides the incentives for sustainable management of wildlife resources. So far only 1 CREMA (Amokwasuazo) has received the authority to manage its resources.

Typology	Area	Comments
Globally Significant Biodiversity Areas- GSBAs	2,302 km ²	Legally established globally significant biodiversity areas identified within the existing forest reserve system, forming a potential network of thirty forest reserves which are proposed for either full (11 reserves) or partial (19 re-serves) protection to provide global security for floristic diversity, these in-clude GSBAs and Southern Dry Forests the Provenance Protection Areas.
Strict Nature Reserve (SNR)	385 km ²	Only 1 Strict Nature reserve, Kogyae, has been created. Originally created from a Forest Reserve it was taken over by the WD in 1971 and established as an IUCN Category I strict nature reserve. However, the WD has been unable to evict a number of farms and settlements that have occurred within the reserve.
Ramsar Sites	1,784 km ²	6 Ramsar sites are listed as wetland sites of international importance. Under the Convention there is a general obligation for the Contracting Parties to include wetland conservation considerations in their national land-use plan-ning. They have undertaken to formulate and implement this planning so as to promote, as far as possible, "the wise use of wetlands in their territory"

The main drivers of deforestation in Ghana are agricultural expansion, domestic demand for timber relative to sustainable supply, encroachment, illegal logging and weak land use planning and control. Ghana's deforestation rate is about 2% per year, representing a loss of 65,000 ha of closed forest per year. Recent assessments indicate that rates may have been accelerating in the southern Brong Ahafo and northern portion of the Western Region.

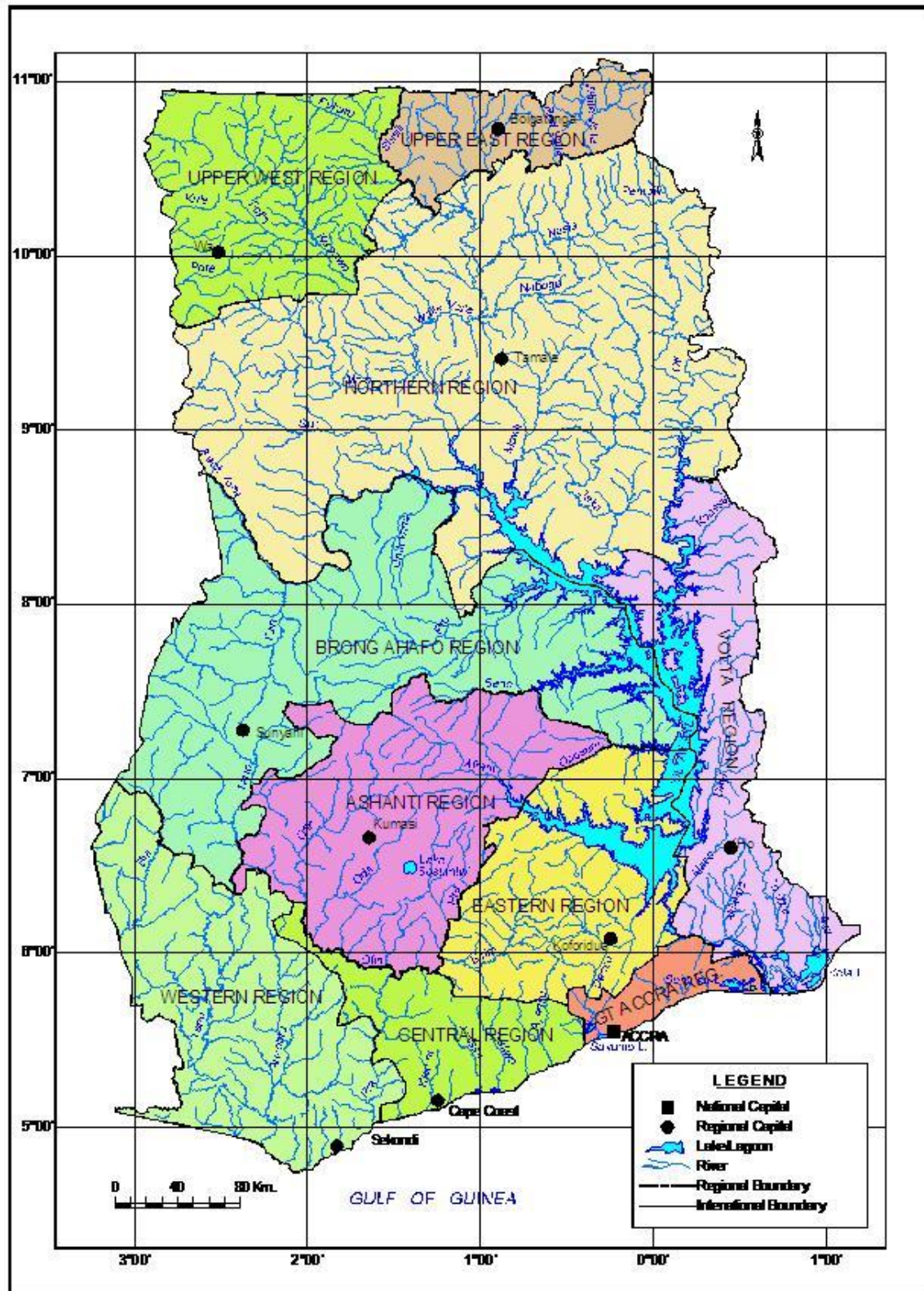


Figure 1: Drainage map of Ghana

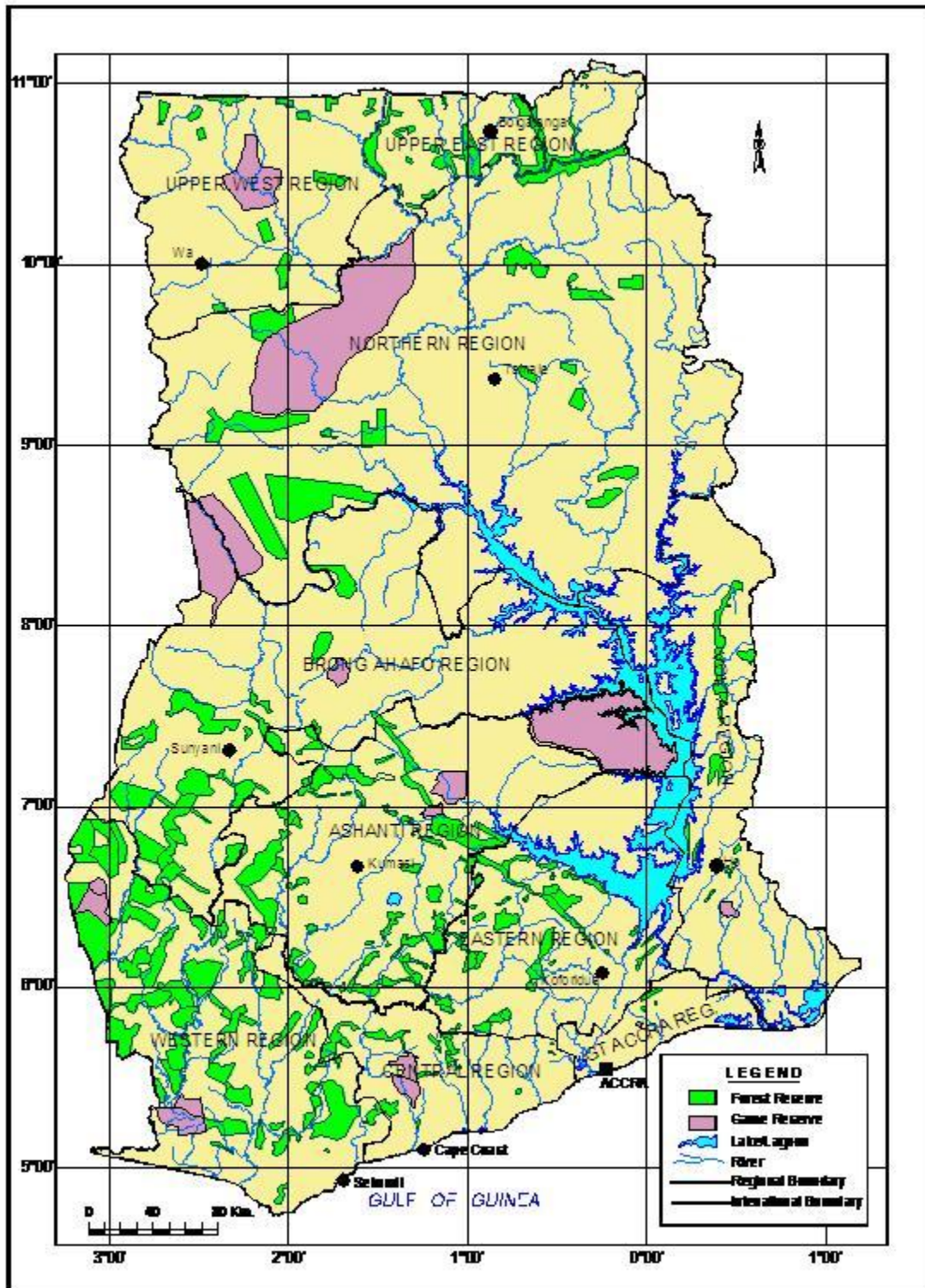


Figure 2: Map of protected areas in Ghana

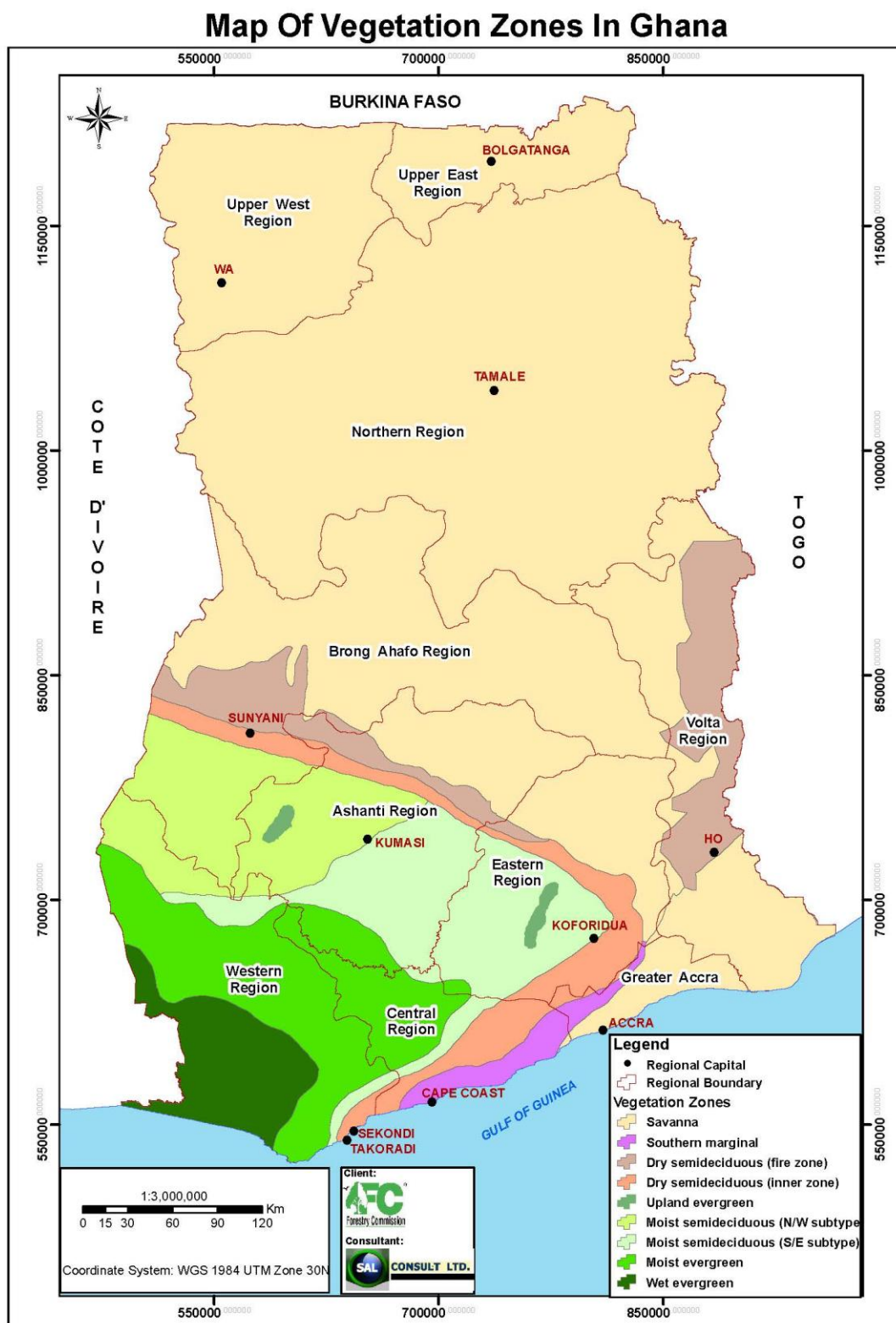


Figure 3: Vegetation/Ecological map of Ghana

4.2 Forestry and agricultural (cocoa) sectors

The formal forestry and wildlife sector employs about 120,000 Ghanaians, with employment predominantly in log processing industry. The timber industry is the fourth largest foreign exchange earner after minerals, cocoa and oil exports. Primary wood and processed products account for 89% and 11% of timber exports, respectively.

According to the Forestry Development Master Plan (FDMP) in 1996 the annual sustainable harvest is 1 million m³, of which 0.5 million m³ from the FRs based on inventory and yield data, and 0.5 million m³ from off-reserve forests based on estimates. This latter was later revised to 1.5 million m³ around 2002, based mainly on economic considerations, and hence the current annual allowable cut (AAC) is set at 2 million m³.

The informal forestry sector, mainly chain saw milling (CSM), is almost equal in size of formal sector in terms of employment and production. CSM, though illegal since 1998, provides the bulk of the supply (84%) for the domestic market, with estimated volume of around 0.5 million m³ and market value of around 280 million GHC. It is also the main source of (illegal) overland export lumber to neighbouring countries with an estimated volume of around 260,000 m³. It provides employment for around 130,000 people and livelihood for 650,000 people, and is the source of considerable revenue, to the mostly urban financiers of the operations (Marfo 2010). The disconnect between a growing domestic demand and sustainable wood harvest creates huge pressure on forests, particularly in off reserve areas.

In addition to timber, forests provide the main source of domestic energy in the form of fuelwood and charcoal. The average annual per capita wood energy consumption estimate is 1.3 m³. This would give a total estimated wood removal of more than 30 million m³ for fuelwood and charcoal, or about 85% of the total wood removal in Ghana.

Non-timber forest products (NTFPs) are also very important, especially for women, but much of their value is not formally recorded and remains inadequately represented in policy analysis.

Agricultural crops, both subsistence (e.g. maize, cassava, millet), and cash crops, (e.g. as cocoa, cashew, oil palm and coffee) make up 64% of the natural capital of Ghana. Agricultural land use accounts for more than 50% of all land use, and though decreasing, still provides employment for an estimated 60% of the population, particularly women (53% of whom are employed in agriculture). It is primarily small holder farming though it is important to note that certain crops such as cocoa have been intensively commercialized already for at least a century.

The cocoa sector in Ghana provides the primary livelihood to an estimated 800,000 farm household. Cocoa farming is one of the dominant land use activity in Ghana with an estimated cultivation area of over 1.6 million ha (World Bank 2012a). Cocoa farm sizes are relatively small with over 84% of the cocoa farms and 44% of the area falling in the size range of below 4 ha (Rice & Greenberg 2000).

Ghana is the second largest producer of cocoa in the world. In 2011, Ghana earned over US\$2.87 billion from cocoa export. The importance of the sector is reflected by the fact that the sector, including the Cocoa Board (COCOBOD), operate directly under the Ministry of Finance and Economic Planning (MoFEP) rather than under the Ministry of Agriculture (MoFA). Overall production continues to grow rapidly, 15% per year 2001 – 2005, and accounted for 28% of the overall growth of the agricultural GDP.

In an effort to clearly understand cocoa's role in driving degradation and deforestation, and the potential to reduce emissions associated with land use change driven by cocoa farming, a multi-stakeholder working group consisting of government, private sector and civil society came together in 2011 to conduct a more detailed analysis of the cocoa sector and its role as a principal driver of deforestation in the high forest zone.

The results of this analysis determined that despite major gains in national production (cocoa production had increased from a base of 300,000 tons in the late 1980s to an all-time high of 1 million tons in 2011/2012, extensive (or expansive) cultivation of cocoa in Ghana is still the most widely practiced and ubiquitous land use across the program area. What this means on the ground is that in order to maintain or increase yields (and income) farmers establish new farm, at the expense of forests, instead of investing in improved management of existing farms or replanting/rehabilitation of old farms.

In addition, there has also been a rapid transition from shaded cocoa cultivation to progressively low/no shade cocoa cultivation, driven mainly by short-term profits, increasing competition for land, and a rising demand for domestic timber in combination with an absence of information about recommended practices and tree tenure/benefit sharing arrangements that given farmers no economic incentives to maintain trees on-farm.

Overall, the gap between farmers' average yields (approximately 400 kg/ha) and their potential yield (>800 kg/ha) remains unacceptably large, and the pressure on forests reserves from smallholder cocoa farmers' expansion and loss of shaded cocoa forests from reductions in shade continues.

The private sector and civil society are investing substantial resources into cocoa projects and programs. The most common institutional arrangement has been the use of public-private partnership (PPP) models. The introduction of social and environmental standards through certification, and efforts to improve access to education and other social amenities has also been the focus of these projects and social corporate responsibility initiatives. Despite the number of projects and programs in operation, there is no evidence that there has been a positive sector level impact on yields, nor a reduction in deforestation and degradation at the landscape scale.

As a result, the gap between farmers' yields and their potential yield remains unacceptably large and the pressure on forests reserves from smallholder cocoa farmers seeking to profit from the "forest rent" continues. Ghana's Cocoa Forest REDD+ Program aims to enable and facilitate a

transition to a climate-smart cocoa production system, while concurrently reducing emissions in the landscape.

It is estimated that 25% of the cocoa tree stock exceed their 30 year maximum production life. A tree planting and rehabilitation program was launched in 2010 to replace old and infected trees. Focus in the first phase is on the Eastern, Brong Ahafo, Central and Volta regions. Insecure land tenure and insufficient access to affordable credit are some of the major constraints in the cocoa sector.

