UNITED NATIONS FORUM ON FORESTS

FINAL REPORT

DEVELOPMENT OF A SYSTEM FOR MONITORING PROGRESS TOWARD
SUSTAINABLE FOREST MANAGEMENT

AN INVENTORY OF EXISTING FOREST-RELATED DATA AND MAPPING GAPS ON
NATIONAL REPORTING ON THE UNITED NATIONS STRATEGIC PLAN FOR FORESTS
2017 - 2030

DAVID GUBA KPELLE

COORDINATOR, UN FOREST INSTRUMENT IN GHANA

JANUARY 2018

ACKNOWLEDGEMENTS

Table of Contents

List of Tables

List of Figures

EXECUTIVE SUMMARY

The United Nations Forum of Forest (UNFF), was established since 2004 by the General Assembly of the United Nations in New York. Since then it has coordinated global efforts on monitoring assessment and reporting on sustainable forest management of member states of the United Nations, based on request for Voluntary National Reports according to formats recommended by the UNFF General Assembly.

In 2015, the United Nations General Assembly adopted the seventeen (17) Sustainable Development Goals and its associated Targets to replace the Millennium Development Goals. It to promote harmonization and General Assembly to develop and adopt strategic plans to contribute towards their achievement. Accordingly, the United Nations Strategic Plan on Forests (UNSPF) 2017 – 2030, was developed by the United Nations Forum on Forest, through a participatory process, as the main framework to contribute towards the achievement of the Sustainable Development Goals. The Strategic Plan was adopted in January 2017 by the General Assembly of the UNFF in New York. Central to the Strategic Plan are Six (6) Global Forest Goals and associated twenty-six (26) Targets, the United Nations Forest Instrument (UNFI) and the Voluntary National Contributions (VNCs).

In order to reduce the reporting burden on all forest-related United Nations Conventions, particularly the Rio Conventions, the Collaborative Partnership on Forests under the leadership of the United Nations Food and Agriculture Organization (FAO) developed a Core Set of Goals and Targets, which sought to harmonize all the Goals, and Targets of the respective UN Conventions.

The adoption of the UNSPF necessitated the development of a Proposed Voluntary National Reporting Format on monitoring progress towards the achievement of the Six Global Forest Goals and associated Targets, the UN Forest Instrument and the Voluntary National Contributions of the UN Strategic Plan on Forest 2017 - 2030. At the 12 Session of the UNFF General Assembly, Member States recommended the pilot-testing of the new Proposed Reporting Format. In addition, the Forum also selected a number of developing countries including Ghana to build their capacity in the identification of the appropriate data sources from the relevant organizations to meet the reporting requirement of the new National Voluntary Reporting Format.

As part of the efforts on capacity building, a Gap Analysis, was carried out on all the key national forest programmes for Ghana, to assess the availability of the major data sources in relation to the reporting requirement for the Six (6) Global Forest Goals and twenty-six (26) Targets of the new Voluntary National Reporting Format. The areas where the relevant data were not available within the national forest programmes were identified as gaps in the data requirement for reporting on progress towards the achievement of the Goals and Targets. The major sources of financial inflow for sustainable forest management within the country were also assessed. This report is the outcome of the Inventory of Information sources and Gap Analysis and includes recommendations as to how the identified gaps in the data sources within the national forest programmes, could be addressed.

The outcome of the Gap Analysis was reported to workshops of a limited Group of 20 Experts of the Forestry Commission on 11 January 2018 and a wider Group of 30 key stakeholders of the forestry sector, from 26 to 27 February, respectively. They included representatives from civil society and forest-related industry players. The outcome of the two respective workshops are in separate reports submitted to the Secretariat of the United Nations Forum on Forests.

CHAPTER ONE

1.0 Introduction

The past two decades have witnessed intense global effort in developing consensus on common approaches for reporting on sustainable management of the world's forest resources. Since the inception of the United Nations Forum on Forests (UNFF), it has promoted the submission of voluntary national reporting by member states. The Intergovernmental Panel on Forests as per UN Res 4/3 initially focused national reporting on progress towards implementing the proposals for action in 2004. This has been a guide for many countries to develop and implement national level programs for monitoring, assessing and reporting on progress towards sustainable forest management. The criteria and indicators for such country programmes, were drawn from various collaborative regional processes including ITTO, Montreal Process, Forest Europe, Taraputo process, Low-forest cover countries and United Nations Food and Agriculture Organization (UNFAO) (UNFF, 2016).

Sustainable forest management is defined by UN General Assembly as: *a dynamic and evolving concept that aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations (UN A/RES/62/98).* It was noted that though sustainable forest management varies over time between countries the concept should always address wide range of values including economic, social and environmental values while taking into consideration the intergenerational equity. Member states have also developed consensus at the global level on seven thematic elements of sustainable forest management: *extent of forest resources, forest biological diversity, forest health and vitality, productive functions of forest, protective functions of forest resources, socioeconomic functions of forest resources, legal policy and institutional framework* (UN A/RES/62/98, 2008).

However, it was not until 2007 that the UN General Assembly agreed on a global framework for the United Nations Forest Instrument as per UN A/RES/62/98, 2008. This embraced the progress made in attainment of the Global Objectives on Forests and the twenty-five (25) principles and measures of the Instrument with emphasis on enhancing political will and international cooperation towards sustainable forest management at the global level.

From 2009 to 2011, Ghana accepted and carried out a proposal to pilot-test the implementation of the UN Forest Instrument and to develop the implementation approach and a common monitoring and evaluation framework for adoption and use by other member states. However, with the adoption of the United Nations Sustainable Development Goals, which also has forest related targets, particularly Target 15.2, there has been a common consensus towards the development of a simple reporting format on sustainable forest management, which also serves the reporting needs of United Nations Forum on Forests (UNFF), Convention on Biological Diversity (CBD), United Nations Convention on Desertification (UNCD) and United Nations Framework Convention on Climate Change (UNFCC) (UNFF 2016).