Tree crops such as Oil Palm, Rubber Trees, Cashew etc. are envisaged to play an important role in agricultural development in Ghana (GoG 2011c). Especially the plans for and establishment of palm oil plantations has huge economic potential but are also the cause of major controversies in relation to clearing forests in West Africa (e.g. Liberia, Sierra Leone). The palm oil sector (300 – 350,000 ha) is largely small holder driven but may also become an area for large-scale investment and development in Ghana with current economic drivers persist, which potentially could impact on the HFZ.

4.3 Analysis of carbon stock distribution

Ghana's terrestrial carbon stocks are estimated to total 7.46 GtCO₂e, comprising 6.22 GtCO₂e, in above- and below-ground biomass and about 1.24 GtCO₂e in soil carbon to 1 m depth (Katoomba Group *et al.* 2011a). Reflecting rainfall and vegetation zones, biomass and soil carbon are distributed unevenly over the country. Areas of high biomass carbon density contain 6% of Ghana's biomass carbon but cover only 2% of the country's land area. High carbon density areas are associated with intact natural forest in the moist forest zone and contain over 730 tCO₂e/ha in above and below-ground biomass, and soil carbon (Katoomba Group *et al.* 2011a). Although the total area is small, mangroves also contain substantial carbon stocks per unit area (*cf.* Table 2).

Land-use and land-use change has added significant heterogeneity and variation in carbon stocks. Broadly carbon stocks decline from southwest to northeast, and moving from intact forest to increasingly open farming landscapes. The national biomass map shows that the highest biomass is in the HFZ, with carbon stocks (above and below-ground biomass, and soil carbon) ranging from 180 to more than 700 tCO₂e/ha. In the entire savannah and the transitional zone, i.e. the northern two-thirds of the country carbon stocks are on the average below 140 tCO₂e/ha.

Data on soil carbon stocks is limited. Conservative estimates based on IPCC default values estimate Ghana's soil carbon stocks to be about 260 tCO₂e/ha (RoG 2010b). Soil carbon stocks in the high forest zone and savannah zone would range from 110 – 340 tCO₂e/ha and from 100 – 125 tCO₂e/ha respectively. In the cultivated areas within the high forest zone soil carbon stocks range from about 100 – 260 tCO₂e/ha, while the respective estimates in the savannah zone would be 70 – 160 tCO₂e/ha (Abu-Bredu *et al.* 2010, Katoomba Group *et al.* 2011b).

4.4 Carbon emissions

According to Ghana's second national communication to the UNFCCC, Ghana's total emission in 2006 was about 24 MtCO₂e, amounting to around 1.1 tCO₂e per capita. Ghana's emissions were still low by global standard (0.05%) and ranked 108 in the world. However, the rapidly growing oil and gas sector (already third in export earnings in 2011) is changing Ghana's overall emissions profile. Consequently Ghana's position in the world ranking for overall emissions is expected to change dramatically in next few years.

Emission data for the period 1990 – 1996 indicates that the country was a net sink due largely to high levels of carbon sequestration in the Land Use, Land Use Change and Forestry (LULUCF) sector (66%) in 1990. However, Ghana's Second National Communication to UNFCCC estimated a 96% decrease of the net greenhouse gas removals within the LULUCF sector from around from -26.1 MtCO₂e in 1990 to -1.04 MtCO₂e in 2000, and 5.6 MtCO₂e in 2006 (cf. Figure 5). Since 2001 the sub-sector has become a net emitter, contributing 25%, of total emissions in 2006.

Deforestation and conversion of forests and grasslands was the major reason for this change accounting for 20% share of total LULUCF emissions in 1990 to 50% in 2006. This together with changes in forest and woody biomass accounted for 95% of the LULUCF emissions in 2006. Ghana's low carbon growth plan estimates that 65% of baseline emissions come from land use changes, whilst a further 10% comes from the burning of biomass. Combined, these are estimated to produce 42.3 MtCO₂e emissions. Nevertheless, the importance of baseline emissions from land use changes will have to be reviewed as Ghana's low carbon growth plan has not adequately incorporated the emissions from the rapidly growing oil and gas sector in the overall emissions.

5.0 REDD+ ACTIVITIES POTENTIAL IMPACT ISSUES AND CONCERNS AND SCREENING

A key activity under this study is to clearly indicate the potential environmental and social issues and concerns, both positive and negative, to be elicited by the project. This part of the study has been greatly facilitated by a good understanding of the project scope, as well as from the stakeholder engagement carried out.

5.1 List of key REDD+ project activities/ interventions

The specific sub project activities and interventions arising from the proposed strategy options/ interventions are listed in the table below. It is worth mentioning that these activities are consistent with both the African Development Bank (AfDB) and World Bank financed FIP sub projects.

Table 4: Potential adverse environmental and social impacts/ issues

Proposed national REDD+ strategy options	Sub-component	Potential REDD+ project activities of environmental and social concern
A: Improve the quality of multi-stakeholder dialogue and decision –making	A: Strengthened National Forest Policy Forum and improved Forest Information Dissemination	-
B. Clarify rights regime	B. Carbon rights allocated	-
C. Improved FLEGT	C. Implement VPA and related actions	-
D: Address unsustainable timber harvesting by supporting sustainable supply of timber to meet export and domestic / regional timber demand E/J. Address problem of local market supply and demand	D: Policy measures to ensure a sustainable timber industry, including on-reserve rehabilitation, plantations development and off-reserve actions (incl. tree tenure reform and REDD-friendly cocoa) E. Better regulation of small scale lumbering (SSL), sustainable supply of timber to meet export and domestic / regional timber demand, implemented J. Timber supply situation rationalized	1. On reserve rehabilitation; 2. Tree Plantation- On Reserve; 3. Enrichment Planting On Reserve; 4. Tree Plantation- Off Reserve; 5. Migrate Sacred Groves to Community Dedicated Forest Reserves; 6. Landscape Planning for corridors; 7. Plantation Field Trials/ Models/ Innovations
F: Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)	F1. Support Ecosystem-friendly Cocoa Production F2. Improve productivity of farmland F3. Improve law enforcement on FR encroachment F4. Promote ecosystem-friendly agro-industry development	8. Ecosystem friendly cocoa production; 9. Shade Tree Planting in Cocoa Farms; 10. Shade Trees in Agricultural Farming Systems; 11. Cocoa Marketing Incentives and Sustainability Production;
G. Strengthen local decentralised management of natural resources	G1: Support training in forest and resource management at district level administrations (already part of NREG) G2: Support pilot projects in decentralised environmental management and resource planning, through national agencies (EPA, MLGRD)	12. Non-Timber Forest Industry Promotion;
H. Improve sustainability of fuel wood use	H1: Implement policy measures and fuel efficiency initiatives projects that will reduce carbon emissions arising from charcoal and fuel wood use. H2: Develop wood-based fuel supply (woodlots, etc.) H3: Develop alternatives to primary fuels	13. Development of wood based fuel supply (woodlots etc); 14. Timber and Non-Timber Innovation, Community Based Enterprise Trials; 15. Community Based Enterprises; 16. Promotion of Improved Charcoal Production;
I. Improve quality of fire-affected forests and rangelands	I. Policy and practical measures to address degradation caused by fire in the agricultural and livestock production cycles (e.g. rangeland zoning strategies; alternative grass control methods, incentives for	-

	community fire management; payments for ecosystem services)	
K. Improve returns to small-scale enterprise)	K. Eco-friendly approaches to forest land development K. Intensification strategy supported	17. Community Based Nurseries; 18. Seed Orchards In Districts on Reserve; 19. Model Forest Nurseries for Native Species; 20. Cold room storage facilities.
L. Improve regulation of mining activities to reduce forest degradation	L: Implementation by mining companies of EIA requirements for forest rehabilitation following the closure of mining sites enforced L: Measures to reduce forest degradation as a result of unregulated (sometimes illegal) small scale mining implemented	-
M. Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases	M. Policy implantation takes account of risks from natural events	-

5.2 Description of some potential impact issues

This section provides some 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 5. The discussion that follows addresses these concerns from a thematic context, such as biodiversity, soils and social issues and concerns.

5.2.1 Impacts on Biodiversity

The establishment of large plantation schemes either in on reserve or in off reserve areas may have both negative as well as positive impacts to the associated environment and ecosystem. These impacts are a result of conversion of diverse mixed species standing forest tree species to monoculture stands or creating plantation growth in existing degraded lands.

On the negative side, use of herbicides to eliminate natural vegetative cover which could reduce plantation growth can cause impacts to soil health, associated wildlife and runoff into nearby streams and waterbodies. Once established, tree plantations may block the light and as leaf litter and plantation prunings accumulate, cause impacts to surviving plants from increased acidification and dehydration.

The conversion of natural habitats to tree plantations may reduce the abundance and diversity of mammals, birds, reptiles, amphibians, insects and other forms of life.

Aquatic organisms downstream of plantations may be impacted by chemical usage and erosion. Water-bodies may be polluted with organic plantation waste which absorbs oxygen, creating anaerobic conditions not conducive to natural species in the aquatic environment. Together with nutrients from fertilisers this can cause outbreaks of algae and invasive water plants. Increased turbidity from suspended particles affects aquatic fauna. Further harm to biodiversity can result from increased sedimentation in wetlands.

On the other hand, most African Acacias are nitrogen-fixing species which actually enrich the soil with organic nitrogen and improve soil fertility. It is therefore expected that the native tree species will be used for recovering a degraded or clear-felled native forests as well as in agroforestry. When planning tree plantations, use of diverse agroforestry systems can provide positive benefits in terms of productive outputs (timber, fruits, leaves, resins etc) as well as other beneficial ecosystem services (nutrient recycling, shelter for various symbiotic species and shade etc). Selection of tree species that will fulfill both functions is therefore, key to the success of the agroforestry component. The selection of native species will also guarantee minimum impact on biodiversity, including wildlife and birds.

5.2.2 Impacts on water resources

Plantation trees grow rapidly, taking up nutrients and water from the soil. Through transpiration they may contribute to locally increased air moisture levels. This may in turn result in more precipitation, but not necessarily at the plantation site.

As tree plantations age, hydrological conditions can be altered in a number of ways:

- Reduced soil moisture in the immediate vicinity (root-zone)
- Progressively incremental uptake of ground water via the tap-root
- Increased local temperatures due to decomposing grassland plants

All of these factors can contribute to increased evapotranspiration and the loss of soil moisture. As trees get older, other factors such as rainfall interception come into play. Plantation trees with greater leaf surface areas can hold rainwater caught by their foliage long enough for it to evaporate before it can reach the soil. The same applies to the litter layer which is usually sterile and takes many years to decompose. When water does reach the litter layer, it can be held in sponge-like fashion and also not reach the soil, thereby reducing aquifer recharge. Under these conditions the surface soil layer can develop a condition known as hydrophobicity, which results from a combination of factors including the emergence of certain soil fungi that can deposit water resistant residues on soil particles.

Established plantation trees are able to tap directly into groundwater so that even during dry seasons or droughts they can grow continuously by consuming water that would otherwise be retained in the soil or flow into streams and rivers. This is especially significant during the dry season, as it prevents water from reaching downstream ecosystems and human communities.

5.2.3 Impacts on soil

Tree plantations may impact substantially on soil fertility, and carbon storage capacity:

- Decomposing leaf litter may reduce soil pH
- An acidic environment increases nutrient solubility but increases potential for leaching.
- This also destroys soil organisms that cannot tolerate abnormal acidity.
- After the plantation canopy closes, grassland dies and groundcover is lost.
- Detritus dries/oxidises or decays/decomposes releasing CO₂ and methane.
- Altered soil pH creates conditions where alien invasive plants may thrive – often spreading out of plantations.

All of the above contribute to loss of soil carbon through biomass decomposition or soil erosion resulting from soil chemical changes as well as sheet erosion and scouring.

The worst impacts on soils are caused by mechanical disturbance when plantations are clear-cut. The impacts of clear-cutting and log extraction may be worsened by bad plantation design and road construction methods.

Other plantation-related causes of soil erosion are:

- Using herbicides to destroy vegetation that ‘competes’ with plantation trees
- Burned or chemically established fire belts (especially on steep slopes)
- Displacement of community cropping and livestock grazing onto marginal areas
- Shading induced vegetation loss in grassland or forest areas next to plantations
- Increased silt load in water courses from storm run-off after clear cuts

5.2.4 Other Impacts

Where there is limited plantation management abilities there may be the probability of alien invasive trees, once they start producing seed, and spreading into the landscape. Also, there may be shading out of natural vegetation. As plantations grow taller, the shade cast along their edges may extend further and for longer. When this happens it may cause sun-loving species to die out locally, and increase opportunities for invasive plant species to become established. The reduced exposure to direct sunlight may cause affected areas to become cooler, and when it rains, they take longer to dry out.

A number of impacts are possible if there are poor plantation practices. These can include

- Poor species selection and poor quality plants
- Poor management of plantings with a high failure rate
- Inadequate training of plantation workers
- Inadequate fire protection measures
- Inadequate management and supervision

5.2.5 Social Issues with Plantation Plantings

The objective is to support local communities to restore and protect their forest lands in a way that meets their needs. It should be taken into account in this respect that many poor local communities cannot wait for so many years until they benefit from a land rehabilitation project. These community forests need to produce a variety of products and services from the early years on. Meanwhile, commercial tree plantations often deny local communities from having access. In certain situations, women sometimes have to walk for miles to gather fuel wood as they cannot enter the tree plantations which have occupied the lands where they used to get their fuel wood from.

It should be taken into account in this respect that many rural households may not have the budget to buy their fuel. There is a clear need to support such communities in their efforts to develop small-scale, biologically diverse agroforestry systems, forest gardens and tree plantations which provide a diversity of goods and services to the community, including fuelwood, medicinal plants, soil fertility, wildlife, and construction materials. These communities also need market access for the sustainable products they produce.

5.3 Some issues arising from the SESA study

The SESA process identified some of the likely environmental/social challenges or risks that need to be addressed to minimize adverse environmental/social impacts during project implementation. Some of these concerns from the outcome of the scoping study are provided below.

Natural Resource Issues

- Protection of key river/ water bodies – develop buffer zones around key rivers into forest
- Soil and water quality concerns- from increasing agrochemical usage
- Soil fertility and farm erosion issues- promote agro forestry
- Resource wastage- during exploitation and use of timber
- Maintenance of young tree plantations- threats from livestock grazing especially during the dry seasons
- Lack of community/group woodlots, especially in the Savannah zones –promote community woodlots
- Promote tree crop plantations especially in the Transition and Savannah zones
- Encourage group/ individual and community woodlots especially in the Savannah areas
- Lack of community forests – promote community/stools forests/plantations
- Maintenance of forests, especially in the transition/savannah zones – threat from group hunters and alien herdsmen

Economic Issues

- Equity issues- benefit sharing in carbon trading
- Limited financial resources- hampering effective forest management
- Lack of valuation rates for timber species- LVD compensation rates limited to only annual and perennial crops and LVD rates needs periodic review
- Limited economic/ livelihood activities- esp. during the dry season in the savannah zones putting pressure on forest resources
- Some communities rejecting REDD- Uncertainties associated with economic benefits
- Long gestation periods for tree species/ native tree species (farmers not interested)
- The economic viability and benefits from carbon trading versus tree trading
- Upfront demands for funds to carry out REDD+ activities & donor flexibility
- Job creation opportunities and long term revenues for beneficiaries
- Lack of policy on carbon rights and payment for ecosystem/environmental services
- High cost of LPG (pressure on other energy sources)
- Economically, women are generally dependent on men because the men have the dominant access to and use of the main factor of production, land.

Socio-cultural

- Acquisition of large tracts of land for afforestation projects (peasant farmers at risk)
- Food security

- Admitted and illegal farms/ settlements in forest reserves- compatibility with forest conservation principles
- Compensation arrangements- increasing shade trees in existing cocoa farms
- Lack of royalty payments – from Game/ wildlife reserves/ parks and GSBA to traditional authorities and landowners
- Lack of sustainable alternative livelihood schemes- Persons/ farmers/ communities heavily dependent on forest resources
- Women access and right to tenure and ownership of land and natural resources - Challenges due to cultural, traditional norms and customs
- Customary land acquisition and conflicts
- Communities rejecting REDD+ due to technicalities/complexities/uncertainties/ unmet expectations, previous projects completion issues
- Competition and demand for off-reserve lands (peasant farmers at risk)
- Women's multiple roles in the household, in production and reproduction limit their free time to engage effectively in other social and economic ventures/activities

Institutional

- Weak law enforcement –inability of FC/FSD/government to halt illegal farming in FRs
- Conflicting policies -forestry, cocoa and mineral/mining sectors
- Tree tenure rights- reform law to enable tenant farmers benefit from naturally occurring trees on their farms during period of occupation
- Lack of policy on carbon rights and payment for ecosystem/environmental services
- Security of Land tenure and ownership
- Inadequate bye laws at district/ community level- Bush fires, group hunting and cutting of wild economic trees such as shea trees
- Institutional capacity for monitoring, data storage/management (FC)
- Off reserves management challenges- Community/ traditional authority role not clearly defined.
- Lack of land use plan for Ghana
- Change in government leading to change in policy direction
- Frequent adjournment of forest cases in court and low penalties for offenders
- Ineffective collaboration among key government institutions-e.g. FC/COCOBOD/MOFA /MC /MMDAs/GNFS etc
- Lack of Health and safety regulations in forest/plantation operation
- Lack of transparency at the institutional level during project implementation
- Misuse of power/conflict of interest by some traditional leaders and government officials in order to benefit from encroachment into FRs

The SESA recommended that the implementation of the proposed strategy interventions (options) for the REDD+ Mechanism in Ghana will offer a number of opportunities to local communities, landowners, and farmers which will improve their livelihoods. However, this must be done with greater consideration for sustainability. The opportunities and risks developed for the various strategy options provided a key reference point for the appropriate enhancement and mitigation measures to be considered for the specific strategy intervention to be implemented.

A fuller discussion of these issues is presented in the **Annex 2**.

In summary, table 5 below lists some significant potential social and environmental impact issues from the implementation of the various sub-project activities.

Table 5: REDD+ project activities and potential environmental and social impact issues/ concerns

REDD+ activities/interventions	Environmental and social issues/ concerns
On reserve rehabilitation; Tree Plantation- On Reserve; Enrichment Planting On Reserve; Tree Plantation- Off Reserve; Migrate Sacred Groves to Community Dedicated Forest Reserves; Landscape Planning for corridors; Plantation Field Trials/ Models/ Innovations Ecosystem friendly cocoa production; Shade Tree Planting in Cocoa Farms; Shade Trees in Agricultural Farming Systems; Cocoa Marketing Incentives and Sustainability Production; Non-Timber Forest Industry Promotion; Development of wood based fuel supply (woodlots etc); Timber and Non-Timber Innovation, Community Based Enterprise Trials; Community Based Enterprises; Promotion of Improved Charcoal Production;	<p><u>Biodiversity</u></p> <ul style="list-style-type: none"> ✓ Mono specific exotic tree plantings may alter natural vegetation; ✓ Plantation tree seedlings may invade adjacent forest ✓ Biodiversity conservation (changes in flora and fauna) ✓ Uniform age as clear felling may prevent succession processes <p><u>Water Resources</u></p> <ul style="list-style-type: none"> ✓ Alterations in local natural water cycles/ hydrology ✓ Water pollution from agrochemicals <p><u>Soils</u></p> <ul style="list-style-type: none"> ✓ Changes in soil nutrient cycles (fertility and carbon storage capacity) ✓ Increased soil erosion due to repeated disturbance ✓ Poor plantation management leading to physical impacts to soil structure and surface layers ✓ Soil contamination from agrochemical usage <p><u>Air quality</u></p> <ul style="list-style-type: none"> ✓ deterioration from burning of biomass from clearing ✓ reverse gains from carbon sequestration – adding carbon into atmosphere ✓ dust emissions from milling operations <p><u>Pesticides</u></p> <ul style="list-style-type: none"> ✓ improper application of pesticide amounts ✓ application in rainy season resulting in ineffective targeting and increased runoff and uptake by soils and water bodies ✓ use of highly toxic chemicals to plants, animals and humans ✓ improper use, contamination by high exposure, no precautionary measures leading to health impacts <p><u>Land tenure and ownership</u></p> <ul style="list-style-type: none"> ✓ lack of adequate documentation ✓ clear understanding of land use and occupancy ✓ Conflicts in land claims ✓ increased values in land prices leading to economic displacement of poor land tenants ✓ Transparent rules for benefit sharing of carbon payments between land owner and farmer tenants ✓ Rules and agreements in place for traditional chiefs revenue sharing with locals and other stakeholders ✓ Land acquisition and compensation issues

REDD+ activities/interventions	Environmental and social issues/ concerns
<p>Community Based Nurseries; Seed Orchards In Districts on Reserve; Model Forest Nurseries for Native Species; Cold room storage facilities.</p>	<ul style="list-style-type: none"> ✓ Lack of valuation rates for timber species ✓ Discrimination, lack of grievance mechanisms for all land users and tenants <p><u>Maintaining Livelihoods</u></p> <ul style="list-style-type: none"> ✓ Enhance food security through improved agriculture production on farmed lands to reduce forest pressures ✓ Potential expansion of negative activities by admitted settlements and farms that result in biodiversity loss, ecosystem changes, depletion of natural resources ✓ Increasing demand for forest lands for farming/ settlements by fringe communities because productive lands not available; ✓ Adequate, documented and transparent compensation for admitted farmers in order to vacate unauthorised sections of forest ✓ Long gestation periods for tree species/ native tree species <p><u>Farmer Rights</u></p> <ul style="list-style-type: none"> ✓ Farmers have little say in the harvesting of matured shade trees ✓ Little or no compensation for farmers for destroyed cocoa trees during harvesting of shade trees; ✓ Higher income from improved yields; ✓ No financial benefit to farmers for planting and nurturing shade trees; ✓ Difficulties in registering shade trees ✓ Unreliable supply of seedlings ✓ Long gestation period of native species. <p><u>Forest Management</u></p> <ul style="list-style-type: none"> ✓ Fire prevention and control ✓ Plantation security ✓ Community inclusion in management decisions ✓ Community participation in surveillance and enforcement ✓ Protection of rights to use forest resources ✓ Maintenance of forests, especially in the transition/ savanna zones- threat from group hunters and alien herdsman ✓ Alternative uses for forest waste – charcoal and biogas <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 FSD field staff ✓ Delayed court processes and low fines which do not create proper structures to punish/deter violations ✓ Low motivation of FSD field staff – not proper incentive structure ✓ 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 including chemical handling. ✓ No Environmental, Health and Safety (EHS) Plan ✓ Unavailability and poor use of personal protective equipment and limited/ no enforcement process

REDD+ activities/interventions	Environmental and social issues/ concerns
	<p><u>Cultural Heritage</u></p> <ul style="list-style-type: none"> ✓ Limited access to shrines ✓ Preservation of local cultural identity and heritage ✓ Compensation issues ✓ Community pride and support ✓ Community relinquishing/ sharing heritage for greater good

6.0 GUIDELINES FOR MITIGATION AND ENHANCEMENT MEASURES

6.1 Mitigation Measures

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

Table 6: Environmental and social mitigation measures

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
<u>Biodiversity</u>	<ul style="list-style-type: none"> ✓ Design planting to include both exotic and indigenous plants in the right proportions and positions; ✓ Avoid environmentally sensitive sites and unnecessary exposure or access to sensitive habitat; Consult EPA in the selection and use of such sites; ✓ Consider biodiversity plots within tree plantations and also along waterways and streams within the plantations; ✓ Clearance of plantation plots will be sufficiently phased to reduce the impacts of vegetation removal on terrestrial flora and fauna.
<u>Water Resources</u>	<ul style="list-style-type: none"> ✓ Promote buffer zones along the local streams to ensure their integrity and protection of other aquatic life forms. The buffer reserves will serve as natural filters for surface runoff from the plantation areas. The reserves will also play a major role in protecting the banks of the waterways from channel erosion. In addition the reserves will create aesthetic scenes along the watercourse.
<u>Soils</u>	<ul style="list-style-type: none"> ✓ The application of inorganic fertilizer will be restricted to the period just after transplanting. The fertilizers will be applied around each tree in shallow rings. This is to ensure that the fertilizer is available to the young transplanted trees. ✓ No broadcasting of fertilizers will be undertaken. ✓ Bio char will be introduced in selected plots ✓ Sensitive sites with high erosion risk will be identified. Such areas shall not be cultivated and will include hill-tops and very steep slopes having gradient of 25% or more. Vegetation of such areas shall be maintained to help control erosion as well as ensuring soil stability. ✓ Enrichment planting will be done in patches of degraded areas along these slopes ✓ The application of inorganic fertilizer will be restricted to the period just after transplanting. ✓ The fertilizers will be applied around each tree in shallow rings to ensure that the fertilizer is available to the young transplanted trees. ✓ No broadcasting of fertilizers will be undertaken.
<u>Air quality</u>	<ul style="list-style-type: none"> ✓ Burning of biomass will be avoided as much as possible. ✓ Fire will be used only in situations where this is effective and least environmental damaging. ✓ Most biomass generated will be available as fire wood and also as pegs. ✓ Extractor fans should be available in mills to manage dust
<u>Pesticides</u>	<ul style="list-style-type: none"> ✓ The use of pesticides on plantations will be minimal. ✓ The main control methods for pests and diseases will involve the use of resistant hybrids, trapping/scaring of animals, protecting young plants with collar wire and destroying nestling/breeding areas of pests. ✓ A constant phyto-sanitary observation will be maintained to help prevent the outbreak and spread of any potential disease/pest into the whole plantation.

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	<ul style="list-style-type: none"> ✓ Uncontrolled mass spraying of fungicides will be avoided. ✓ The use of herbicides will not be encouraged on plantations. ✓ Control of weeds will be done manually. ✓ Labour-intensive approach using simple farm tools like hoes and cutlasses will be employed. ✓ Organic farming practices will help eliminate the use of inorganic fertilizers and herbicides that are major contributors to soil and surface water quality deterioration
<u>Land tenure and ownership</u>	<ul style="list-style-type: none"> ✓ The project will liaise with the Land Administration Project (LAP) initiatives to assist farmers to map their plots and the information documented for future reference; ✓ Proper arrangements to be made on land tenure systems to be adopted; ✓ Research and stakeholder consultations to identify best practices and guide implementation in partnership with traditional authorities. The benefit sharing agreement (BSA) for off reserve plantations and carbon stocks will have to be approved by government after studies are done and stakeholders validate the findings. ✓ Due recognition given to communities who have successfully managed sacred groves to date in the form of suitable compensation which must be discussed and agreed with communities; ✓ Management plans to be prepared for all sites to also reflect community expectations ✓ District Assembly byelaws to be used to support the conservation of dedicated forests and to sanction encroachment
<u>Maintaining Livelihoods</u>	<ul style="list-style-type: none"> ✓ Admitted farms and settlements have expanded beyond allowed limits and will have to return to permitted areas only. They may therefore have to be compensated for any investments/ developments outside of the permitted areas; ✓ Ensure appropriate compensations are paid to PAPs ✓ Employment and other opportunities be given to local communities as much as possible.
<u>Farmer rights</u>	<ul style="list-style-type: none"> ✓ FSD to reconsider current policy and procedures for the allocation and harvesting of trees on farms; ✓ Farmers to participate in discussions to allocate and harvest matured shade trees on their farms and possible benefits/ compensation arrangements for affected cocoa trees; ✓ FSD to streamline procedures for registering shade trees to make it more- friendly to farmers.
<u>Forest Management</u>	<ul style="list-style-type: none"> ✓ Educate and train community fire fighting volunteers on fire hazards, prevention and use of equipment and implement regular drills ✓ Create fire rides around plantation ✓ Ensure regular patrols to identify and remove fire threats early ✓ Apply appropriate sanctions on offenders including fines and jail sentences ✓ The plantation development will be phased in order to generate biomass which could be manageable at a given time. ✓ Salvaging of useable biomass can significantly reduce the volumes of waste that has to be disposed of. ✓ Felled trees and cleared under- brushes will be chipped and formed into windrows and allowed to decompose and/or used as pegs for planting. ✓ A waste skip for the collection of unused and damaged polythene bags for seedlings will be placed at the nursery site. The

Environment, Social and Health Impact Issue/ Concern	Proposed Mitigation Action/ Measures
	contents of the waste skip will be emptied at the waste dump site.
<u>Safety and security</u>	<ul style="list-style-type: none"> ✓ FSD to devise policies and procedures to protect field staff ✓ FSD forestry prosecutors to be adequately trained to efficiently handle court cases for swift determination.
<u>Occupational health and safety</u>	<ul style="list-style-type: none"> ✓ The project will design and implement awareness creation programs to educate persons on protecting workers' health and safety including paying attention to chemical handling. The Project will require preparation and implementation of an Environmental, Health and Safety (EHS) plan which will outline procedures for avoiding health and safety incidents and for emergency medical treatment. ✓ Workers will be required to wear suitable Personal Protective Equipment (PPE) as appropriate. ✓ Workers will be sufficiently trained in the safe methods pertaining to their area of work to avoid injuries. The use of PPEs to be encouraged and with incentives ✓ The project will encourage the use of personal protective equipment/apparels such as Wellington boots/safety boots, gloves, overalls and raincoats for field workers. ✓ The project will conduct safety training for pesticide handlers and all agricultural workers. The training programme will include handling of agro-chemicals, use of PPE and what to do in the case of pesticide exposure.
<u>Cultural Heritage</u>	<ul style="list-style-type: none"> ✓ Any cultural site including sacred groves on proposed plantations will, with the agreement of the community be well demarcated and the area not cleared for development. ✓ Necessary cultural rites agreed with community and performed prior to access to groves

7.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) provides guidance to the Forestry Commission on procedures to be followed and standards to be met in implementing projects which should be in agreement with national and World Bank safeguard provisions. Roles and responsibilities of the FC/FSD 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 are provided to support the implementation of the environmental and social management plan.

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

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

7.1 The Environmental and Social Screening Process

The purpose of the preliminary screening is to: (i) determine whether projects are likely to have potential negative environmental and social impacts; (ii) decide if EPA 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; (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 Resettlement Policy Framework (RPF) for possible livelihood impacts.

Project managers must foremost carry out the preliminary environmental and social screening of proposed projects by using the checklist suggested in **Annex 4**. 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), project managers must consult internally with the FC Environmental and Social Safeguard Focal Person for confirmation. Once an agreement is reached, the manager may proceed with the minimum regular reporting requirements which will be discussed and agreed with the FC E&S Focal point.

When there may be doubt concerning project risks and impacts, the local and/or FC E&S Focal Point should consult the EPA for guidance as provided by the Ghana EA procedures.

7.2 ESIA Procedure to be followed for 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) 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 5** and are consistent with the World Bank categorization of projects. The following steps will be followed by the FC to ensure environmental and social compliance of Projects.

Step 1: Environmental Registration of the Project

Every regional forestry office will designate an Environmental and social safeguard Officer. The appointed/ designated Officer will be directly responsible for screening all projects and submitting EPA documentation when required. The REDD+ Environmental and social review Form will be completed and when necessary the EA Assessment Registration Forms will also be completed.

A sample copy for the screening form is given as **Annex 4** and the EA1 Form is provided in **the Annex 6** and the mitigation measures suggested in this ESMF as well as the checklist used in the screening exercise should assist to complete this Form. For projects for which EIA are mandatory, the Officer should register with Form EA1 otherwise Form EA2 should be used.

Step 2: Screening

This activity in accordance with the EAR 1999 LI1652 is the responsibility of the EPA. 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. 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 regional/ district forestry office may move to implementation in accordance with pre-approved standards or codes of practices or the pre-approved guidelines for environmental and social management.

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), stand alone reports will be prepared. The Ghana EPA statutorily requires an EIA for plantation projects in excess of 40ha.

The Regional Safeguard Officer in consultation with the district office, 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, and in possible consultation if required, an appointed National Safeguards Specialist at the MLNR. 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 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, including people who may be affected. 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 results of identification, and extent of the ESIA (scoping), the terms of reference will be prepared by the Regional Safeguards Officer.

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 regional FSD will submit the draft ESIA to EPA. 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.

The review committees are mandated to co-opt relevant officials as and when necessary. In certain instances the support of international ESIA institutions are solicited in review of some major or controversial projects where there is limited national expertise.

Copies of ESIA will be placed at vantage points including the EPA Library, relevant District Assembly, relevant District and Regional FSD offices, EPA Regional Offices and the sector Ministry. 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)

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

Where the undertaking is approved, the MMLNR/ FC 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:

1. For activities within forest reserves, the interventions will most likely be owned by the FC and all permitting issues will be spearheaded by the FSD;
2. For activities on off reserve areas which may belong to for example, farmers or plantation owners, they will be supervised/ assisted by the FSD to acquire the required permits.

Table 7: 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	FC	Secretariat (MLNR)/ FC/ National Safeguard consultant
	Statutory Environmental Registration of Project	FSD/ Private sector	Regional Environmental and Social Safeguard Officer/ Plantation owner
2.	Determination of appropriate environmental assessment level/ category	EPA	-
3.	Implementation of environmental assessment	FSD/ Private sector	Regional/ District Environmental and Social Safeguard Officer/ Plantation owner
3.1	If ESIA is necessary		
3.1a	Preparation of terms of reference	FSD/ Private sector	Regional Environmental and Social Safeguard Officer/ Plantation owner
3.1b	Validation of ESIA/EMP TOR (Scoping)	EPA	National Safeguard consultant
3.1c	Selection of Consultant	FSD/ Procurement Office/ Private sector	Secretariat/ Procurement Office
3.1d	Realization of the EIA, Public Consultation Integration of environmental and social management plan issues in the tendering and project implementation,	FSD/ Procurement Office/ Consultancy firm/ Private sector	National Safeguard Consultant/ Regional Environmental and Social Safeguard Officer / Procurement Officer
4	Review and Approval	EPA	-
4.1	EIA Approval (B1)	EPA	-
4.2	Approval simple measures (B2&c)	FSD	Regional Environmental and Social Safeguard Officer/ Plantation manager

No.	Stage	Institutional responsibility	Implementation responsibility
5.	Public Consultation and disclosure	FSD/EPA	Regional Environmental and Social Safeguard Officer /Plantation manager/Consultant
6.	Surveillance and monitoring	FSD/EPA/ MLNR	Secretariat/ Regional Environmental and Social Safeguard Officer / Safeguard specialist
7	Development of monitoring indicators	FSD	Regional Environmental and Social Safeguard Officer/ Safeguard Consultant

7.3 Technical Specifications and Standards

7.3.1 Technical specifications

The FC will be responsible for the development and presentation of clear guidelines for the design and provision of technical specifications and standards to assist both the FSD and the private sector to plan for plantation development projects. These will ensure the streamlining of approaches and activities for sound environmental and social implementation of projects. These will include adequate reference to sector schedules and prescribed environmental codes of practice. The private sector will be well aware of applicable technical provisions and fit their projects into these accordingly.

7.3.2 Environmental standards

The EPA is responsible for setting environmental standards and has in place both general and sector specific guideline values. The Water Resources Commission also has standards regarding activities which will impact on water resources. These standards and in some cases guidelines are required for the management of pollutant emissions and protection of resources. In situations where standards which therefore have legal backing are available then these must be followed. Otherwise, national guidelines or the World Bank guidelines could be used. In most cases, these are practically similar.

8.0 INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION

8.1 Institutional roles and responsibility for the ESMF Implementation

The ESMF will be executed by the Forestry Commission in collaboration with other partners such as COCOBOD, MESTI and MOFA. It is expected that these will feed into an information management system to be set up for the sector.

It is anticipated that the FC will also coordinate environmental and social due diligence for the REDD+ and FIP projects across all donor lending arrangements (eg. WB, AfDB, IFC).

Therefore, the main institutions implementing the REDD+ and the FIP and which will have interest in environmental and social management include:

- Ministry of Lands and Natural Resources;
- Ministry of Food and Agriculture;
- Ministry of Environment, Science, Technology and Innovation;
- Forestry Commission- Forestry Services Division, Resource Management Support Centre, Climate Change Unit
- Cocoa Board- Cocoa Research Institute
- Municipal and District Assemblies (MDAs)
- Environmental Protection Agency (EPA)
- World Bank and other donors

Ministry of Lands and Natural Resources (MLNR) is the sector Ministry entrusted with the management of Ghana's land, forest, wildlife and mineral resources in the country. The Forest Investment Programme (FIP) Management Unit at the ministry is directly responsible for the implementation of the project and will coordinate activities among all the main stakeholders. The Technical Coordinating Committee within the Unit will require environmental and social management specialist support services to ensure that the ESMF is fully implemented.