Accordingly, the FAO led Collaborative Partnership on Forests, played a key role in identifying targets that synchronize the targets of the Sustainable Development Goals (SDGs), Aichi Biodiversity Targets and the other forest related international Conventions and arrangements for

the attention of the UN General Assembly for adoption. Thereafter, the UN General Assembly in January 2017 approved and adopted the United Nations Strategic Plan on Forests 2017- 2030 and the Forums, Quadrennial Programme of Work (4POW) 2017 – 2020 centered around six (6) Global Forest Goals and twenty-six (26) associated targets as well as the UN Forest Instrument, as per UN RES/2015/33.

A review of previous reports to the UNFF indicated that most countries have good biophysical common methodologies for monitoring and gathering information on the benefits from forests. However, quantifiable socio-economic data is often lacking, particularly information on the livelihood of forest dependent people and their respective financial flows. In view of this gap, the second Global Forest Goal of the UNSPF, *"Enhance forest-based economic, social and environmental benefits, including by improving livelihoods of forest dependent people",* is aimed at encouraging reporting countries to make efforts to generate the appropriate socio-economic data to reflect the contribution of the forests to national development and better appreciation by decision-makers.

The 12th Session of the UN Forum on Forests recommended further revision of the proposed new format for voluntary national reporting to the Forum on implementation of the UNSPF, including the UN Forest Instrument and Voluntary National Contributions, based on consultation with stakeholders in selected member countries. This was to enable the key stakeholders familiarize themselves with the needs of the new national reporting format and contribute to enhance clarity on the targets and the necessary indicators.

It is expected that this would contribute to the development of a common methodology for monitoring and gathering information for effective reporting, particularly relevant socio-economic information on the benefits from forests, the respective financial flows and contribution to national development. Hence, the need to pilot-test the reporting format and refine the targets and indictors to facilitate the development of an efficient system for monitoring progress towards sustainable forest management.

1.1   The Task

The Task of this assignment is to carry out a step-by-step approach to developing a comprehensive and efficient system of monitoring progress toward sustainable forest management. This will involve conducting an inventory of the existing national forest related data, mapping the existing data against the reporting format for the Global Forest Goals and associated targets and the UN Forest Instrument in order to identify data gaps and make appropriate recommendations with regard to how to address them.

Special attention is focused on the socio-economic aspects such as the contribution of forest products and services to livelihood, food security and poverty reduction and financial flows for sustainable forest management in Ghana.

1.2 Expected Outcomes

The successful accomplishment of the task will contribute to:

a. Enhanced capacity of the forestry sector in Ghana to develop and test monitoring frameworks to track progress towards forest-related sustainable development goals, the Global Forest Goals and financial flows that impact forests

b. Increased capacity of the forestry sector in Ghana to use forest-monitoring data for evidence based policy-making, reporting and analysis of the contribution of forest goods and services to society and the economy of Ghana.

1.3 The Methodology

Reviews of Relevant Policies and Programmes: In order to carry out the assignment, the major policies and programmes of the forestry sector with a bearing on sustainable forest management were reviewed. This included Ghana's National Development Agenda (Ghana Shared Growth and Development Agenda), Ghana's Forest and Wildlife Policy (2012), National Wildfire Management Policy and the Ghana Forestry Development Master Plan (2016-2036). It also included the Ghana REDD+ Strategy (2016), the Forest Investment Programme (FIP) and the Ghana Forest Plantation Strategy: 2016 -2040. The analysis included identification of sources of financial inflows to the public, civil society and the private sector organizations.

Questionnaires: In order to enhance the identification of data gaps, questionnaire, developed in relation to the six (6) Global Goals on Forests were administered to key stakeholders in the forestry sector to establish data availability and the form in which they existed (quantitative or qualitative). See Appendix I.

Personal interviews: were granted to identifiable database managers in order to better understanding the information available in relation to sustainable forest management.

Data Analysis: As part of the data analysis, the six (6) Global Forest Goals and the associated twenty-six (26) targets, were review and aligned with the activities and selected indicators of the current national programmes and activities in the forestry sector related to sustainable forest management. This included indicators on measuring performance in the national development agenda, national forest programmes and other forest-related programmes contributing to sustainable forest management. The administered questionnaires were also reviewed to identify availability of information or otherwise in relation to reporting on the Global Forest Goals and targets, the UN Forest Instrument and the Voluntary National Contributions (VNC). Where there was no data or information available in relation to the relevant Global Forest Goals and targets, it was noted as a gap that needed attention with regard to what needs to be done to address the issue.

To ensure input by stakeholders, two workshops for forest-related experts were organized as follows: (a) 11th January, 2018 for staff of the Forestry Commission involved in data sources (b) 27 – 28 February, 2018: wider forest-related experts in research, private industry, civil society, international organizations such as IUCN, as well as the Forestry Commission.

1.4   Structure of the Report

This report outlines the approaches used in the assignment, the programmes reviewed, the gaps identified and the necessary recommendations to address them. It comprises four (chapters as follows:

Chapter 1: *General Introduction and Background*. This chapter provides a general background to the assignment. Specifically it provides information on the rationale of the assignment and the methodology used to carry out the assignment

Chapter 2: *Overview of Ghana's Forestry Sector*: In this chapter, the background of the forestry sector is provided, outlining some of the key initiatives

Chapter 3: *Review of Current Relevant Global and National Strategies, Policies and Programmes and Interventions related to sustainable forest management*: This chapter presents existing secondary information on the key policies and programmes and projects related to sustainable forest management and identified the existing gaps related to the Targets of the Global Forest Goals.

Chapter 4: *Assessment of the Identified Gaps*. The existing policies and programmes were assessed to identify appropriate data gaps related to the information needs of the proposed reporting format on progress towards sustainable forest in Ghana.