Ministry of Food and Agriculture (MoFA) has a formal set up within the ministry focusing on environmental and social issues (Lands and Water Management Department). This Department usually collaborates with the EPA to implement environmental and social issues in the ministry's programmes and projects. Their expertise may therefore be available in assisting to implement the ESMF.

Forestry Commission of Ghana is responsible for the regulation of utilization of forest and wildlife resources, the conservation and management of those resources and the coordination of policies related to them. The Commission embodies the various public bodies and agencies that were individually implementing the functions of protection, management, the regulation of forest and wildlife resources. These agencies currently form the divisions of the Commission which includes the

Forest Services Division. The Division has regional and district offices throughout the country. Ability to implement the ESMF from these offices may be limited. The **Resource Management Support Centre (RMSC)** is the technical wing of the Forestry Commission (FC) and is responsible for the Exploration, Development, Facilitation, Institutionalization and Implementation and monitoring of effective and affordable forest management systems in Ghana. The Centre further ensures that these systems are in accordance with the national Forest and Wildlife Policy. The Centre has its operational base in Kumasi. Its mission is therefore to develop integrated forest and wildlife management systems and facilitate and monitor their implementation through active cooperation with stakeholders for the benefit of all segments of society.

Regulatory Agencies

Environmental Protection Agency (EPA) is responsible for ensuring compliance with laid down ESIA procedures in Ghana in accordance with the EPA Act 1994 (Act 490) and its amendment and Agency is expected to give environmental approval 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 FIP.

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.

8.1.1 Implementing Plans

The Forestry Commission (FC) in the Ministry of Lands and Natural Resources (MLNR) will serve as the lead government agency. The MLNR is responsible for forestry activities for both on and off reserves and it is also the designated focal point ministry for the Forest Investment Programme. The project coordination unit (secretariat) to be established will ensure linkages and coordination with forestry project interventions under the FIP, including the Dedicated Grant Mechanism, and will strongly coordinate its activities with the REDD+.

The focal point ministry may work with the Ministry of Food and Agriculture (MOFA), the Cocoa Board, the Ministry of Environment Science and Technology, as well as other relevant agencies to ensure smooth implementation and the documentation sharing of the lessons learnt.

The main responsibility for implementing the ESMF and the RPF rests with the Forestry Commission Environmental and Social Focal Point and will be supported by, as needed, environmental and social experts who will be recruited by the project. The FSD regional managers will oversee the implementation of all actions to mitigate adverse environmental and social impacts within their respective operational regions, and also supervise their district managers to ensure sound management practices at the community level.

8.2 Institutional Strengthening and Capacity Building

A new functioning coordination and implementation group has already been envisaged by the FC to address environmental and social due diligence across the FIP and other forest related programmes (FCPF, DGM, and carbon Fund, UNFCCC). The group will also have responsibility for the REDD+.

8.2.1 Forestry Commission Environmental and Social Safeguard Focal Point

The FC ESS focal point is responsible for:

- Coordination of environmental and social safeguards across all programmes
- Leadership across the national regional and district levels for the implementation of safeguards
- Providing guidance and project level info and tools on safeguards for all stakeholders
- Managing the environmental and social safeguard experts (consultants)
- Responsible for coordinating all safeguard activities with donors, implementing agencies and other potential investors
- Oversee all environmental and social safeguard training and capacity building

8.2.2 Environmental and social consultants

The Consultants who will be conversant with the WB safeguard policies and their instruments and application as well as other REDD+ safeguard principles, will be hired periodically as and when required to support the implementation of the environmental and social safeguards including 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**.

8.2.3 Regional Environmental and Social Focal Points

The Regional Environmental and Social Focal Points will

- Work with the FC ESS Focal Point 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 District level and contractors invited to participate.
- Draft safeguards report based on collated documents and reports from district activities as part of usual regional reporting on the project.
- Be the first point of contact for the district in case of any challenging issues on project-related safeguards - land, environmental, safety and health and draw the FC ESS Focal Point'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.
- Perform any other related activities that may be assigned by the FC ESS Focal Point to whom s/he will report.

8.3 Institutional Strengthening and Capacity Building

The competence of the FC to carry out their respective design, planning, approval, permitting, monitoring and implementation roles will, to a large extent, determine the success and sustainability or otherwise of the Programme. **Table 8** describes the environmental and social due diligence on the capacity of project institutions and recommended actions to improve capacity.

Identification of Capacity Needs

The first step in pursuing capacity building will be to identify the capacity needs of the various stakeholders. Capacity building should be viewed as more than training. It is human resource development and includes the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively. It also involves organizational development, the elaboration of relevant management structures, processes and procedures, not only within organizations but also the management of relationships between the different organizations and sectors (public, private and community).

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

Training programme 1:

Content: World Bank Safeguard policies of OP 4.12 and OP 4.01 and Ghana EPA Environmental Assessment Regulations, updated SESA, updated ESMF/ RPF

Participants: MLNR (Secretariat); FC/ FSD; COCOBOD; MMDAs; Private sector (Plantation managers).

Training programme 2

Content: Screening Checklist, ToR for regional and district safeguard officers and Completion of EA Registration Forms

Participants: MLNR/ Regional and District FSD/ Plantation managers (private sector)

Training programme 3

Content: Preparation of Terms of Reference for ESIA

Participants: MLNR (Secretariat)/ Regional Environmental Officers

Training programme 4

Content: Environmental and Social provisions in Plantation development manual (ESMP).

Participants: District/ Regional Forestry Officers; Plantation managers (private sector)

Table 8: Summary of environmental and social due diligence capacity and training programmes

No	Institution	Environmental and social due diligence capability	Brief Description of situation	Recommendations
1.0	Sector ministry and agency			
1.1	MLNR	Limited	Project management unit will require assistance to provide proper reporting	Designated individual for safeguard reporting to participate in training.
1.2	Forestry Commission	Limited	Limited experience with environmental and social safeguards (Usually will collaborate with EPA on projects)	<ul style="list-style-type: none"> • Designated environmental and social safeguards focal point at the national office; • Some Regional and district staff to be designated as safeguard officers; • Safeguard training across all levels; • Development of safeguard guidance and tools; • Development of national safeguard system
1.3	MOFA	Established	Environmental Unit established at Ministry and also some competence at the Regional level. No capacity at districts	Environmental unit to establish coordination with the FC
1.4	MESTI	Established	Parent ministry of the EPA.	Improve coordination with the project ministry, MLNR
2.0	Relevant regulatory agencies			
2.1	Environmental Protection Agency (EPA)	Functional at head office and regional level.	Capacity at the national and regional level	Improve coordination and support for the permitting process
2.3	Water Resources Commission (WRC)	Functional	MOU with EPA on areas of mutual interest/overlap	Enhanced collaboration
3.0	Local Government Service			
3.1	Regional Coordinating Councils	Limited	Planning Officers trained by EPA on SEA activities	Basic training in ESIA for identified staff and also for checklist
3.2	Metropolitan, Municipal and District Assemblies (MMDAs)	Limited	Role performed by Planning officers. Coordination, implementation and oversight at district projects. They have been trained by the EPA to assess district plans for environmental sustainability and social acceptability	Basic training in environmental and social due diligence for forestry interventions and programmes

The main recipients for training will be the FSD regional and district managers as well as fringe communities and farmers' groups. Their present capabilities to successfully prepare and implement environmental and social mitigation actions are limited. The training will be organized in collaboration with the regional EPAs and will be in the form of seminars and workshops. The training will include the dissemination of the ESMF and RPF reports, Ghana EPA procedures and the World Bank policies on environment and social assessment. The FSD will explore the possibility of having community environmental and social safeguard facilitators, and training them.

The FSD regional offices will then be expected to organise training workshops for selected plantation managers/ farmers. It is proposed to collaborate with the MOFA and COCOBOD extension officers for this exercise. The Environmental Unit of the MOFA based in Accra has some competence but none at the regional or district levels.

The training and awareness creation will include annual events and the primary targets will be the FSD district managers. It is proposed to have 2- day training programmes within a year at a central location and the content of the training will include a review of key environmental and social management activities and further discussions on the ESMF. 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.

The workshops with the plantation farmers may also be annual and will be coordinated by the FSD district managers and supervised by the regional managers.

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 3**. Consultants may be hired to produce additional manuals and checklists as and when required by the project.

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\$1,400,000 over the 4- year project life as explained in the **Table 9** below:

Table 9: Estimated budget to implement ESMF

No	Activity	Description	Annual cost, US\$	Total Cost, US\$
1.	Staffing	1. Forestry Commission Environmental and Social Safeguards (ESS) Focal Point; 2. Environmental and Social Safeguard Experts 3. Safeguards Information Systems Specialist (Local and International)	20,000 30,000 local <u>30,000 intl</u> 70,000	280,000
2.	<u>Training</u> 2a. Awareness creation and Capacity building for FC (Climate Change Secretariat), FSD regional project staff	Training workshop/ seminars on Programmes 1,3 and 4	20,000	80,000
	2b. Capacity building for district FSDs (safeguard officers)	Training workshop/ seminars on Programmes 1, 2 and 4	5,000 per <u>region</u> <u>50,000</u>	200,000
	2c. Capacity building for FSD, MMDAs and RCC	Regional training workshops on Prog 1,4 (per diems, travel, workshop venue, materials, meals)	7,000 per region <u>70,000</u>	280,000
	2d. Awareness creation and capacity building for selected members of community	Community meetings and training	3,750 per region <u>37,500</u>	150,000
3.	Guidance and tools	Guidance Documents, Checklists, Forms, TORs, Technical Planning Tips	15,000	60,000
4.	Communications	Radio, TV discussions, Newspaper adverts on issues relating to PPP/ ESMF/ RPF	15,000	60,000
5.	Transport, per diem, registration fees (participation in training)	Transport for staff to travel to regions and districts and HQ; Site visits, attending training, Per diem for official travel; Specific meeting and workshop registration fees (local and international)	3,750 local per <u>region</u> 37,500 15,000 intl	150,000 60,000
6.	Monitoring and Evaluation	Safeguards component for M&E is addressing E&S due diligence and verification	20,000	80,000
	TOTAL			1,400,000

9.0 MONITORING AND EVALUATION

Monitoring plans will be developed to track safeguard provisions at both the Environmental and social safeguards framework level and sub-project activity level. The proposed plans are presented in the **Table 10**. The table confirms the verifiable indicators as well as responsibilities for the various monitoring actions.

The monitoring issues at the ESMF level include 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 etc.

Table 10: ESMF and RPF monitoring indicators and responsibilities

No	Monitoring level	Monitoring Issue	Verifiable indicators	Responsibility
1.	ESMF level	Adequate dissemination of ESMF and PF to stakeholders	Record of consultations and meetings	FC, Consultants
			Workshop reports	
		Capacity building and training programmes	Training reports	FC/ FSD/ MMDAs, Private sector, Consultants
2.	Sub- project activity level	Screening of sub project	Checklist completed	FSD regional/ district FP/ FC E&S FP
		Completion of EA1 form	Completed EA1 Form submitted to the EPA	FSD regional FP/ EPA/ FC E&S FP
		Adequate mitigation measures provided to manage adverse impacts	ESMPs prepared, see Table 11	FSD regional and district FPs/ FC E&S FP
		Project satisfies statutory provisions EPA Act 1994 (Act 490) LI 1652	EPA Permit for project	FSD regional FP/ EPA/ FC E&S FP
		Post project monitoring and evaluation	Monitoring reports, annual environmental reports	FSD regional FP/ EPA/ FC E&S FP

Table 11: Monitoring indicators and verification means

Potential Impact Issues/ concerns	Indicator	Verification
Biodiversity	<u>Key indicators</u> ✓ Exotic and indigenous trees in tree plantations ✓ No sensitive sites affected ✓ Presence of plots <u>Other</u> ✓ Plots cleared in phases	Field inspections Site reports Special audits by project
Water Resources	<u>Key indicators</u> ✓ Presence of buffer zones ✓ Local water quality satisfactory	Third party audits
Soils	<u>Key indicators</u> ✓ Plantation development records ✓ Satisfactory soil quality ✓ Identified and documented erosion risk areas <u>Others</u> ✓ Presence of vegetation in such areas ✓ Planting trees along slopes	Annual monitoring by E&S Focal Point
Air quality	<u>Key indicators</u> ✓ Record of biomass used for pegs and firewood ✓ Extractor fans in Mills	
Pesticides	<u>Key indicators</u> ✓ Availability of Pest control devices as mentioned ✓ Phyto- sanitary equipment at site ✓ Pest management plan for project <u>Others</u> ✓ No broadcasting of fertilizers ✓ Manual Control of weeds by labour-intensive approaches. ✓ Use of Organic farming practices	
Land tenure and ownership	<u>Key indicators</u> ✓ Proper documentation available ✓ Disputes registered ✓ Grievances resolved and recorded	
Maintaining Livelihoods	<u>Key indicators</u> ✓ Alternatives provided ✓ Support and incentives available ✓ Proper and acceptable results documented	
Farmer Rights	<u>Key indicators</u> ✓ Local customary land rights respected ✓ Grievances documented and resolved	
Forest Management	<u>Key indicators</u> ✓ Fire fighting equipment ✓ Fire belts ✓ Programme for patrols drawn ✓ <u>Other</u> ✓ Forestry policy	
Security and Safety	✓ Communication and media campaign at local communities and stakeholders	
Occupational Health and	<u>Key indicators</u>	

Potential Impact Issues/ concerns	Indicator	Verification
Safety	<ul style="list-style-type: none"> ✓ Availability and use of PPEs ✓ Number of training sessions held 	
Cultural Heritage	<p><u>Key indicator</u></p> <ul style="list-style-type: none"> ✓ Cultural rites agreed and documented 	

10.0 CONSULTATIONS, ESMF DISCLOSURE AND GRIEVANCE MECHANISM

10.1 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 organization and local communities in Brong Ahafo and Western Regions.

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 and issues discussed are summarized in **Annex 7**.

10.2 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. FC 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 the FC.

10.3 Grievance Mechanism

The mechanism to address grievances is consistent with and complementary to the outcome of a separate study for the design and implementation of an Alternative Dispute Resolution scheme for the REDD+.

The REDD+ is committed to enhancing opportunities for grievance redress, collaborative problem solving, and alternative dispute resolution. Effectively addressing grievances from people impacted by the REDD+ 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 World 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 to realize the action plan.

Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project.

Projects may have a range of potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is therefore very necessary. As such the ESMF has developed a grievance management process to serve as a guide during project implementation.

The grievance management guide is provided in **Table 12 below**.

Table 12: Grievance redress process

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

11.0 CONCLUSION

The REDD+ ESMF has been prepared to be consistent with the ESMF for the FIP and other forestry programmes. The project if well implemented, will offer significant benefits for the society not only in the area of carbon emissions reductions but also in relation to biodiversity conservation, forest industry, agriculture and livelihoods. Together with the FIP, the projects will support needed reforms in forest policy and improve institutional practices, procedures and capacities; strengthen community based natural resource management institutions with improved practices and incentives for managing landscapes sustainably; enhance Reforms and practices and reinforce these through improved communication methods and materials, including platforms for information sharing; and reduce tons of CO₂ emissions from reduced deforestation and forest degradation (relative to reference emission level developed separately).

The mitigation measures advocated will address adverse impacts, and also the implementation plan and training programmes suggested are sufficient to ensure the success of the project.

12.0 REFERENCES/ BIBLIOGRAPHY

Adu-Bredu, S., M. K. Abekoe, E. Tachie-Obeng & P. Tschakert. 2010. Carbon stock under four land-use systems in three varied ecological zones in Ghana. In: Bombelli, A. & R. Valentini (Eds.), *Africa and Carbon Cycle. World Soil Resources Reports* No. 104: 105 – 113. FAO, Rome.

Asare, Rebecca Ashley. 2010. Implications of the Legal and Policy Framework for Tree and Forest Carbon in Ghana: REDD Opportunities Scoping Exercise. *Forest Trends*: Washington, DC.

Davies, J. & C. Awudi. 2001. Review of reform of fiscal policies affecting forest management in African ACP countries.

Ghana Green economy, Scoping Study-Draft, UNEP.

Ghana FIP Final, October 2012.

Ghana Forest Report –draft, towards Ecowas Convergence Plan, prepared by Prof. K. Tufour, March 2012.

Government of Ethiopia (2007) Environmental and Social Management Framework (ESMF)- Local Infrastructure Grant, Ministry of Finance and Economic Development/ World Bank, March 2007

Government of Ghana (2013) Environmental and Social Management Plan (ESMP)- Engaging Local Communities in REDD+/ Enhancement of Carbon Stocks Project, Ministry of Lands and Natural Resources/ African Development Bank, August 2013

Hansen C.P., J.F. Lund & T. Treue. 2009. Neither fast nor easy: the prospect of Reducing Emissions from Deforestation and Degradation (REDD) in Ghana. *International Forestry Review* Vol.11 (4).

Katoomba Group West Africa Incubator, Nature Conservation Research Centre, Oxford University & Ghana Forestry Commission. 2011a. Biomass Map of Ghana 2008 – 2009. (Available at: http://forest-trends.org/publication_details.php?publicationID=2837.)

Katoomba Incubator for Ecosystem Services, Nature Conservation Research Center, Oxford University, National Aeronautics and Space Administration, & Ghana Forestry Commission. 2011b. The Ghana Carbon Map: Potentials, Opportunities and Implications. Unpublished Working Paper.

Marfo, E. 2010. Chainsaw Milling in Ghana - context, drivers and impacts. Tropenbos International, Wageningen. 63 pp.

Marfo, E., E. Danso and S.K. Nketiah. 2013. *Analysis of linkages and opportunities for synergies between FLEGT, REDD and national forest programme in Ghana*. Wageningen, the Netherlands: Tropenbos International Ghana.

Ministry of Lands and Natural Resources (2012). Ghana forestry investment program (FIP) Plan – draft report, April 2012

Ministry of Lands and Natural Resources (2012). Climate Investment Funds, Ghana Investment Plan for the Forest Investment Program (FIP) October 2012.

Rice, R.A. & Greenberg, R. 2000. Cocoa cultivation and the conservation of biological diversity. *Ambio* 3 (29): 167 – 173.