Chapter 5. *General Conclusions and Recommendations*: The general conclusion and recommendations in relation to how to address the gaps and improve upon the information needs that will also contribute to a monitoring and reporting system, are provided here.

CHAPTER TWO

OVERVIEW OF THE FORESTRY SECTOR OF GHANA

2.0 Background

Ghana covers a land area of 239,460m2. It is located between latitude 11.5^0N and 4.5^0S and longitude 3.5^0W and 1.3^0E. There are three main ecological zones: High-forest, Transition and Savannah. The High-forest of 8.2m ha is limited to the southwest portion of the country. This consists of both rainforest and deciduous forests and occupies a third of the land area, where rainfall may exceed 2000 mm. The Transition Zone of 1.1m ha of semi-deciduous forest in the middle-belt, is characterized by vegetation of both High Forest and Savannah Zones, with rainfall between 1,200mm and 1800mm. The Savannah Zone of about 15.7m ha occupies the northern part of the country and stretches further south into the east coast consisting of Coastal savannah, Guinea savannah and Sudan savannah, with rainfall between 760mm and 1200mm. See Figure 1 below.

It is estimated that Ghana lost 33.7% or 2.5m ha of forest cover between 1990 and 2010, at an average annual rate of change of 2% (135,000ha/yr.) (FC, 2012). Ghana's forest resources continue to face pressure of deforestation and forest degradation with the principal drivers identified as unsustainable logging and fuelwood harvesting, agricultural expansion, free ranging pastoralists, permanent cultivation and shifting. It also include traditional slash and burn practices, wildfires and urban infrastructure development, such as human settlements, roads, utilities, schools etc.

Since the World Conference on Sustainable Development in 1992, the commitment of Ghana to ensuring sustainable development initiatives has been on the increase. Forests have been recognized as having enormous potential to support poverty reduction and national development. The Rio+ 20 United Nations Conference on Sustainable Development, which re-affirmed the support for green economy policies to ensure sustainable development and poverty eradication, further enhanced this.

As part of the commitment to the outcome of the global Sustainable Development Agenda, Ghana prepared a National Development Agenda, which provided the over-arching framework for sustainable development. Beginning with Vision 2020, Ghana Poverty Reduction Scheme I, II, currently Ghana Shared Growth, and Development Agenda (GSGDA), with all of them having implications on forestry development.

In 2015, the Millennium Development Goals (MDGs) expired and as a replacement, the seventeen (17) Sustainable Development Goals and associated 167 targets were adopted. The role of forest, was duly recognized with Goal 15 entreating member countries to take steps to conserve and restore the use of terrestrial ecosystems, combat desertification, and halt and reverse land degradation and biodiversity loss. Target 2 of Goal 15 advocates for sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

VEGETATION ZONES OF GHANA
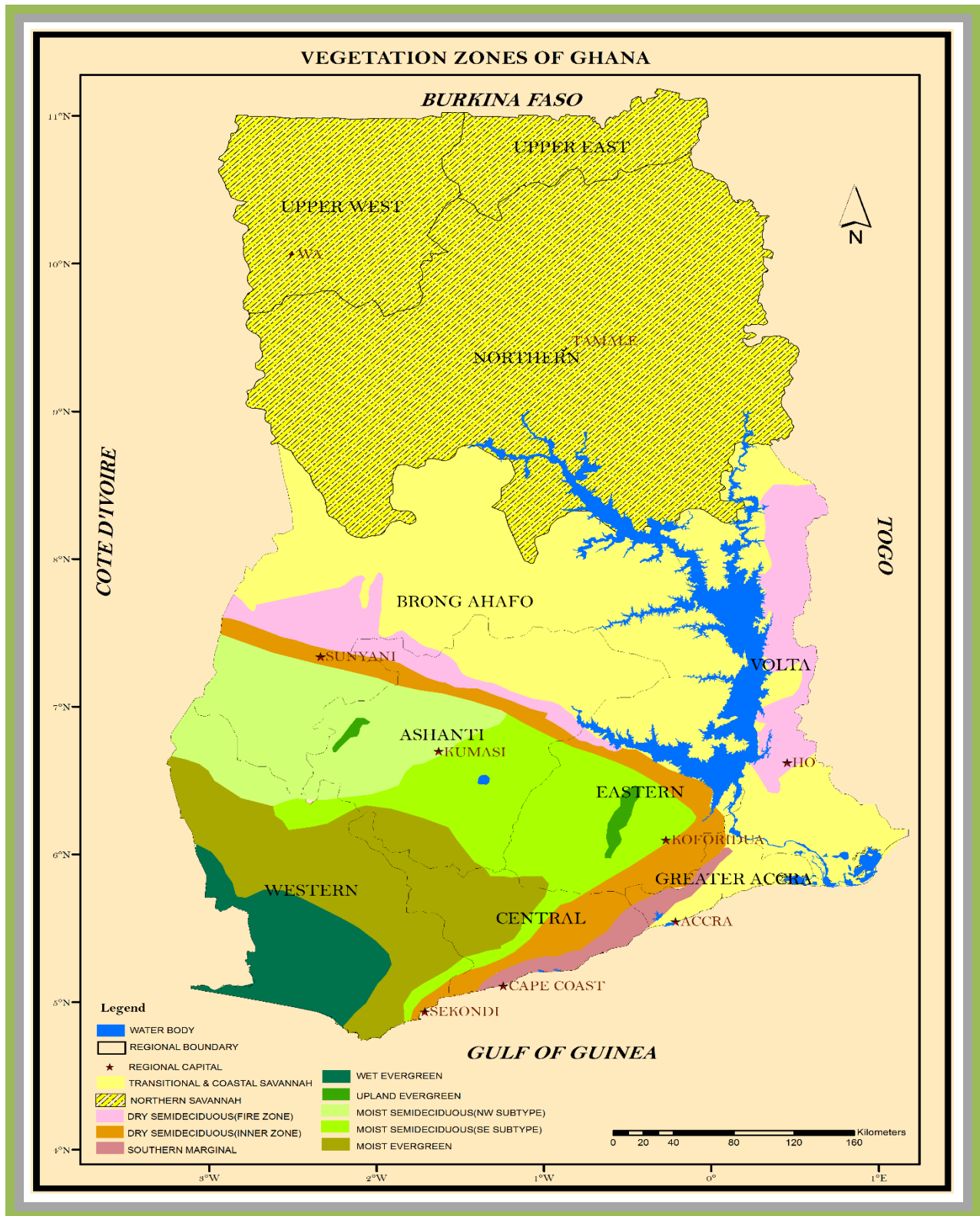
Figure 1 : Major Vegetation zones of Ghana

2.1 Major Management Interventions in the Forestry Sector

Currently there are 282-gazetted forest and wildlife reserves covering 22,754km^2 of which 216 (covering 1.6m ha) are in the high forest zone and 66 are located in the savannah zone. Both forest and wildlife reserves cover about 16.2% of the total land surface area of the country. See Figure 2 below.
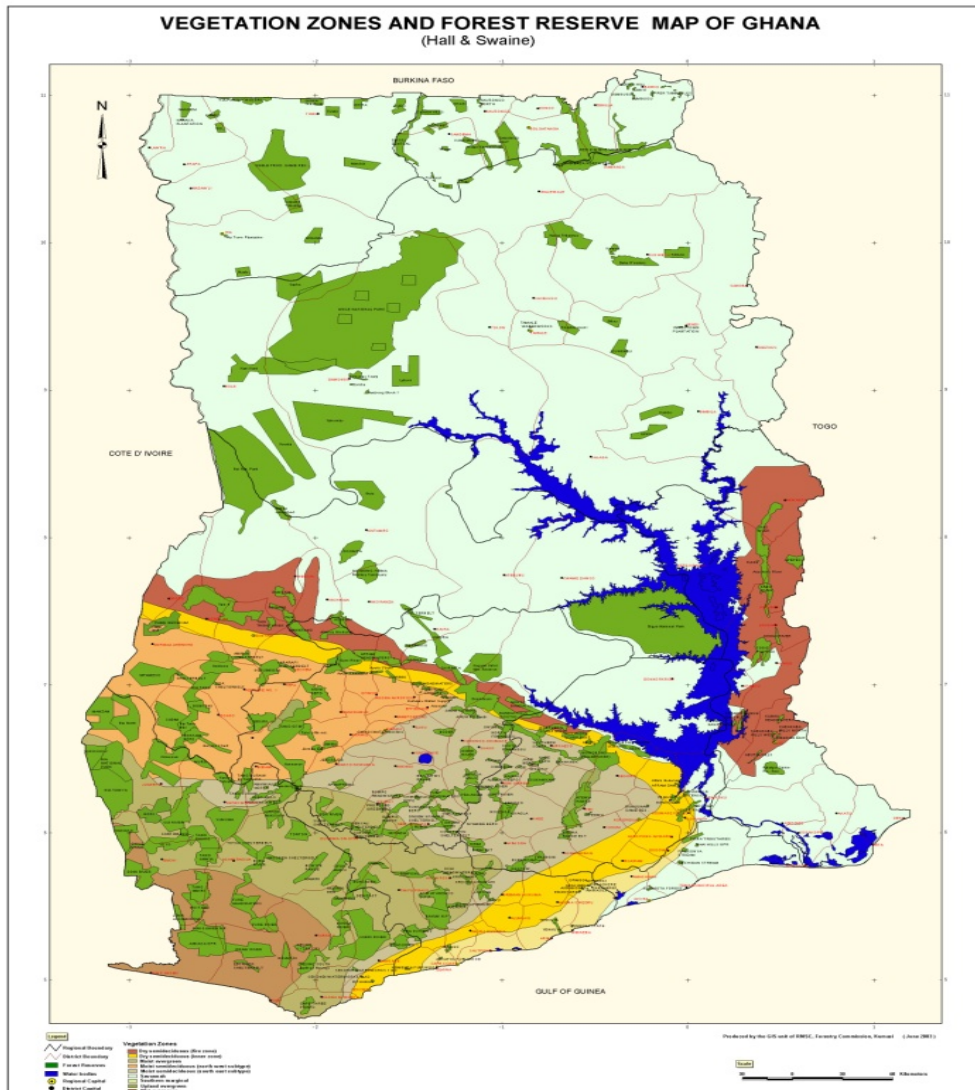
Figure 2: Map of Forest and Wildlife Reserves and Major Vegetation of Ghana

The forest reserves are further categorized into production, protection, conversion and research areas in accordance with the country's commitment towards ensuring environmental sustainability and optimum socio-economic benefits to the people of Ghana and the global community. Timber is sourced from the production areas of the reserved forests and off-reserve, while areas of important biological resources and of conservation significance are put under

9

protection. Timber production areas constitute about 47% of the forest reserves in Ghana (FC, 2012).

Most of the off-reserve areas have little closed canopy forest since they have been largely converted to agricultural land-use and urban infrastructure development.

The following are some of the major policy and management interventions in the forestry sector that have a bearing on sustainable forest management:

National Forest Programme: The first main instrument for planning and development of the forest sector activities was the 1996 Ghana Forestry Development Master Plan (MLNR, 1996). This was implemented from 1996 to 2012, focused on five (5) focal areas:

    a. Management and development of Ghana's permanent forest and wildlife resources
    b. Promotion of viable and efficient forest-based industries, particularly in secondary and tertiary processing;
    c. Promotion of public awareness and involvement of rural people in forestry and wildlife conservation;
    d. Promotion of research-based and technology-led forestry and wildlife management, utilization and development;
    e. Development of effective capacity and capability at national, regional and district levels for sustainable forest and wildlife management.