Road Map, Mainstreaming Gender considerations into REDD+ processes in Ghana, IUCN/WEDO/PDA, November 2011.

Report on REDD+ and CDM Sensitization Workshop for Forestry Commission frontline Staff in the Greater Accra, Volta, Eastern, Brong Ahafo and the three Northern Regions – FC report.

Report of the Committee of Enquiry into the Grievances of Farmers being ejected from certain Forest Reserves in the Western Region, November 1974

Republic of Ghana. 2010. Ghana Shared Growth and Development Agenda (GSGDA) 2010 – 2013. Medium-Term National Development Policy Framework. National Development Planning Commission, Government of Ghana, Accra.

Republic of Ghana. 2011c. Tree crops policy (final draft). MoFA, Government of Ghana. Revised Ghana R-PP, Final December 2010.

Strengthening off-reserve timber resource management in Ghana, Tropenbos international –Ghana Workshop Proceedings 7, TBI-Ghana 2009.

Technical Training and Roundtable Discussion on REDD+ and Implementation Modalities for Traditional Chiefs, Demonstration Project Proponents and Senior Personnel of Forestry Commission, *NCRC, August 2012*, John Mason and Rebecca Asare, with input from Martin Yelibora and Winston Asante.

Voluntary Partnership Agreement between the EUROPEAN COMMUNITY and the REPUBLIC OF GHANA on Forest Law Enforcement, Governance and Trade in Timber Products into the Community

World Bank. 2012a. Cocoa sector policy brief. PREM Africa Region. World Bank, Washington DC.

World Bank. 2011b. Supply chain risk assessment. Cocoa in Ghana. World Bank, Washington DC.

World Bank. 2005. Ghana natural resources management and growth sustainability. World Bank, Washington D.C.

WRC 2010. National Baseline Studies and Institutional analyses towards the development of the national IWRM Plan. Prepared by SAL Consult Ltd for WRC.

World Bank (2014) FIP- Enhancing Carbon Stocks in Natural Forests and Agroforest Landscapes (P148183), Project Concept Note, Government of Ghana, February 2014

ANNEX 1: Policy and Legislative Framework

National Policy Framework

No.	Policy	Description
1.	Forest policy	<p>The 1994 Forest and Wildlife Policy (FWP), revised in 2011, and the 1996 Forestry Development Master Plan (FDMP) serve as guiding policies for the sector.</p> <p>The stated overall aim of the FWP was: “Conservation and sustainable development of the nation’s forest and wildlife resources for the maintenance of environmental quality and perpetual flow of benefits to all segments of society.” The policy represented a shift towards the principles of sustainability. This is most evident in the objectives for management of the off-reserve forest areas.</p> <p>In order to further strengthen the objectives of the FWP and the FDMP, the Government enacted the Timber Resources Management Act, 1997 (Act 547), the Timber Resources Management (Amendment) Act, 2002 (Act 617), and the Timber Resources Management Regulations, 1997 (LI 1649). These pieces of legislation focused on efficient resource allocation and prevention of illegal logging and chainsaw lumbering.</p> <p>However, the Timber Resources Management Act made it illegal for farmers and other users of off reserve lands to harvest any naturally growing trees for commercial or domestic purposes, even if it is growing on their land. It also prohibited logging without prior authorisation from concerned groups or individuals.</p> <p>However, regardless of the efforts Ghana still struggles with illegal logging and good governance of the forest sector (RoG 2011a). There appears to be no significant reductions in illegal logging. The problems are most obvious in the CSM sector and the domestic timber supply. Though parliamentary oversight of forest agencies is relatively good, information management and use of best practise in law enforcement remains weak.</p>
2,	Environmental Policy	<p>Ghana’s Environmental Policy resulted from a series of Government actions initiated in March 1988 to put environmental issues on the priority agenda. Subsequent to this, an Environmental Action Plan (EAP) was drawn up which identified specific actions to be carried out to protect the environment and ensure better management of natural resources. The plan addresses itself to sustainable development issues as defined by the World Commission on Environment and Development in 1987 and provides a broad framework for the integration of environmental issues into development strategies and actions.</p> <p>The National Environmental Policy (NEP) was adopted in 1991 to provide the framework for the implementation of the National Environmental Action Plan (NEAP). The ultimate aim of the policy is to ensure sound management of the environment and the avoidance of exploitation of resources in ways that may result in irreparable damage to the environment. The policy makes provision for:</p> <ul style="list-style-type: none"> • Maintenance of ecosystem and ecological processes essential for the functioning of the biosphere; • Sound management of natural resources and the environment;

		<ul style="list-style-type: none"> • Protection of humans, animals and plants and their habitat; • Guidance for healthy environmental practices in the national development effort; • Integration of environmental considerations in sectoral, structural and socio-economic planning at all levels; • Seek common solutions to environmental problems in West Africa, Africa and the world at large. <p>The Project will be guided by these policy considerations to ensure that the interventions do not adversely impact on the environment or cause harm to persons.</p>
3.	Agricultural Policy	<p>Agricultural expansion is one of the major underlying causes of deforestation in Ghana. The first Food and Agriculture Sector Development Policy (FASDEP) was developed in 2002 as a framework for the implementation of strategies to modernise the agricultural sector in order to increase food and cash crop production. The strategies in the policy were based on the Accelerated Agricultural Growth and Development Strategy, which was designed to forge linkages in the value chain.</p> <p>The revised policy of 2006 (FASDEP II) encourages the formation of inter-ministerial teams to ensure environmental sustainability in agricultural production systems. These could be common platforms to consider also in the implementation of FIP.</p>
4.	Land Policy	<p>The revised National Land Policy (NLP) in 2002, and the implementation of the World Bank supported Land Administration Project (LAP), has promoted the judicious use of land and natural resources in the pilot areas. However, the achievements have so far been local and there is need to upscale the achievements.</p>

Legislative Framework

Legislation	Description
Forestry	
<i>Forestry Commission Act, 1999 Act 571</i>	An Act to re-establish the Forestry Commission in order to bring under the Commission the main public bodies and agencies implementing the functions of protection, development, management and regulation of forests and wildlife resources and to provide for related matters.
<i>Timber Resource Management Act, 1997 - Act 547:</i>	An ACT to provide for the grant of timber rights in a manner that secures the sustainable management and utilization of the timber resources of Ghana and to provide for related purposes.
<i>Timber Resources Management Act 617 (Amendment) Act, 2002:</i>	An ACT to amend the Timber Resources Management Act 1997 (Act 547) to exclude from its application land with private forest plantation; to provide for the maximum duration, and maximum limit of area, of timber rights; to provide for incentives and benefits applicable to investors in forestry and wildlife and to provide for matters related to these.
<i>Forest & Plantation Development Act, 2000 Act 583</i> <i>L.I. 1649 - Timber Resources Management Regulations, 1998</i> <i>L.I. 1721 Timber Resources Management (Amendment)</i> <i>The Forest Protection (Amendment) Act, 2002 Act 624</i> <i>The Trees & Timber (Amendment) Act, 1994</i>	- - - -
Environmental	
EPA Act 1994 (Act 490)	Provides for the establishment of an Environmental Protection Agency with functions among others, to 'advise the minister on the formulation of policies on all aspects of the environment and in particular make recommendations for the protection of the environment'. The other parts of the Act include Enforcement and Control which gives powers to the Agency to request for an ESIA; Part three establishes an Environment Fund and finally Part four describes the administration and general provisions of the Act.

		<p>Part 1 of the Environmental Assessment Regulations, 1999 LI 1652 on Environmental Permit describes undertakings requiring registration and issuance of environmental permit, as:</p> <p>1. (1) No person shall commence any of the undertakings specified in Schedule 1 to these Regulations or any undertaking to which a matter in the Schedule relates, unless prior to the commencement, the undertaking has been registered by the Agency and an environmental permit has been issued by the Agency in respect of the undertaking.</p> <p>2. No person shall commence activities in respect of any undertaking which in the opinion of the Agency has or is likely to have adverse effect on the environment or public health unless, prior to the commencement, the undertaking has been registered by the Agency in respect of the undertaking.’</p> <p>The list of undertakings requiring environmental assessment is provided in the Annex 1 together with the list of environmentally sensitive areas, Annex 2 in which developments are to a large extent, prohibited.</p> <p>The procedures establish an ESIA process to among others, provide enough relevant information to enable the EPA to set an appropriate level of assessment of any proposed undertaking, investment or programme for the necessary review and to facilitate the decision making process for the ESIA approval. The procedures comprise activities such as project Registration, Screening, Scoping, EIS preparation, and Public hearing. The administrative flow chart suggesting a total processing time of 90 days is shown in the Annex 3. The procedures are statutorily recognised under the EPA Act 1994 (Act 490).</p> <p>The Environmental Assessment (Amendment) Regulations, 2002 (LI 1703) is an amendment to LI 1652 and provides for the substitution of regulations relating to ‘fees and charges for environmental permits and certificates’.</p> <p>It is anticipated that the Programme will abide by these legislative provisions and procedures as and when applicable, and that all proposed interventions will be mindful of the requirements of the EPA Act 1994 (Act 490).</p>
	Land	
	<i>The Lands Commission Act 2008, Act 767</i>	The Lands Commission Act 2008 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.
	<i>The State Lands Act 1962, Act 125</i>	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.
	<i>Survey Act 1962, Act 127</i>	The Survey Act 1962, Act 127 relates to geological, soil and land survey. Part II of the Act deals with demarcation and survey of lands. Under the law, the sector minister may appoint official surveyors and the Chief Survey Officer (Director of Surveys) may license private surveyors. It is the official surveyor or licensed surveyor that shall certify plans for attachments to instruments of conveyance, leases, assignment, charge or transfer. Under the law it is an offence to damage, destroy or alter any boundary mark.

		The Act 127 gave legal backing to the Director of Surveys to carryout cadastral and other surveys through official surveyors who work directly under him at the Survey Division of the Lands Commission. It also gave authority to the Director of Surveys to recommend from time to time experienced surveyors to the Minister responsible for Lands to be licensed to undertake surveys.
	<i>The Lands (Statutory Wayleaves) Act, 1963</i>	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 Further to this Act, the Statutory Wayleave Regulations, 1964, provide procedural details and address grievance mechanisms.
	<i>The Land Title Registration Act 1986, PNDCL 152</i>	The challenges arising from registration of instruments under the Land Registry Act 1962, Act 122 led to the promulgation of the Land Title Registration Act 1986, PNDCL 152 which would be an improvement on the registration of deeds. The Law provides for among others, accurate parcel or cadastral maps which would reduce fraud, multiple registrations and reduce litigation.
	<i>Office of the Administrator of Stool Lands Act 1994, Act 481</i>	The Act establishes the Office of the Administrator of Stool Lands as enshrined in Article 267 (2) of the 1992 Constitution and it is responsible for establishment of stool land account for each stool, collection of rents and the disbursement of such revenues.
	<i>Water Resources</i>	
	<i>Water Resources Commission Act 1996, Act 522</i>	The Water Resources Commission (WRC) Act 1996 (Act 522) establishes and mandates the WRC as the sole agent responsible for the regulation, management and utilisation of water resources and for the co-ordination of any policy in relation to them. The Commission does this through the granting of water rights to potential water users.
	<i>Water Use Regulations 2001, LI 1692</i>	The Water Use Regulations 2001 (LI 1692) enjoins all persons to obtain Water Use Permits from the Water Resources Commission for commercial water use. The Commission is also mandated to request for evidence that an environmental impact assessment or an environmental management plan has been approved by the EPA before issuance of the Water Use Permit.
	<i>Others</i>	
	<i>Ghana Investment Promotion Centre Act 1994, Act 478</i>	The Ghana Investment Promotion Centre Act 1994 (Act 478) requires that every investor wishing to invest in the country must in its appraisal of proposed investment projects or enterprises, "...have regard to any effect the enterprise is likely to have on the environment and measures proposed for the prevention and control of any harmful effects to the environment...".
	<i>The Local Government Act 1993, Act 462</i>	The Local Government Act 1993 (Act 462) empowers the Assemblies to establish Waste Management Departments to be responsible for the development and management of waste disposal sites within their areas of jurisdiction.
	<i>Factories, Offices and Shops Act 1970, Act 328</i>	The Factories, Offices and Shops Act of 1970 (Act 328) requires all proponents to register every factory with the Chief Inspector of Factories Inspectorate Division.
	<i>The New Labour Act 2003, Act 651</i>	Section 118(1) of the New 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.
	<i>The Fire Precaution (Premises)</i>	The Fire Precaution (Premises) Regulations 2003 (LI 1724) requires all premises intended for use as workplaces to have

	<i>Regulations 2003, LI 1724</i>	Fire Certificates.
	<i>The Constitution of the Republic of Ghana 1992</i>	The Constitution of the Republic of Ghana 1992 makes provisions that protect the right to private property and sets principles under which citizens may be deprived of their property in the interest of the public.
	<i>The State Lands Act 1962, Act 125</i>	The State Lands Act 1962 (Act 125) has vested authority in the President of the Republic of Ghana to acquire land for the public interest via an executive instrument.

ANNEX 2: Some Recommendations from the SESA Study

The following recommendations were made for the sustainable implementation of the REDD+ Mechanism from the SESA study:

Natural Resources

Protection of water resources and adopting riparian buffer zones as REDD+ designated areas

In all the three regional workshops, development of buffer zones around key rivers/water bodies into forest was one of the top five priorities. It is recommended that buffer zones around selected key rivers be part of REDD+ designated areas while implementing the riparian buffer zone policy. This will involve enactment of bylaws, demarcation of boundaries, acquisition of buffer areas where necessary, provision of alternative livelihoods or relocating farmers beyond the buffer zones by supporting them through irrigation options and enforcement of buffer zones along selected water bodies. Stakeholders should agree on the key rivers to be selected. This will require collaboration among key institutions such as WRC, FC, EPA, MMDAs and TAs. Lessons should be learnt from the Sustainable Water and Lands Management Project coordinated by the EPA and implemented at the northern savanna eco-agricultural zone of the three northern regions (Northern, Upper East and Upper West Regions) of Ghana to improve this proposed intervention.

Promote Dedicated Forests/Community Forests and CREMAs under REDD+

Dedicated forests are designed to enable communities to manage their own forest 'reserves' based on approved management plans. These are in the form of patches of forests, sacred groves and secondary forests in off-reserve areas. A dedicated forest management scheme was initiated in 1994, under a pilot scheme, two communities were assisted to declare and manage Dedicated Forests (215 ha & 190 ha), in Fosu district. The results proved very positive, and draft legislation and a programme to promote dedicated forests were formulated in 1997, but no further action was taken.

It is recommended that dedicated forests or community forest concept be revisited and the suspended draft legislation modified to include benefits under REDD+ and pursued into law. The legal backing will ensure that chiefs or TAs cannot in themselves change the land use of such dedicated forests.

The concept of CREMAs appears to be gaining grounds in the communities around protected forests. Currently, there are about 27 CREMAs country-wide. It is recommended to promote the concept and formation of CREMAs under REDD+ to cover GSBAs.

Protected Reserves and Globally Significant Biodiversity Areas (GSBAs)

It is recommended that all protected reserves (with their CREMAs) and GSBAs be considered as REDD+ designated areas. This will enable the landowners, stool and local communities to benefit from carbon credits under REDD+ as a form of payment for environmental services. Currently, the TAs/stool/local communities do not enjoy any form of royalty payment from GSBAs because there is no timber exploitation allowed in these areas. This issue is of major concern to TAs whose jurisdiction cover GSBAs

because their counterparts in charge of production FRs enjoy royalty payments. Unlike protected reserves which are expected to be acquired by the State with appropriate compensation payment to land owners, it is not the case with production FRs and GSBAs.

Preparation of Pest & Pesticide Management Plan (PPMP)

Climate change, trade liberalization, and agricultural intensification activities under REDD+ (e.g. irrigation farming, increased fertilizer and pesticides use, introduction of new crops and varieties, changes in land use and landscape etc.) could trigger the occurrence of new pest problems.

It is recommended that when REDD+ sub-component activities are finalized, a Pest & Pesticide Management Plan be prepared for REDD+. The plan should include arrangements for frequent pest risk surveillance and modalities for continuous updating of the existing pest list. The EPA and the PPRSD are currently the lead institutions in managing invasive alien species and should be key actors in the preparation of the PPMP for REDD+.

Socio-cultural

Partnerships with Traditional Authorities

The traditional authorities have a huge influence on forest reserve lands under their domain, land allocation for agricultural/ farming purposes, land-use and development in the country and are therefore very critical in the implementation of the REDD+ Mechanism. Conscious effort must be made to develop partnerships with them.

The 1974 Report of the Committee of Enquiry into the Grievances of Farmers being ejected from certain Forest Reserves (Manzan, Sukusuku, Bia Tawya, Bodi and Tano-Ehuro) in the Western Region (constituted in April 1974) concluded that some traditional authorities were involved in granting lands in forest reserves to farmers, most of whom were strangers/settler farmers; and also where there are disputes between traditional authorities/paramount chiefs, some chiefs illegally grant lands in such disputed areas to farmers presumably to establish their authority over these disputed lands.

Some traditional authorities/some members of the National House of Chiefs were involved during the preparation of the REDD+ Readiness Preparatory Proposal, and some traditional leaders also took part in meetings and workshops organized as part of the SESA process and made useful contributions. The meetings and interaction with the Traditional Authorities should be regularized and strengthened to ensure their total support for the REDD+ Mechanism.

A REDD+ caucus of chiefs for the cocoa landscape should be put in place for regular engagement, to solicit support for and promote the agricultural tenancy agreement under the LAP for the cocoa landscape, information dissemination on REDD+ and for advice. Alternatively, the FC could have regular engagement with the various Regional Houses of Chiefs especially within the cocoa landscape (e.g. Western, Eastern Ashanti, Brong Ahafo, Central and Volta Regions) on REDD+, solicit support for the agricultural tenancy agreement under LAP. The FC can support the formation of subcommittee on REDD

at the Regional House of Chiefs level and also take advantage of their meetings to make presentations on REDD, disseminate information and solicit their input/support and advice among others.