The implementation of the 1996 Master Plan introduced a number of initiatives that improved and developed the resource base with good governance, transparency, equity and more appreciation of the sector in poverty reduction. It resulted in a review which enhanced the policy and regulatory frameworks as well as institutional reforms for the sector. One of the outcomes was the creation of the Forestry Commission and several legislative enactments to reflect the reforms. It also enhanced community involvement and the development of a National Forest Protection Strategy. It however could not effectively address the underlying causes of deforestation and forest degradation in Ghana, particularly the illegal logging activities, wildfires and unsustainable fuelwood production and obsolete timber industry that harvested wood beyond the Annual Allowable Cut (AC).

This necessitated the development of the new Forest and Wildlife Policy in 2012 (MLNR, 2012) and subsequently, the new Ghana Forestry Development Master Plan 2016 -2036 (MLNR, 2016). The Policy focuses on:

- To manage and enhancing the ecological integrity of the ecosystems,
- To promote the rehabilitation and restoration of degraded landscapes and sustain the supply of raw materials for domestic and industrial consumption and environmental protection
- To promote the development of viable forest and wildlife industries and livelihoods.
- To promote transparent governance, equity benefit sharing and stakeholder participation in forest and wildlife resource management; and

- To promote training, research and technology development to support sustainable forest management.

The 2012 Policy Objectives were transformed into the Development Objectives of the current Ghana Forestry Master Development Plan 2016 -2036, details are further provided in Chapter Three below.

National Biodiversity Strategy and Action Plan: The Strategy seeks to promote sustainable use of the biological resources, forest and wildlife reserves as well as other traditional conservation areas. The need to integrate biodiversity issues into national development planning has been prioritized and the establishment of National Biodiversity Commission recommended.

National Land Policy: The Policy provides the framework for addressing land acquisition and management to ensure equity in land allocation to maintain a stable environment for sustainable socio-economic development. It aims to promote the conservation of ecosystems, maintenance of scenic beauty of landscapes and collaborative management with communities.

National Fire Policy: In 2006 the Ministry of Lands and Natural Resources developed a National Fire Policy. The Policy Objectives focuses on effective and efficient prevention and control of wildfires, encouraging the adoption of alternative resources management systems to minimize incidence of wildfires and the development of structures and systems to ensure stakeholder participation wildfire management. It also seeks to promote research in wildfire management.

National Climate-Smart Agriculture and Food Security Action Plan: Under the Food and Agriculture Sector Development Policy (FASDEP), Ghana developed an action plan focusing on the need for sustainable use of the natural resources such as land, forests, water and genetic resources. It emphasizes on food security, improved incomes, enhancing competiveness at both local and international levels, sustainable management of land and environmental resources, use of science and technology as well as improved institutional coordination.

Natural Resources and Environmental Governance Programme (NREG): The programme was implemented through the collaboration of the various Development Partners as a sector budget support for the government institutions in the environment, minerals and forestry sectors. It was aimed at

- Ensuring predictable and sustainable financial for the forest and wildlife and effective law enforcement
- Improve mining sector management, revenue and transparency
- Address the social issues in the mining and forestry sectors;
- Support the implementation of strategic environmental assessment;
- Development of a climate change strategy

Voluntary Partnership Agreement: The European Union and the Government of Ghana adopted a trade agreement on Forest Law Enforcement, Governance and Trade (FLEGT) focused on regulating timber products. The primary aim is to provide legal framework for ensuring that all

imports of wood products from Ghana into the European market, are sourced from sustainably managed forests. Ghana however extended the agreement to cover the trade in the domestic market so as to promote sourcing of timber from legal sources, thus contributing to sustainable management of the forests.

Cocoa Farming and Biodiversity Project: The project was implemented to promote the integration of systems that enhance socio-economic and ecologically sound farming best practices, increase tree cover and reduce the impact on the environmental resources. It was focused on the conservation of ecosystems and increase in the income of the farmers through increased productivity. The initiative is supported by major private sector players in the cocoa industry, non-governmental organizations in collaboration with the Ghana Cocoa Research Institute.

Ghana's REDD+ Strategy: Ghana REDD+ Programme is divided into four (4) main phases: Readiness Organization and Consultation, REDD+ Strategy Preparation, Setting up the Emission Reference Level (ERL) and Development of a Monitoring System for deforestation and forest degradations and the implementation of safeguards. While all the first three (3) phases have been completed, the Programme is now in the process of developing the Monitoring System.

Ghana identified the following as the principal drivers of deforestation and forest degradations: agricultural expansion, logging, fuelwood/charcoal harvesting, wildfires and infrastructure development. It also include mining and sand-winning. To mitigate the impact of climate change, Ghana opted for the development and implementation of the Ghana's REDD+ Programme, aimed at Reducing Emissions from Deforestation and Forest Degradation and Deforestation. The programme is focused on the following five areas: Reducing emissions from deforestation; Reducing emissions from degradation; Conservation of forest carbon stocks; Sustainable forest management; and Enhancement of forest carbon stocks.

Accordingly, three major emission reduction programmes have been outlined in the Strategy. These are: Emission reduction programme for the Cocoa Forest Mosaic Landscape; Emission reduction programme for the Shea Landscape of the northern savannah zone; and Legislative progamme for the policy and legislative reforms on Tree Tenure and Carbon Rights to create the enabling environment for benefit-sharing.

Three other programmes are still under development. These include: Emission reduction from programme for the Transitional Forest Landscape, Emission reduction programme for the coastal mangroves; and Emission reduction programme for the Togo Plateau.