Gender and Socially Exclusive/Vulnerable

Gender affirmative action for REDD+ implementation structures

Gender issues were raised, discussed and captured as part of the SESA in both the Scoping and SESA Reporting. A gender road map for REDD+ was developed in November 2011 with support from IUCN and FC. To address the possibility of gender discrimination against women and vulnerable groups, the application of gender affirmative action should be mandatory in REDD+ programmes and structures. The benefit sharing structures, dispute resolution structures, implementation, M&E structures and MRV system should all have a gender officer or co-ordinator with a gender 'eye' as part of the teams. Furthermore, gender orientation and training should be given to FC frontline staff, district/regional FC officials, REDD+ Secretariat staff, and such gender orientation should also devolve to the TAs and community level as part of all REDD+ community engagement programmes to eliminate gender/social conflicts that could arise during REDD+ implementation.

Special assistance/support to vulnerable groups/women

Vulnerable groups (e.g. landless farmers, settler farmers without proper land documents, women (especially widows), physically challenged farmers etc) should be identified and assisted. Vulnerable groups should be assisted with land documentation requirements and obtain legal title to lands. Competition and high demand for land in all the communities, promote encroachment on forest reserves for forest resources and products. Most rural women do not often have the financial means to expand or lease land for farming and will require some financial support to be able to access land for REDD+ projects. Co-ownership of land among spouses often bring conflict resulting in divorce and rancor. An MOU should be developed to cover co-ownership of land for REDD+ projects clearly indicating benefit sharing arrangements.

Protection of Culturally Sensitive Sites

The implementation of the REDD+ interventions should identify and protect culturally sensitive areas as prescribed in the Environmental Assessment Regulation 1999, LI 1652. Key culturally sensitive sites include cemeteries, shrines and sacred groves. Some of the measures that can be introduced may include:

- No relocation of key culturally sensitive sites in on-reserves or off-reserves under REDD+ interventions;
- Provision of access to communities/TAs to culturally sensitive sites in on-reserve as well as at off – reserve areas designated as REDD+;
- Support for and enhancement of identified/designated cultural heritage sites; and
- Monitoring to prevent encroachment and abuse of such areas.

Recognise and Manage Socio-cultural norms

Socio-cultural factors play vital roles in programme/project success or failure. It is indispensable therefore in land use and management. Those whose access to land is purely rooted in culture and

inheritance are most likely to be hit by this. Therefore where family/clan lands are involved, the consultations should go beyond the stool/traditional authorities to the family level.

Cultural restrictions and traditional norms that do not ensure equity in land distribution and ownership with respect to gender need to be addressed in collaboration with respective traditional authorities especially in the savannah zone.

Food Security Implications under REDD+

Food security issues under REDD+ was one of the top five prioritized issues from the three regional workshops. The field consultations also revealed that the modified taungya system of rehabilitating forest reserves not only improved food production in the country during the period but also enhanced income of beneficiary farmers. It is recommended that the modified taungya system be used or adopted where appropriate for rehabilitation of forest reserves. Lessons should also be learnt from previous modified taungya system especially with regard to RMSC capacity, data storage and monitoring to improve the system.

It is also recommended that off-reserve tree plantation projects should have a specified percentage of land (i.e. out of the total area earmarked for the plantation project) to be dedicated to or put under food/crop cultivation. The percentage of land to be allocated for crop cultivation should be agreed upon by relevant stakeholders including MoFA, FC, NGOs. The sub-component activity of improving productivity of farmlands (under Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)) be properly executed with the involvement of MoFA at the district and regional level to ensure success, which will go a long way to improve and increase food production.

Illegal Farms/Settlements

In addressing illegal farms/settlements in Forest Reserves, varied approaches have to be adopted. For farms where mostly crops cultivated are of annual duration, the modified taungya system could be adopted, and this could improve local food production and security and management of the forest resources. For farms where mostly perennial crops are cultivated, a cut-off arrangement is required to prevent future expansion of the farm in the reserve. With regard to illegal settlements, the law should be enforced.

Economic

Sustainable Alternative Livelihoods for Communities heavily dependent on forest resources

Some alternative livelihood schemes were suggested during the field consultations and these include:

- Animal rearing: sheep, goats, etc
- Non-farm business: soap making, tie/dye, sewing/dressmaking etc
- Tree crop/fruit production- Mango, water melon (transition/savanna zones)
- Vegetable production – with irrigation support
- Vetifa grass for baskets leather works smock
- Irrigation farming- food crops
- Aquaculture

- Bee-keeping
- Tree seedlings cultivation for commercial purposes

There are some alternative livelihood projects ongoing in the forest fringe communities in the Western Region but consultations with local communities revealed that such projects were not properly monitored and the income derived from these projects were not sustainable. It is recommended that alternative livelihood projects to be implemented under REDD+ should include adequate monitoring mechanism to ensure that the objectives are achieved. Identification and inclusion of markets/consumption outlets for such projects should form part of the project concept. The alternative livelihood projects should especially target the lean/ dry seasons when farming activities are minimal or absent and should also be gender responsive.

It is recommended that tree crop /tree fruit production, woodlot production for commercial purposes as well as irrigation farming be seriously considered for transition/savanna zones as sustainable alternative livelihood scheme options.

For the HFZ farmers, no specific sustainable alternative livelihood schemes are recommended across board. However, as indicated earlier, markets, monitoring and ensuring returns to such small scale enterprises should be part of the planning arrangement of the scheme to ensure sustainability of such schemes or projects or schemes.

With regard to the provision of alternative livelihood schemes for illegal chain saw operators, the following are recommended:

- Support artisanal lumber/illegal chain saw operators with micro-credit for livelihood activities for income generation.
- Support artisanal lumber /illegal chain saw operators to go into tree plantation projects
- Reform law to implement artisanal milling on national level
- Train artisanal/illegal loggers into production and distribution of improved cook-stoves/fuels for carbon credits

Alternative means of addressing economic and livelihood activities in the transition and savannah zones is appropriate to discourage unwarranted use of forest resources.

Promote reliable, affordable and sustainable sources of energy and alternative cooking technologies

Under Strategic Option H (Improve sustainability of fuel wood use), the FC should collaborate with the Energy Commission under the REDD+ mechanism to promote affordable, reliable and sustainable sources of energy and alternative cooking technologies, e.g. clean cookstove technology, use of LPG gas for cooking, etc especially in the local communities in the transition and savannah ecological zones. This will reduce the use of charcoal and fuel wood as energy sources. It will reduce the time and effort of women directed to cooking or at the kitchen, with positive health impacts and saving their time for other productive purposes geared towards additional income generation, which will go a long way to improve family wellbeing and income.

The Government of Ghana /Ministry of Energy should ensure that the pricing of LPG gas for domestic usage (e.g. when the Ghana Gas Project is in full operation) should not be dependent on economic factors alone (e.g. cost of production, demand/supply or market forces etc) but environmental consideration should be factored). Most of the charcoal produced in the transition zone is transported to the south for use. Though the SESA did not conduct specific study into charcoal and LPG gas usage at household levels, it has become a common practice for people to buy charcoal in addition to gas, because of the issue of reliability and price of gas.

Institutional

SEA Capacity building/Training for FC REDD+ Secretariat & FC frontline staff

The SEA/SESA reports are living documents which should be used to guide further refinement and implementation of proposed REDD+ strategy interventions where necessary. As the whole concept of REDD+ is still evolving, new strategy options or revision of proposed strategy options are likely to emerge.

It is recommended that capacity building/training for key FC REDD+ Secretariat staff as well as FC frontline staff at the head office and regions in SEA principles be organised. This will also position the FC to be able to carry out basic SEA and sustainability appraisals for its policies/plans/programmes within the various divisions of the FC with the aim of mainstreaming environmental and social considerations at the policy or strategic level of decision making for the forestry sector of Ghana. In this way, the FC interventions will become more sustainable, environmentally friendly and socially acceptable. The Ghana EPA offers such SEA training programmes and has considerable experience and capacity to carry out such training if requested.

Conduct of EIA/SIA for REDD+ Sub-projects

This SESA was done at a strategic level and therefore not meant to identify and address location and site specific environmental/social impacts. During the implementation of various specific interventions, specific individual project level assessments must be done to address site specific project impacts in accordance with LI 1652. Initial screening of subprojects using EPA Form EA 1 can be carried out to inform the Agency on what level of reporting or permitting is required. Possible interventions such as acquisition of large tracts of land for tree plantations in off-reserve areas may have the potential to generate site specific significant environmental/social impacts and must therefore be subjected to detailed EIA or SIA in order to make them environmentally sound, socially acceptable and economically feasible. The EPA requires that undertakings in excess of 40 ha be registered with the Agency and permit obtained prior to implementation.

Use of spatial analysis and GIS Maps at the district/regional levels

The findings from the spatial analysis and forest cover trends (for 1990, 2000 and 2010) threw more light on the role of remote sensing and GIS in forest management. It could be observed that both vegetation cover (forests) have undergone some degree of degradation over the past twenty year period.

It is recommended that the FC/RMSC procure images of the same time overpass (date) in each of the years so as to get as much as possible the same energy reflectance captured by the sensors. It is also recommended that in-depth ground truthing be carried out to validate the findings because re-coding sections of the images without in-depth field validation could also affect the classification.

The Forestry Commission should take measures to develop a project which will establish the forest cover trends showing fringe communities for all the forest reserves and protected areas in the country and make such maps available to the district/regional FC officials to facilitate field monitoring.

Legal/Policy Reforms

Reforms and Amendments for REDD+

In addition to the ongoing reforms and discussions on tree tenure, carbon rights allocation, the following should also be pursued for REDD+:

- Review of the 1999 Land Policy: Section 4.4 (d) of the land policy should be reviewed to include use of off-reserve areas also for community forestry/resource management areas.
- The FC should collaborate with the MC during designation of REDD+ areas in off-reserves. Currently, there are a number of mineral right holders carrying out various exploration/prospecting activities and their concession areas should be taken into consideration in the selection of off-reserve REDD+ areas.
- The FC should push for a policy or law, which will give some level of protection for REDD+ designated areas in off-reserves with regard to land subject to the allocation of Mineral rights (Section 3 of the Mineral and Mining Act 2006, Act 703 and surface right issues (Section 72 (1) of the Minerals and Mining Act 2006, Act 703). This should be done in consultation with the Minerals Commission.
- Amendment to the Alternative Dispute Resolution Act 2010, Act 798 to include in its scope of application some environmental/forestry matters (and specify which environmental matters to be included in the scope in agreement with key stakeholders such as EPA, FC, WRC, LC, MC, FC) or specifically include in the scope of application forestry matters as applied to REDD+.

Admitted Farms/Settlements in Forest Reserves

Admitted farms/settlements were allowed during the creation of forest reserves. These farms/settlements have gone beyond their demarcation/ recognized boundaries over the years and so extending their activities further into the reserves, causing further deforestation/forest degradation. These farms/ settlements have also become pretext for unrestricted access into such reserves by all kinds of people with diabolical intentions (e.g. to carry out illegal activities - encroachment, farming, chain saw activities).

In the immediate term, boundary demarcation for such farms, which have started in some forest reserves should continue and extended to all admitted farms/settlements to re-delineate the boundaries for admitted farms/settlements. The FC should clearly indicate in writing to the admitted farmers/settlers their roles/responsibilities and underlying reasons of their continual existence in the forest.

In the long term however, this policy of admitted farms/settlements is not in tandem with the principles of forest conservation or protection and should be reviewed if not abolished. During the field engagement, the WD of the FC in Takoradi indicated that the Division has successfully relocated all settlements/farms in its protected areas and we recommend the same to be carried out for affected production forest reserves.

Litigation and Penal System

1. The FC should collaborate with the Judiciary/ Chief Justice on how to form special tribunals in selected regions (e.g. Western, Brong Ahafo and Northern Regions) to speedily dispose of litigation in forest offences/ forest reserves.
2. The FC in collaboration with the EPA and WRC should organise a training workshop
 - a. to discuss and share information on better ways of creating synergies among the Judiciary, Police, Forestry Commission and other stakeholders so that cases involving forestry offences/ forest reserves or general environmental matters are correctly prepared within shorter time-frames and successfully brought before the court and adequately and fairly prosecuted and adjudicated according to law with deterrent fines and penalties.
 - b. To discuss forestry and environmental laws and also the ecological justification for the conservation of forests/biodiversity to ensure protection of water bodies, climate change issues, livelihoods security for local communities highly dependent on the forest resources.
3. The FC should enhance the capacity of its prosecutors to be able to prosecute effectively and also seek injunctions on illegal farming activities in the reserves. Hitherto, when FC field officers attempt to destroy illegal farms in FRs, farmers go to court seeking injunctions to restrain FC field officers from destroying such illegal farms. Meanwhile the illegal farming activities continue and many times farmers do harvest even before court cases are finally determined. There is no restrain or injunction on the farming activity. Injunctions should restrain both parties' access to land in dispute.
4. The Forest Protection (Amendment) Act 2002, Act 624 has been in existence for the past twelve years. The Act should be reviewed to consider harsher and deterrent fines and penalties. It is recommended that the fines be reviewed every two or three years (e.g. in like manner as the Fees and Charges Instrument are regularly reviewed or amended for the public sector).

Declassification of some forest reserves

It is recommended that further studies be conducted on all Forest Reserves to determine those forest reserves which are almost depleted and beyond recovery due to conversion into other land use. These FRs should be declassified as such. Identified patches of forests or sacred groves or secondary forests in such affected reserves should be given to the community or stool to manage under dedicated forest or community forest management arrangement.

The Juabeso Forest district in the Western Region has 7 forest reserves, all of which are suffering degrees of encroachments. Four of the reserves are almost converted to cocoa farms and settlements while the remaining are under stress. The under listed reserves may be very difficult, if not impossible to restore and therefore recommended that these reserves be declassified:

- Sukusuku FR

- Manzan FR
- Bia-Tawya FR
- Bodi FR

Political Will and Financial Commitment

A non-partisan approach should be adopted to secure political will in curbing illegal activities in the on- and off reserves. The FC should liaise with a reputable international NGO (e.g. IUCN) to organize a bi-partisan conference on the state of the Ghanaian forests/environment and the climate change threats for the major political parties in the country, key TAs and other relevant NGOs. The purpose of the conference is to arrive at a consensus going forward. There is also the need to make available, adequate financial resources for forest management.

Cross Sectoral/Institutional Collaboration from national to district levels

The implementation of the REDD+ interventions cuts across sectors (e.g. forestry, agriculture, cocoa, energy, water resources, mining, fire among others) and would involve a number of institutions. This could generate conflicts and duplication of roles and responsibilities. Effective structures, arrangements and communication should be established to promote cross sectoral collaboration and dialogue among relevant sector agencies from the national level to the district level where actual implementation of projects will occur to ensure that all challenges/ bottlenecks with implementation and monitoring of any intervention are timely resolved.

The REDD+ should support and take advantage of the various opportunities or similar interventions ongoing under relevant public sector agencies (e.g. COCOBOD, MoFA, EPA, MMDAs) and involve or use such agencies to deliver or implement such REDD+ projects instead of creating parallel structures at the FC to implement such projects. Proper MOU/contract and budget should be put in place to guide the collaboration with relevant institutions.

ANNEX 3: Screening checklist for Environmental and Social Issues

1. Project Information: Name and Contact Details:			
Project Name	Location: (region/district/village)		
	If other, explain:		
FSD District Focal Point			
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 to transfer to subproject	
Any plans for construction, movement of earth, changes in land cover	

3. Preliminary Environmental Information:	Yes/No	Refer to Resettlement Policy Framework	Comments
Is there adjacent/nearby critical natural habitat?			
Is there activities On Forest Reserve?			
Is there activity adjacent to Forest Reserve?			

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 using natural resources in any traditional areas including medicinal plants or those of economic value for livelihoods?		✓	
Will there be water resource impacts?			
Will there be soil impacts?			
Will the subproject require use of pesticides?			If Yes, refer to Pest Management Plan
Are there any new or changing forest management planning or activities?		✓	
Any cultural heritage/sacred sites in project area?		✓	

4. Preliminary Social and Land Information:	Yes/No	Refer to Resettlement Policy Framework	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 (customary, lease, community lands, etc)?		✓	
Is there evidence of land tenure status of farmers and/or occupants (affidavit, other documentation)?		✓	
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 farmer benefits and community benefits?		✓	
Will any restoration or compensation be required with "admitted" farmers?		✓	

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 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	
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	
Land and Farming Tenure	No conflicts, disagreements around use of land, tenant farmer rights and location of admitted farms and farmers transparent	Process of land regularization and rights to natural resources being worked out with clear communication and grievance process in place	Land conflicts historically unresolved, admitted farmers being evicted, tenant farmers losing rights and no transparency or grievance redress available	If Medium or High Refer to Resettlement Policy Framework

6. E & S assessment comments based on site visit:
Summary Observations

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

- ☐ Requires an EIA
☐ Requires preparation of additional E&S information
☐ Does not require further environmental or social due diligence

Prepared by:

Date:

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 plantation area less than 40ha?			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 (refer to Annex 3)			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

ANNEX 4 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 5: 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 Feed mills	-
BEVERAGES	Distillery products	-

SECTOR	Sub sector	Description
	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, planing 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 compounds Other chemical products	-

SECTOR	Sub sector	Description
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 do not occur at the time of the proposed

SECTOR	Sub sector	Description
		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 6: 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 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.

ANNEX 8: STAKEHOLDER CONSULTATION

Stakeholder institutions and communities have been consulted in the various regions:

WESTERN REGION

Contact person	Position	Contact number	Date
Forestry Service Division (FSD), Takoradi			
Mrs Lydia Opoku	Regional Manager		18-03-2014
Emmanuel Yeboah	Assistant Regional Manager	0200373979	
Samuel Agyei-Kusi		0270454066	
Augustine Gyedu	Assistant Regional Manager	0208170822	
S. A. Nyantakyi	Assistant District Manager	0243102830	
Wildlife Division, Takoradi			
Felix Nani	Acting Manager	0206289085	19-03-2014
Wildlife Ankasa Camp, Elubo			
Ezekiel Bannyemanyea	Community Affairs	0207601311/0245852247	19-03-2014
Bismark Ackah	Registry	0206770907	
Bona Kyiire	Assistant Wildlife Officer	0244505192	
Papa Kwao Quansah	Tourism Officer	0205957949	
Enchi, Aowin District			
Mr. Fosu Lawrence	FSD, District Manager	0244581957	20-03-2014
Mr. Okyere Darko	OASL, District Officer	0244241034	21-03-2014
Mr. Oduro Boampong	Aowin District Assembly-DPO	0244830698	21-03-2014
Mr. Yaw Adu	MOFA, District Director	0249105224	21-03-2014
Mr. Felix Appiah	District Cocoa Officer CSSVD/Extension	0203733102	21-03-2014
Sefwi Wiawso Municipal			
Mr. Samuel Obosu	SWMA-MPO	0244433031	24-03-2014
Mr. Andrew Ackah	OASL-Municipal Officer	0243684078	24-03-2014
Mr. Issah Alhassan	CHRAJ-Municipal Officer	0240195541	24-03-2014
Mr. Samuel Amponsah	COCOBOD-Regional CSD Head	0244560785	24-03-2014
Mr. George Dery	FSD-District Manager	0244684857	
Mr. Justice Niyuo	FSD Assistant District Manager	0242171767	24-03-2014
Timber Industry Development Division (TIDD), Takoradi			
Dr. Benjamin Donkor	Executive Director	0203893725	26-03-2014
Mr. Yaw Kumi	Contracts & Permits Manager	0244503857	
Mr. Faakye Collins	Timber Grading & Inspection Manager	0208135037	
Mr. Peter Zomelo	Trade & Industry Development Manager	0244376246	

Jomoro District

Amokwah CREMA Date: 21-03-2014

1. Paul Kodjo, Chairman, 0208412085
2. Ama Foriwaa, Executive member, 0209874607
3. Barima Moro, Executive member, 0209167883

Nsuano Community

Date: 21-03-2014

No.	Name	Position/Designation	Age	Occupation
1	John Amponsah	CEC Secretary	58	Farmer
2	Nana Mbala	Chief of Nsuano		Farmer
3	Samuel Akowa	Chief-Tenant farmers		Farmer
4	Francis Amo	Youth Leader		Farmer
5	Lolonyo			Farmer
6	Kofi Kusase			Farmer
7	Agyemang Nketia	Elder/Opinion Leader		Farmer
8	Ewoku Ndele	Linguist		Farmer
9	Nuro James		37	Farmer
10	Collins Coffie		22	Farmer
11	Sampson Kombate		32	Farmer
12	Issa Alhassan		41	Business man
13	Kwabena Peter		34	Farmer
14	Yaw Abanga		31	Farmer
15	Appiah Josh		34	Farmer
16	Ohene George		33	Farmer
17	Zufura Seidu		43	Farmer
18	Musah Anbela		48	Farmer
19	Opanin Samuel Obuobi		60	Farmer
20	Kwame Manu		38	Farmer
21	Nana Yaw	Ahohohene	59	Farmer
22	Robert Gyimah		46	Farmer
23	Augustine Tawiah		34	Farmer
<i>Women</i>				
1	Beatrice Afrifa		28	Trader
2	Patricia Amedi		22	Trader
3	Grace Anamba		42	Farmer
4	Charlotte Amponsah		33	Business woman
5	Irene Amedi		26	Business woman
6	Diana Nyuenmawor		25	Farmer
7	Ama Musah		42	Farmer
8	Christina Ehimaa		35	Farmer
9	Vida Nyarko		45	Farmer
10	Faustina Anaaba		24	Farmer
11	Margaret Fouaa		32	Farmer
12	Akua Abulaih		24	Farmer
13	Faustina Ohenewaa		39	Farmer
14	Rashalutu Alhassan		45	Farmer
15	Hawa Groma		65	Farmer
16	Faustina Afia Nyamekye	CEC Treasurer	53	Farmer/Business woman
17	Sophia Ackah		51	Farmer/Business woman

Sefwi Wiawso District

Akurafo Community

Date: 22-03-2014

No.	Name	Position/Designation	Age	Occupation
1	Atta Kofi		48	Suhuma Timber Co
2	Nana Yaw Fosu	Nkosohene	40	Farmer
3	Yaw Gyabeng		60	Farmer

4	Christiana Owusu		54	SPU-Cocobod
5	Hannah Mesumekyere		70	Farmer
6	Ama Konadu		67	Farmer
7	Joseph Boakye		45	Storekeeper
8	David Nsowah		85	Farmer
9	Osumanu Mohammed		35	Farmer
10	Lardi Adu		60	Farmer
11	Seidu Patron		49	Farmer
12	Opong Frimpong		35	SPU-Cocobod
13	Isaac Sampa	Assemblyman	35	SPU-Cocobod
14	Joseph Sarkodie		40	Farmer
15	Osuman K. Oppong		73	Farmer
16	Thomas Sampa		25	Farmer
17	Kofi Abudu		48	Farmer
18	Kwame Sumaila		35	SPU-Cocobod
19	Yaa Mary		31	Farmer
20	Felicia Nsowah		36	Farmer
21	Adama Asante		82	Farmer
22	E. A. Sampah		72	Farmer
23	Mary Armah		70	Farmer
24	Nicholas Armah		68	Farmer
25	Samuel K. Baah		60	Farmer
26	Gidi Kwesi		29	Farmer
27	Amina Attah		106	Farmer
28	Kwame Owusu		45	CSSCD
29	L. B. Kuranteng		64	Farmer
30	Emmanuel Abusale		45	Farmer
31	Sapato Ocloo		51	Agriculturalist
32	Asuntaaba Atingah		35	Farmer
33	Inusah Mohammed		54	Agriculturalist
34	Edward Mensah		16	Pupil
35	Sampa Daniel		18	Mechanic
36	Emmanuel Tuona		20	Mechanic
37	Abdela Mohammed		18	Pupil
38	Kofi Gyamfi		31	Farmer
39	Ebenezer Coffie		26	Farmer

Kunuma community

Date: 24-03-2014

No.	Name	Position/Designation	Age	Occupation	Phone contact
1	Bona Isaac		39	Teacher	0242541653
2	Kyere Dacosta		26	Farmer	0248994346
3	Opoku Antwi		27	Farmer	0549260706
4	Freeman Dollar		54	Farmer	0246519040
5	Nana Boamah	Reagent	70	Farmer	
6	Abu Sulam	Assemblyman	46	Farmer	0240849350
7	Osei George	Unit Committee member	40	Farmer	0241988330
8	Boamah Stephen		30	Farmer	0242072936
9	Mammud Moro		38	Farmer	0240170484
10	Kwasi Badu		64	Farmer	
11	John Azubi		53	Farmer	0543648473

12	Philip Gyabeng		42	Farmer	0243753771
13	Kwasi Ninkyin		35	Farmer	0246559443
14	Appiah Isaac		41	Farmer	0540560701
15	Charles Yaw		37	Farmer	
16	Michael Nkuah		60	Farmer	0247113896
17	Jacob Ackaah		46	Farmer	0548789780
18	Ibrahim Alhassan		39	Farmer	0242549346
19	Naomi Appiah		30	Farmer	0249091093
20	Agatha Kwesi		67	Farmer	
21	Ama Antobam		67	Farmer	
22	George Opoku Mensah		47	Driver	
23	Amoah Johnson (K.O)		47	Farmer	
24	Adu Frimpong		50	Farmer	
25	Opanyin Kwame owusu		89	Farmer	
26	John Boadu		59	Farmer	
27	Paul Yeboah		47	Farmer	
28	Kwadwo Nyarko		56	Farmer	
29	Anthony Osei		27	Farmer	
30	Joseph Alhassan		32	Farmer	
31	Elder Asiedu		64	Farmer	0249233768
32	Kwabena Kra		42	Farmer	0541784659
33	Kwadwo Fodwo		70	Farmer	
34	Vincent Kwarteng		29	Farmer	0246831047
35	Gyabeng Daniel		31	Farmer	
36	Attah Kofi		45	Farmer	
37	Thomas Baidu		57	Farmer	
38	Teacher Attah		55	Teacher/Farmer	
39	Kwabena Prah		39	Farmer	
40	Teacher Amoah		54	Teacher/Farmer	0248694596
41	Kofi Oduro		31	Farmer	0248907968
42	Kwabena Abokye		39	Farmer	0209285024
43	Asumang Adu Benedict		26	Farmer	0240877735
44	Sulley Mbugre		42	Farmer	0245128446
45	Asante Richmond		29	Farmer	0244562794
46	Musah Gjar		70	Farmer	
47	Rebecca Kyei		35	Farmer	0274386626
48	Cecilia Mensah		42	Farmer	
49	Charity Afful		25	Farmer	
50	Grace Brun		45	Farmer	
51	Agnes Asoh		45	Farmer	
52	Alimatu Gjar		27	Farmer	
53	Akosua Boatema		45	Farmer	
54	Mercy Oduro		26	Farmer	
55	Akosua Vivian		30	Farmer	
56	Adwoa Broni		55	Farmer	
57	Gloria Fosuah		36	Farmer	
58	Cynthia Yeboah		29	Farmer	
59	Theresa Nsiah		40	Farmer	
60	Vivian Owusu		43	Farmer	
61	Abena Gyaako		32	Farmer	
62	Margaret Opoku		52	Farmer	

63	Nana Ama		33	Farmer	
64	Akyaa Nyame		45	Farmer	
65	Zinabu Lareba		40	Farmer	
66	Abena Badu		29	Farmer	
67	Georgina Mensah		30	Farmer	
68	Charlotte Asante		22	Farmer	0540827119
69	Yaa Tano		25	Farmer	0548757849
70	Serwaah Mokuah		38	Farmer	
71	Faustina Opoku		37	Farmer	0242262780
72	Mary Nkrumah		55	Farmer	
73	Grace Mensah		30	Farmer	
74	Dede Faustina		30	Farmer	
75	Ama Nyame		70	Farmer	
76	Mary Agyeman		26	Farmer	

CENTRAL REGION

Contact person	Position	Contact number	Date
Assin Fosu District			
Mr. Kyei Samuel	FSD-District Manager	0248991337	25-03-2014
Mr. Nifaa Boyir Chrisantus	FSD-Assistant District Manager	0208988256	25-03-2014
Rose Adjei Okyere	FSD-Technical Officer/Ranger		25-03-2014
Mr. Jonathan McCarthy	MOFA-Extension Officer	0242211477	25-03-2014
Mr. Samuel Bawah	MOFA Crops Officer	0244946406	25-03-2014
Mr. Samuel Kwakye	Project Coordinator-Oasis Foundation International	0264057217	25-03-2014
Mr. Yaw Ansah	Chairperson-Artisanal Sawm Mill Association	0247101421	25-03-2014
Mallam Yahaya	Member/Truck Driver-Artisanal Sawm Mill Association	0540583786	25-03-2014
S. K. Boafo	Member- Artisanal Sawm Mill Association		25-03-2014
Cape Coast			
Mr. Asiedu Okrah	FSD-District Manager		
Mr. Daniel Adjei	FSD-Asst district manager		
Ms Eunice Ompon Peprah	FSD-District Range supervisor	0272847785	
Ms Christie Ofoe Tsatsu	FSD-District Ranger supervisor	0244590475	
Mr. Solomon Bagasel	FSD-District Customer service	0208291000	
Mr. Alex Oduro Barnie	FSD-Regional Manager		

ASHANTI REGION

Contact person	Position	Contact number	Date
FSD, RMSC, TIDD Kumasi			
Isaac Noble Eshun	Assistant FSD Regional Manager	0243556188	09-04-2014
Alexander Boamah Asare	Manager, Collaborative Forest Management, CRMD-RMSC	0208149194	10-04-2014 11-04-2014
Isaac Buckman	TIDD, Contract & Permit Officer	0242312630	10-04-2014
Antony Amamoo	TIDD, Regional Manager	0208142192	11-04-2014
FORIG, Kumasi			
Dr. Emmanuel Marfo	Senior Research Scientist- Policy & Governance	0244627274/ 0264627274	09-04-2014
Tropenbos International (TBI)-NGO			

Contact person	Position	Contact number	Date
Bernice Agyekwena	Communication Officer	0276478083	09-04-2014
K. S. Nketia	Project Director	0208150148	10-04-2014
OASL, Kumasi			
Nana Nsuase Poku Agyeman III	Regional Stool Lands Officer/ Otumfuo's Akyeamehene/ Chief Linguist	0244461057	09-04-2014
Land Commission, Kumasi			
Afia Abrefa	Senior Lands Officer-PVLMD	03220-26402	09-04-2014
Benjamin Nti	Lands Officer- PVLMD		
A. Karikari	Divisional Head-Land Registration Division, Ashanti Reg	02033221111	10-04-2014
Institute of Renewable Natural Resources - KNUST			
Dr. Emmanuel Acheampong	Senior Lecturer		10-04-2014
Form Ghana			
Marius Krijt	Operations Manager	0544441441	
Mariam Awuni	HR & Development Manager	0266374047	

BRONG AHAFO REGION

Contact person	Position	Contact number	Date
Goaso			
Joseph Bempah	FSD District Manager	0244804624	12-04-2014
Edward Nyamaah	Forester/ Range Supervisor	0243462897	12-04-2014
Kintampo			
Edward Opoku Antwi	FSD District Manager	0244043657	14-04-2014
Samuel Abisgo	DPO-Kintampo South D. A.	0208288577	14-04-2014
Sunyani			
Mariam Awuni	Form Ghana - HR & Development Manager	0266374047	15-04-2014
Isaac Kwaku Abebrese	Dean-School of Natural Resources- University of Energy & Natural Resources	0200863738/ 0277825094	15-04-2014
Dr (Mrs) Mercy A. A. Derkyi	Lecturer (NRM governance, policy and conflict management-Dept. of Forest Science, University of Energy & Natural Resources	0242186155	15-04-2014
Clement Amo Omari	FSD Assistant Regional Manager	0244549463	15-04-2014
Geoffrey Osafo-Osei	OASL-Regional Stool Lands Officer	0243536375	16-04-2014
Daniel Acheampong	OASL-Assistant Regional Officer	0246375788	16-04-2014
Nat Opoku Tandoh	OASL- Accountant	0209153153	16-04-2014
I.K.A Baffor Anane	Department of Community Development - Regional Director	0208162334	16-04-2014

Boadikrom settlement, Ayum Forest Reserve, Goaso Forest District

12-04-2014

No.	Name	Position/Designation	Occupation
1	Abdulai Alhassan	-	Farmer
2	Kobina Mensah	-	Farmer
3	Kwame Matthew	-	Farmer
4	Sika Sanvia	-	Farmer
5	Daniel Boadi	Odikro/ 0205253201	Farmer

Akwaboa No. 2 Community, Ayum Forest Reserve, Goaso Forest District

12-04-2014

No.	Name	Position/Designation	Age	Occupation
1	Yaw Amoah		58	Marketing clerk
2	Abu Samual		29	Farmer
3	Kwasi Basare		61	Farmer
4	Adams Fuseini		21	Student
5	Akwasi Addai		35	Farmer
6	Nii Ogye		50	Farmer
7	Isaac Tetteh		10	Student
8	Kwame Amagro		40	Farmer
9	Dogo Busanga		85	Farmer
10	Nana Beng		75	Farmer
11	Yakubu Adams	Chief's spokesman	40	Farmer
12	Emmanuel Tetteh		60	Farmer
13	Osei Tutu Kontre	Opinion Leader	54	Farmer (0203737205)
14	Nana Akwasi Badu	Chief		Farmer
15	Akwasi Agoda		38	Farmer
16	Mohammed Lamini		34	Farmer
17	S. B. Emini		57	Teacher
18	Osei Prince		24	Student
19	Boateng		20	Student
20	Ali Mohammed		23	Student
21	Kwame Owusu		14	Student
1	Charlotte Atawiah		22	Farmer
2	Alberta Adampaka		20	Farmer
3	Mary Forkua		24	Farmer
4	Adams Ramatu		20	Farmer/hairdresser
5	Mary Serwah		32	Farmer
6	Ruth Lamisi		37	Farmer/hairdresser
7	Afia Wusuwah		35	Farmer/hairdresser
8	Grace Mansah		52	Farmer/Trader
9	Akua Cecilia		38	Farmer
10	Comfort Asieduwaa		22	Farmer
11	Naomi Odartey		40	Farmer
12	Yaa Comfort		31	Farmer
13	Gladys Brago		32	Farmer
14	Maame Mali		50	Farmer
15	Rita Kondadu	Queen mother	44	Trader
16	Esther Amadu		23	Farmer
17	Abena Leyoma		30	Farmer
18	Janet Yaye		35	Farmer/Trader

Bosomoa Forest reserve, Kintampo Forest District

Nante Community –

14-04-2014

No.	Name	Position/Designation	Age	Occupation
1	Kofi Asante	-	40	Farmer
2	Kwaku Taapen		28	Farmer
3	Pena Daniel		45	Farmer
4	Idrisu Salemana		25	Farmer
5	Adamu Ibrahim		45	Farmer

6	Abukari Sudisu		25	Farmer
7	Yakubu Atteh		21	Farmer
8	Issaka Adam		20	Driver's mate
9	Alhaji Sofo Alhassan	Imam/CFC chairperson	57	Farmer
10	Atta Kofi	Roman Catechist	50	Farmer
11	Kofi Yamawule		30	Farmer
12	Abubakari Bibioboto		28	Driver
13	Yakubu Isahaku		35	Farmer
14	Abubakari Abdul Rahamadu		28	Farmer
15	Abdul Razak Yaya		20	Student
16	K. Asuman		31	Storekeeper/trader
17	Osei Prince		18	Mason Apprentice
18	Rashid Adoku		19	Carpentry apprentice
19	Kwabena Badu		46	Farmer
20	Ibrahim Nuhu		36	Machine operator
21	Gyan Kwame		32	Carpenter
22	Kwaku Gyamfi		25	Driver
23	Kojo Asante		29	Farmer
24	Kojo Damoah		31	Carpenter
25	Tassil Kwabena		27	Bar owner
26	Adu Amponsah	Youth leader	38	Farmer
27	Yaw Apaw		52	Farmer
28	Hon Cpl Giwaa		53	Farmer
1	Helena Anane		46	Trader/business woman
2	Naomi Pokua		45	Farmer
3	Akosua Kesewa		41	Farmer
4	Mary Jato		28	Dressmaker
5	Ramatu Mohammed		39	Waakye seller
6	Salamat Zawe		30	Dressmaker
7	Akua Agness		22	Trader
8	Saah Florence		22	Farmer
9	Georgina Akolowa		40	Yam seller
10	Zamabu Seidu		45	Trader
11	Margaret Adobea		48	Farmer
12	Comfort Dusie		34	Farmer
13	Asin Forsa		40	Farmer
14	Asanjia Doko		40	Farmer
15	Akua Kandusi		38	Farmer
16	Rahinatu Issaku		30	Farmer
17	Tada Benedicta		22	Student
18	Tukusama Rose		20	Dressmaker
19	Akose Churepo		33	Farmer
20	Komeol Akose		28	Farmer
21	Yaa Appiah		40	Farmer
22	Gyasi Emelia		40	Yam seller
23	Afia Angelina		30	Farmer
24	Afia Gyamea		48	Farmer/Trader/Queen Mother
25	Rafatu Muhammed		38	Trader