The implementation of the Strategy within cocoa forest landscape of the high forest zone is expected to contribute to the production of 8.5 MtCO2e of emission reductions from deforestation within the first five years (2016 – 2020) of implementation. It is further expected to contribute to the generation of 255.0 MtCO2e of total emission reductions from deforestation between 2021 and 2036.

Various funding sources have been accessed to support the development of the Strategy. These include the following funding mechanisms: the Forest Preservation Programme (FPP) that

attracted funding from the Japanese Government to undertake an assessment of land-use and forest cover of the entire country to facilitate estimation of carbons stocks and establishment of the baseline information for the country. This was followed up with support from the Forest Carbon Partnership Fund of the World Bank to assist Ghana in the preparation of the REDD+ Readiness and Consultation phases.

Ghana Forest Investment Programme (FIP). With financial support from the Strategic Climate Fund of the World Bank, the Government of Ghana is implementing interventions to address the drivers of deforestation and forest degradation to promote sustainable forest management. Key indicators of performance are to achieve significant reduction of emissions and improvement in carbon stocks as well as enhance livelihood options. It is an innovative financing mechanism involving the Multilateral Financing Institutions such as the World Bank (US$30m) for enhancing natural forest and agroforest landscapes; the African Development Bank (US$15.33m) for engaging local communities in REDD+/enhancement of carbon stocks, which are providing funding to the Ministry of Lands and Natural Resources (MLNR) and International Finance Corporation (US$10m), engaging the private sector in REDD+ implementation.

Ghana Forest Plantation Strategy (2016 -2040): The Ghana Forest Plantation Strategy is the current framework for the implementation of the National Plantation Development Programme. It is aimed at contributing to halting deforestation and forest degradation by providing a sustainable supply of timber and other non-timber forest products and environmental services through the establishment and management of forest plantations, using selected species. Key indicators include the establishment of 625,000ha of forest plantations and the maintenance and rehabilitation of existing 235,000 ha plantation forest between 2016 and 2040 while contributing to increase in food production and environmental sustainability.

The Strategy promotes partnership with Private Commercial Plantation Developers to enter into agreement with the Forestry Commission to undertake reforestation of degraded portions of forest reserves under a land lease and benefit-sharing arrangement. Local communities are also encouraged to participate in the reforestation efforts through the Community Forestry Management Project under which degraded forest reserves are to be restored.

Plantation development efforts support food production through agroforestry practices. It also generates employment and the development of livelihood options. Thus, the programme is contributing to addressing deforestation, forest degradation, food security and poverty alleviation. It is also contributing to environmental sustainability through emission reduction and carbon stocks enhancement, while addressing future wood deficit situation.

A National Plantation Development Fund, has also been established with funding from central government to support the implementation of the Strategy. The Forestry Commission is responsible for the implementation of the Strategy.

Ghana is still in the process of mainstreaming the current seventeen (17) Sustainable Development Goals and associated targets into the National Development Agenda. Three key indicators have been identified for monitoring performance in relation to sustainable forest management:

- Target 15.1.1: Forest area as a proportion of total land area;
- Target 15.1.2: Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas by ecosystem type;
- Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems.

2.2   Policy and Legislative Framework

The Ministry of Lands and Natural Resources (MLNR) is responsible for policy formulation, monitoring, evaluation and supervision of the entire forestry sector. The Forestry Commission, established by Act 571 of 1999, is responsible for the regulation of the utilization of forest and wildlife resources, as well as the development, conservation and management of those resources and the coordination of the implementation of the policies related to them. The main functions of the Commission are as follow:

- Regulate the utilization of forest and timber resources
- Manage the nation's forest reserves and wildlife protected areas;
- Assist the private sector and other bodies with the implementation of sector policies;
- Undertake the development of forest plantations for the restoration of degraded forest areas, the expansion of the country's forest cover and increase in the production of industrial timber and related forest products.

The Government of Ghana recognizes the importance of the forest sector in terms of contribution to national development in the national development policy. Therefore, within the National Development Agenda, the *Ghana Shared Growth and Development Agenda Vol. II,* one of the seven major components: ***Agriculture and Sustainable Natural Resources Management*** focused on reversal of forest degradation and restoration of degraded landscape through reforestation and afforestation. To regulate the industry a number of legislative instruments have been enacted. These include the National Land Policy of 1999, Forest Plantation Development Fund (FPDF) Amendment Act 2002 (Act 623) and Forest Protection (Amendment) Act 2002 (Act 624) as well as the Timber Resources Management (Amendment) Act, 2002, (Act 617). The implementation of these policies and major interventions have impacted the forest resources of the country, resulting in various land-use and forest cover.

Forest Cover: Three main land cover classifications are recognized by the FAO Global Forest Resources Assessment (FAO, 2015) in Ghana. These are Forests, Other Lands and Water. Ghana's national definition of forests include land of more than 0.5 ha with tree height of at least 5m and canopy cover of more than 10%. This excludes lands under agriculture or urban landscape. By this definition, the forest cover is about 39% of the total land cover, Water 5% and Other Lands cover 56% including agricultural and urban land use and forest patches.

An assessment of the land use cover in 2015 (FC-FPP, 2015) indicate increasing forest cover of about 0.3% annually. Table 1 below depicts the trend since 1990 to 2015

Table 1: Land Cover Classification in Ghana (1990 – 2015)

No	FRA Category	1990	2000	2005	2010	2015
1	Forest area	8,627,401.9	8.908,607	9,053,360	9,195,137	9,294,349
2	Other Lands	14,126,598.1	13,845,393	13,700,640	13,558,863	13,459,651
3	Water	1,100,000	1,100,000	100,000	1,100,00	1,100,000
4	Total	23,854,000	23,854,000	23,854,000	23,854,000	23,854,000

Source: Global Forest Assessment (2015).

Within the High Forest Zone, timber production area is estimated at 762,400 ha (47%), while areas under permanent protection of soil, water and conservation of biological diversity, is about 352,500 ha (22%). Those areas subjected to natural regeneration is about 122,000 (7%), while the area earmarked for conversion into plantations is about 397,000 ha (24%).

The size of the timber production area has declined over the years from 1.6m ha in 1990 to about 762,400 in 2015. Harvesting of timber is regulated by a maximum limit of wood volume that is set for exploitation by the Forestry Commission through the implementation of the Annual Allowable Cut (AAC). Over the years, this has been set at 0.5m m3/yr for the on-reserve and the same for the off-reserve areas. However, due to inadequate management capacity to ensure effective enforcement, it has always been exceeded by more than 200% largely through illegal operations.

2.3   Contribution of the Forestry Sector to National Economy

The forest sector contributes significantly to national development as reflected in the computation of the Gross Domestic Product (GDP). It remains the third largest contributor in foreign exchange earnings. This is largely accounted for by the recognized socio-economic activities of the formal sector at the national level. The informal sector, which is dominated by the small-to medium scale enterprises, covers wood products, non-wood forest goods and services as well as rural ecotourism and agricultural production in plantations. Though of socio-economic significance in the national economy, the full extent of the contribution of the non-timber forest products is not captured in the national accounting system, thus undervalued, and inadequately represented in policy analysis and decision-making. Hence, the sector is not given the appropriate attention in terms of the allocation of national resources for effective management.

It is estimated that about 2m people in Ghana depend on forest products for subsistence. This include a wide range of forest related activities such as fuelwood and charcoal production, woodcarving, canoe-carving, rattan and chewing stick-gathering. In terms of job creation, there are about 30,000 small-scale carpentry firms employing about 200,000 people and 5,000 as woodcarvers. Illegal chain saw operations provides 130,000 with jobs and livelihood to about 650,000, while 5000 to 6000 people are involved in the bush-meat trade supported by 300,000 hunters who harvest about 220,000 to 380,000 metric tons of bush-meat valued between US$ 210m and US$380m annually. Canoe carvers are estimated at 1,500. It is further estimated that nut collection from the wild, with 40% exported annually is valued at about US$ 30m and dominated by 600,000 women in the northern savannah sector (MNLR, 2016).

About 16m^3 of wood valued at US$200m is consumed in various forms as energy annually accounting for about 86% of urban energy demand. It is also a source of income-generating activity to (charcoal producers, transporters and retailers) to a significant number of rural forest communities. Harvested woodlot is valued at US$206,776.32 annually. Herbal medicine is estimated at US$130m annually while wildlife and other plant products export earn about US$12.9m and US$18m annually (MNLR, 2016).

Table 2: Contribution of the major sectors to the Gross Domestic Product

Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015
Logging and forestry	705.9	632.4	687	757	651	695	726	754	783
Cocoa	493.2	509.1	535	535	771	699	717	747;8	738
Mining	531.6	544.4	581	690	2,116	2,462	2,747	2,834.4	2,753
Oil and Gas				65	1,372	1,669	1,969	2,058	2,076
Total GDP in purchase value	**19,518**	**21,304**	**22,336**	**24,101**	**27,486**	**30,040**	**32,237**	**35,522**	**34,823**

Source: Ghana Statistical Service, 2016)

As shown in Table 2 above, it is only the contribution of the logging industry that are captured and reflected in the national accounting system. The real contribution of the formal and limited selected components of the informal sectors of the forest sector to the national economy is estimated at US$852m (FC, 2014). There is therefore inadequate representation of the values of the goods and services of the forest sector since no systems have been put in place to comprehensively capture them in the national accounting system.

CHAPTER THREE

REVIEW OF CURRENT RELEVANT GLOBAL STRATEGIES, NATIONAL POLICIES AND PROGRAMMES AND INTERVENTIONS RELATED TO SUSTAINABLE FOREST MANAGEMENT IN GHANA

3.0 The United Nations Strategic Plan on Forests

The United Nations Strategic Plan for Forests 2017-2030 provides a global framework for sustainable management of forest and trees outside forests, halting and reversing deforestation and forest degradation and increasing the forest area (UN E/CN/18/2017/2.) The plan embraces six (6) Global forest goals and 26 targets to be achieved by 2030 and further encourages member states to report on voluntary national contributions towards their attainment. The Strategic Plan serves as a guide for reporting on forest-related contributions to the implementation of the 2030 Agenda for Sustainable Development, the UNFCC, CBD, UNCCD as well as the UN Forest Instrument. The primary purpose is to stimulate and strengthen coordinated actions, cooperation and political commitment by actors at all levels to enhance sustainable forest management and the contribution of forests and trees outside forest to the 2030 Agenda for Sustainable Development.

According to UNFF, 2013, forests have played a major role in socio-economic development of nations, support of livelihoods and promotion of sustainable development in many countries (UN/E/CN.18/2013/4). However, due to a lack of common methodology for gathering information on the benefits from forests, other than timber, little or no systematic socio-economic data is available in relation to the comprehensive contribution of the forests in the computation of Gross Domestic Products or the national economic development. While the material and cash benefits of forests, generally is better appreciated, that of the non-cash contributions of forests including non-wood products, ecosystem services, ecotourism and cultural benefits, which are largely invisible are under-valued.

As such the full extent of the contribution of the forestry sector to society and national development is not appreciated by decision-makers. This often results in poor allocation of resources for the sustainable management of the forest resources (Birikorang, 2011). The new national voluntary reporting format on progress towards the implementation of the Strategic Plan is therefore designed to assist reporting countries to develop and adopted a common format for monitoring so as to generate reliable data and information to enhance the visibility of the contribution of forests and trees out of the forest to socio-economic development.