No.	Name	Age	Occupation
1	Potuo Bilaba	65	Farmer
2	Latif Alhassan	18	Farmer
3	Azizu Alhassan	20	Farmer
4	Yaw Sangi	20	Farmer
5	Mohammed	35	Farmer
6	Abduli	35	Farmer
7	Hadi Adama	20	Farmer
8	Yaw Bawuu	30	Farmer
9	Kari Wagi	23	Farmer
10	Dassan Isaac	20	Farmer
11	Yaawuloza Mohammed	20	Farmer
12	Felimon Nubolanaa	20	Farmer
13	Kwabena Dassan	30	Farmer
14	Bawuloma Nubosie	40	Farmer
15	Alahassan Iddrissu	25	Farmer
16	Ibrahim Iddrissu	30	Farmer
17	Zakari Osman	31	Farmer
18	Soribo Alfred	70	Farmer
19	Fusena Iddrissu	80	Farmer
20	Abdulai Tanko	40	Driver
21	Wuudo Ada	55	Farmer
22	Abduliman Ibrahim	56	Farmer
23	Isaah Tayii	20	Farmer
24	Yakubu Idrissu	32	Farmer
25	Abdulai Razak	28	Farmer
26	Amentus Karpieye	65	Farmer
27	Siedu Ibrahim	39	Farmer
28	Latif Alhassan	42	Farmer
29	Jato Dassan	45	Farmer
30	Alidu Karih	32	Farmer
31	Nbuli Dassan	40	Farmer
32	Imoro Mohammed	32	Teacher
33	Isahaku Amadu	25	Farmer
34	Tayii Isaaku	33	Farmer
35	Yamusa Awudu	53	Teacher
36	Bawa Jannaa	75	Farmer
1	Tikayi Bawa	60	Farmer
2	Lukaya Amidu	40	Farmer
3	Afukyetu Abdulai	40	Farmer
4	Naapo Yeyereku	35	Farmer
5	Alociyo Cynthia	41	Farmer
6	Polina Kando	34	Farmer
7	Faalinbon Akosua	42	Farmer
8	Moolesia Mathew	38	Farmer
9	Kambrenya Selina	39	Farmer
10	Ayesetu Yakubu	44	Farmer
11	Tanpo Daana	38	Farmer

12	Akosua Deri	46	Farmer
13	Afua Abdulai	38	Farmer
14	Latif Ibrahim	39	Farmer
15	Alishetu Mohammed	40	Farmer/NPP Women organiser
16	Ama Ankomah	22	Farmer
17	Janet Dorzea	23	Farmer
18	Sakinatu Alidu	30	Farmer
19	Abiba Mohammed	32	Farmer
20	Asana Mohammed	36	Farmer
21	Felicia Akua	45	Farmer
22	Faati Martha	42	Farmer
23	Afua Gyinapo	48	Farmer
24	Adwoa footi	35	Farmer
25	Akosua Juliet	36	Farmer
26	Grace Tan	37	Farmer
27	Akosua Nyobea	42	Farmer
28	Akua Dordaa	44	Farmer
29	Rahina Alhassan	39	Farmer
30	Mariama Tuahilu	50	Farmer
31	Ama Wajuli	60	Farmer
32	Philomena Soo	42	farmer/NDC women organiser

NORTHERN REGION

Zakaryili community

01-05-2014

No.	Name	Age/ description	Occupation
1	Alhassan Adu	Elderly	Farmer
2	Sherasu Alhassan	Youth	Farmer
3	Mohammed Abdul –Latif	Youth	Farmer
4	Alhassan Iddrisu	Youth	Farmer
5	Yakubu Iddrisu	Youth	Farmer
6	Alhassan Mohammed	Youth	Farmer
7	Fuseini Rashid	Youth	Farmer
8	Fuseini Abdulai	Youth	Farmer
9	Yakubu Wambei	Elderly	Farmer
10	Baba Alhassan	Elderly	Farmer
11	Abdul Rahiman	Elderly	Farmer
12	Yakubu Bawa	Elderly	Farmer
13	Alhassan Iddrisu	Elderly	Farmer
14	Sualisu Yusif	Youth	Farmer
15	Iddrisu Amin	Youth	Farmer
16	Iddrisu Abdulai	Youth	Farmer
1	Abiba Alhassan	Elderly	Farmer
2	Amina Fuseini	Youth	Farmer
3	Amina Yakubu	Elderly	Farmer
4	Fatimata Baba	Elderly	Farmer
5	Abiba Mohammed	Elderly	Farmer
6	Adisa Abdul-Rahman	Youth	Farmer
7	Abibatu Yusif	Youth	Farmer
8	Zulaiha Yakubu	Youth	Farmer
9	Sumayatu Yakubu	Youth	Farmer

10	Arishitu Alhassan	Youth	Farmer
11	Sanatu Alhassan	Youth	Farmer
12	Fatimata Latifu	Youth	Farmer
13	Mohammed Sahada	Youth	Farmer
14	Ayi Yakubu	Youth	Farmer
15	Rabi Sherazu	Youth	Farmer
16	Senatu Iddrisu	Youth	Farmer
17	Fuseina Yakubu	Youth	Farmer
18	Arahimatu Iddrisu	Youth	Farmer
19	Filila Alhassan	Youth	Farmer
20	Samatu Mohammed	Elderly	Farmer
21	Arishitu Baba	Youth	Farmer
22	Mariama Yakubu	Youth	Farmer
23	Abiba Sherazu	Elderly	Farmer
24	Abibata Alhassan	Youth	

Elderly: >45 years

Youth: >18 and <45 years

Moya community

01-05-2014

No.	Name	Age	Occupation
1	Abukari Danna (Chief)	75	Farmer
2	Issahaku Azuma	50	Farmer
3	Abukari Mohammed	40	Farmer
4	Yakubu Abukari	30	Farmer
5	Baba Fuseini	40	Farmer
6	Karim Nina	40	Farmer
7	Sulemanna Azindo	38	Farmer
8	Zakariya Fuseini	35	Farmer
9	Alhassan Abubakari	50	Farmer
10	Ibrahim Mamudu	40	Farmer
11	Alhassan Yusif	42	Farmer
12	Alhassan Azindo	20	Farmer
13	Iddrisu Azima	40	Farmer
14	Abubakari Mansuru	20	Farmer
15	Abdulai Fuseini	30	Farmer
16	Shaibu Nina	43	Farmer
17	Sualisu Nina	45	Farmer
18	Amadu Majid	35	Farmer
19	Zakari Abukari	40	Farmer
20	Alhassan Bawa	45	Farmer
21	Abubakari Shaibu	70	Farmer
1	Sanatu Azuma	50	Farmer
2	Alimatu Zakariya	40	Farmer
3	Awabu Mahamatu	35	Farmer
4	Mariama Baba	29	Farmer
5	Zinabu Alhassan	30	Farmer
6	Mariama Alhassan	60	Farmer
7	Sakina Zakari	23	Farmer
8	Filila Alhassan	35	Farmer
9	Rahimatu Ibrahim	35	Farmer
10	Sulaya Iddrisu	28	Farmer

11	Azara Damba	60	Farmer
12	Mamunatu Abdul-Nasiri	18	Farmer
13	Mariam Majeed	32	Farmer
14	Sikina Shaibu	50	Farmer
15	Fati Alhassan	52	Farmer
16	Awabu Sulemana	18	Farmer
17	Abana Rashid	23	Farmer
18	Sanatu Azima	53	Farmer
19	Nima Alhassan	18	Farmer
20	Ashitu Abubakari	50	Farmer
21	Anatu Karim	38	Farmer
22	Fatima Sulemana	28	Farmer
23	Martha Bawa	60	Farmer
24	Fatimata Adam	40	Trader/Farmer
25	Adamu Moro	34	Trader
26	Fatimatu Osman	20	Farmer
27	Fati Fuseini	30	Farmer
28	Awabu Yussif	35	Farmer
29	Adamu Issah	60	Farmer
30	Hawa Fuseini	60	Farmer
31	Sanatu Yahaya	62	Farmer
32	Asana Abdulai	25	Farmer
33	Fushina Abukari	38	Trader
34	Larbi Issahaku	29	Trader

**Kenikeni Forest Reserve and Mole National Park
Grupe Community**

02-05-2014

No.	Name	Age	Occupation
1	Dari Naatida	30	Farmer
2	Kwaku Bayowo	30	Farmer
3	Awule Donkoyiri	52	Farmer
4	Dare Tan	28	Farmer
5	Simon Bugla	53	Farmer
6	Lamin Abdulai	20	Farmer
7	Kipo Simole	23	Farmer
8	Disuri Berviley	31	Farmer
9	Attah Zinkoni	50	Farmer
10	Pentu Aliasu	20	Farmer
11	Kular Yirikubaye	45	Farmer
12	Kipo Musah	23	Student/Farmer
13	Denyi Beyinar	30	Farmer
14	Kwame Beyinor	25	Farmer
15	Tinwah Dasaah	35	Farmer
16	Gbiale Gbentuota	30	Farmer
17	Yanyeke Yawkra	55	Farmer
18	Kpibari Vinn	45	Farmer
19	Dramani Salisu	21	Student
20	Dramani Saaka	50	Farmer
21	Sunwale Kpankpori	45	Farmer
22	Adams Gbolosu	27	Farmer
	<i>Women</i>		

1	Jemi Aness	20	Farmer
2	Hawa Seidu	45	Farmer
3	Kpandzana Duntze	45	Farmer
4	Magazia Zinatuna	50	Farmer
5	Bamba Barah	20	Farmer
6	Wiagu Diana	45	Farmer
7	Alberta Tinnah	40	Farmer
8	Attah Fiah	29	Farmer
9	Yaa Jang	32	Farmer
10	Beyiwor	45	Farmer
11	Akua Dari	30	Farmer
12	Kwame Tanpogo	35	Farmer
13	Kulpor Anawa	35	Farmer
14	Attah Kipo	45	Farmer
15	Zinatornor Bawizia	50	Farmer
16	Kipo Abutu	40	Farmer
17	Yao Akosua	30	Farmer
18	Abiba Seidu	28	Farmer
19	Kulpor Ados	30	Farmer
20	Tampor Porlina	30	Farmer
21	Asata Mumuni	30	Farmer
22	Afisah Dari	35	Farmer
23	Adwoa Zore	45	Farmer
24	Fati Dramani	40	Farmer
25	Vorsana Dramani	25	Farmer

Kenikeni Forest Reserve and Mole National Park

Nasoyiri Community

02-05-2014

No.	Name	Age	Occupation
1	Nasoyiri Wura	-	Farmer
2	Sey Nalotey	-	Farmer
3	Sansan Bidintey	50	Farmer
4	Bisen Kontome	35	Farmer
5	Ollo Sonyitey	43	Farmer
6	Nyolina Taba	30	Farmer
7	Bitoyiri	22	Farmer
8	Andrew Selli	23	Farmer
9	Dokobo Ditey	25	Farmer
10	Jacob Bale	35	Farmer
11	Bashiru Fornule	40	Farmer
12	Fotey Lifatey	45	Farmer
13	Soletay Sansa	50	Farmer
14	Dale Kpoku	30	Farmer
15	Bitoyiri	56	Farmer
16	Sekentey	60	Farmer
17	Adam Natorma	46	Farmer
18	Tensare Selle	58	Farmer
19	Banala Kani	48	Student
20	Botwo Sontey	47	Farmer
21	Kyilentey Chichutey	56	Farmer
22	Dare Bola	54	Farmer

23	Maalyir	23	Farmer
24	Glikoli Gariba	54	Farmer
25	Yasotey	45	Farmer
	Women		
1	Bugula	43	Farmer
2	Nowenuma	35	Farmer
3	Sawala	58	Farmer
4	Juliana Akosua	20	Farmer
5	Gbollo	35	Farmer
6	Parreh	33	Farmer
7	Zanabu	34	Farmer
8	Phillipa Amoh	21	Farmer
9	Joana Turema	19	Farmer
10	Yaa Brafı	42	Trader
11	Sahaana	51	Farmer
12	Nayorli Limah	32	Farmer
13	Mabel Dawo	23	Farmer
14	Yaatel Dawo	30	Farmer
15	Yiri Binana	48	Farmer
16	Yaa Nebina	45	Farmer
17	Grace Temale	35	Farmer
18	Rita Ayulo	41	Farmer
19	Victoria Alamina	42	Farmer
20	Bena Yare	40	Farmer
21	Wamuni	33	Farmer
22	Dusama	35	Farmer
23	Sudiri	40	Farmer
24	Rophina	30	Farmer
25	Sentey Chabb	31	Farmer
26	Hanna Mopu	42	Farmer
27	Yiley	37	Farmer
28	Adams Gyikye	35	Farmer
29	Adams Nafisa	32	Farmer
30	Janet Solomey	40	Farmer
31	Manno Dare	55	Farmer
32	Nkaayene Sankuma	35	Farmer
33	Adwoa Tireh	35	Farmer
34	Sofaa Yiri	22	Farmer
35	Comfort Tire	30	Farmer
36	Maa Adwoa	37	Farmer
37	Afua Mumuni	27	Farmer
38	Yaa Angelina	22	Farmer

Contact person	Position	Contact number	Date
FSD, Tamale, Bole			
Ebenezer Djabletey	Regional FSD Manager	0244639643	30-04-2014 / 01-05-2014
Emmanuel Okrah	Tamale District FSD Manager	0243716352	30-04-2014
Nii Kwei	Tamale Assist. Dist. Manager	0200122333	30-04-2014 / 01-05-2014
Paul Hinneh	Bole Assist Dist. FSD Manager	0244934324	02-05-2014

Contact person	Position	Contact number	Date
Joseph Akuoko	Bole-TO/Range Supervisor	0242108943	02-05-2014
Saviour Attu	Bole – TO/Range supervisor	0243141630	02-05-2014
Lands Commission, Tamale			
Samuel Anini	Head- LVD	0244618902	05-05-2014
Osei Owusu	Head- PVLMD	0244633902	06-05-2014
Yaw Aboagye	Regional Lands Officer/ Head-Survey & Mapping	0244798808	06-05-2014
Tree Aid Ghana – NGO			
Andrew Dokurugu	Country Director	0208882226 andrew.dokurugu@treeaid.org.uk	05-05-2014
OASL, Tamale			
Franklin Oppong Obiri	Regional Stool Lands Officer	0207339887/ 0244496668	05-05-2014
EPA, Tamale			
Musa Adam Jafaru	Programme Officer	0244445831/ 0501301601	05-05-2014
Jimah Louly	Programme Officer	0543315665/ 0501301600	05-05-2014
Abu Iddrisu	Regional Director		05-05-2014
GNFS, Tamale			
Douglas Koyiri	Regional Fire Commander	0208284332	05-05-2014
Department of Community Development			
Williams Alagma	Regional Director	0244845045/0206277359 alagwillie@yahoo.com	06-05-2014
MOFA, Tamale			
William Boakye Acheampong	Regional Director	0244216918	06-05-2014
RCC, Tamale			
Alhassan Issehaku	RCD	0208236483	06-05-2014
Care International-NGO			
Francis Avura	Local Governance & Advocacy Officer	0208137503	07-05-2014
Nuhu Suleimana	Livelihood and Disaster Risk Reduction Officer	0248406305	07-05-2014
Association of Church-Based Development NGOs (Acdep)			
Pealore Zachary	ECCRING Project Manager	0206151928/ razackpealore@acdep.org	07-05-2014
Michael Pervarah	Project Manager	0244777442	07-05-2014

UPPER EAST REGION

Contact person	Position	Contact number	Date
FSD - Bolga, Navrongo			
James K. Ware	Regional FSD Manager	0207142090	07-05-2014
Robert Deri	Bolga District FSD Manager	0208158736	07-05-2014
Kobina Baiden	Bolga Assist. Dist. Manager	0208316214	07-05-2014
Awuah Oteng	Navrongo Dist. FSD Manager	0243373059	07-05-2014
Agbontor Raymond	Navrongo ADM	0209161881	07-05-2014
Wildlife Division			
John Naada Majam	Regional Wildlife Div. Manager	0244167419	08-05-2014

Contact person	Position	Contact number	Date
Lands Commission, Bolga			
Alhassan B. Zakariah	Head- LVD	0209123550	08-05-2014
Eric Mwim	Head- PVLMD	0202857941	08-05-2014
Seidu Zakari Abu	Ag. Regional Lands Officer/ Head-Survey & Mapping	0209656296	08-05-2014
Office of the Administrator of Stool Lands (OASL), Bolga			
Larri John Kwame	Regional Stool Lands Officer	0246361631	08-05-2014
EPA, Bolga			
Hamidu Abdulai	Assist. Programme Officer	0268861474	08-05-2014
Agbenyeka Godfred		0249990930	08-05-2014
Benedict Agamah		0242342376	08-05-2014
Freda Amizia		0203217602	08-05-2014
GNFS, Bolga			
Albert A. Ayamga	Regional Fire Commander	0208240499/0242569152	08-05-2014
Albert Adongo Ayamga	Rural Fire Department- Officer	0208384171/0245914619	08-05-2014
FORIG, Bolga			
Stephen Akpalu	Research Scientist	0207392105	09-05-2014
Gloria Adeyiga	Research Scientist	0207327391	09-05-2014
MOFA, Bolga			
Zimri Alhassan	Assist. Regional Ext. Officer	0240399482	09-05-2014
Ben Issah	Reg. Extension Officer	0244838789	09-05-2014
WRC- Volta Basin, Bolga			
Aaron Aduna	Volta Basin Officer	0242074137/0208234442 aaronaduna@yahoo.com aaronaduna@gmail.com	09-05-2014
NADMO, Bolga			
Paul Wooma	Deputy Chief Disaster Control Officer	0206381927	09-05-2014
RCC, Bolga			
Paul K. Abdul Korah	RCD/Chief Director	0244632151	09-05-2014