3.1   Ghana's National Development Agenda

In Ghana, all the relevant state national development initiatives, including the forest sector are guided by an over-arching National Development Agenda. The current one is the *Ghana Shared Growth and Development Agenda (GSGDA) II, 2014-2017*. The policy measures are prioritized in seven (7) thematic areas:

1. Ensuring and sustaining macro-economic stability
2. Enhancing competitiveness of Ghana's private sector
3. Accelerated agricultural modernization and sustainable natural resources management
4. Oil and gas development;
5. Infrastructure and human settlements development;
6. Human development, productivity and employment; and
7. Transparent and accountable governance.

The third (3) programme area focuses on Accelerated Agricultural Modernization and Sustainable Natural Resources Management under which issues related to the forestry sector, in particular sustainable forest management, are considered under the National Development Agenda. In 2015, the programme identified the following forest related indicators for monitoring progress of performance on sustainable management of the forest resources:

Table 3: Selected Indicators of the National Development Agenda and Matching Targets of the UNSPF

No.	Selected Indicators	Targets of the Global Forest Goals	Data Status
a	Rate of loss of Biodiversity	Target 3.2 of Goal 3	Not quantified, no data available
b	Stock of biological diversity	Target 3.2 of Goal 3	Quantified according to taxa
c	Percentage of degraded area within areas under protection	Target 1.3	No indicator. Could be quantified under land cover change
d	Number of recorded infractions	Target 3.2 of Goal 3	Quantified (20%). No clarity on what to measure
e	Total number of protected area staff	Target 3.2 of Goal 3	Quantified
f	Percentage of compliance with annual allowable cut	Target 3.2 of Goal 3	Quantifiable
g	Hectares of degraded forest restored	Target 1.3 of Goal 1	Quantifiable
h	Volume and value of wood and timber products per regional market	Target 2.2 of Goal 2;	Quantifiable
i	Rate of deforestation	Target 1.3 of Goal 1	Quantifiable

An attempt has been made to map the selected indicators of performance against the six (6) Global Forest Goals and Targets as shown in the Table 3.

A recent report on the review of progress in the implementation of the National Development Agenda in 2015, indicated that while there is no information on rate of biodiversity loss, the stock of biological diversity remained stable. This is reflected in the number of species recorded

for major taxa such as mammals, reptiles, birds, fishes, plants, amphibians and reptiles. While this indicator matches against Target 3.2 of Goal 3, no data is available to measure progress toward its attainment. This represents a gap in availability of information for effective monitoring and reporting

With regard to protected areas, there was no indictor and targets on information on the percentage of degraded areas within the area under protection, despite a baseline of 32% established in 2013. This indicator matches with Target 1.3 of Goal 1. This could however be derived from land cover change maps analyzed under Forest Resource Assessment data collected periodically by FAO.

Furthermore, with regard to law enforcement in protected areas, the identified indicator was incidence of the infraction in the protected areas with a target of 20% reduction by 2015 with reference to 2013 as the baseline. This however, could not be attained. This indicator matches Target 3.2 of Goal 3. It is however not clear how the percentage targeted is to be determined.

Number of protection staff and annual allowable cuts are all indicators of forests under sustainable management thus both of them could be matched with Target 3.2 of Goal 3 and provided under the Forest Resource Assessment data collected by FAO.

Volume and value of timber wood and timber products is a reflection of investment in forest enterprises and as such is matched with Target 2.2 of Goal 2

The last two rate of deforestation and hectares of forest restored are all a reflection of sustainable forest management practices showing interventions for addressing deforestation and forest restoration and thus matches with Target 1.3 of Goal 1.

Since Ghana has integrated sustainable forest management into the National Development Agenda, this has contributed to the attainment of Target 5.1, 5.2. 5.3 and 5.4 of Global Forest Goal 5. Details of the analysis are provided in Appendix II below.

3.2   Ghana's Forest and Wildlife Policy and the National Forest Programme

Ghana's Forest and Wildlife Policy has identified five (5) major policy objectives as the framework for sustainable forest and wildlife management. These also constitute the Development Objectives of the National Forest Programme: *Ghana Forestry Development Master Plan, 2016 – 2036.* The Plan is designed to implement the policy objectives of the Forest and Wildlife Policy, over a twenty (20) year period. The details of Development Objectives (same as the policy objectives of the Policy) are as follows:

1. *To sustainably manage and enhance the ecological integrity of Ghana's forest, savannah, wetlands and other ecosystems for the preservation of vital soil and water resources, conservation of biological diversity and enhancing carbon stocks for sustainable production of domestic and commercial produce.* Thus the selected key indicators such as development of management plans for protected areas as well as off-reserve areas, to enhance conservation, natural regeneration of degraded areas, enhancement of ecosystem services, creation of livelihood options and resource tenure and benefits-sharing, will

contribute to Targets 1.1, 1.2, 1.3 and 1.4 of Global Forest Goal 1 as well as Target 2.1, 2.3, 2.4 and 2.5 of Goal 2. They will however not attain Target 2.5.2 as no attempts have been made to measure and integrate biodiversity values into national accounting system. There is therefore a gap in the attainment of Target 2.5.2. Significant progress is also being made in terms of attaining Targets 3.1 and 3.2 of Goal 3 through the implementation of Community Resources Management Areas, since this allows communities to put areas off-reserve under sustainable management. See Appendix III below.

2. *To promote the rehabilitation and restoration of degraded landscapes through forest plantation development, enrichment planting and community forestry informed by appropriate land-use practices to enhance environmental quality and sustain the supply of raw materials for domestic and industrial consumption and for environmental protection.* Key indicators are area restored, hectares of plantation established, carbon stocks sequestered, livelihood and income generation options created. It also include food production and supply of forest products and services. This facilitates community participation and hence the selected indicators in the monitoring framework contribute to Target 1.1, 1.2, 1.3 and 1.4 of Goal 1. It also include Target 2.1, 2.2 and 2.5 of Global Forest Goal 2. See Appendix III below

3. *To promote the development of viable forest and wildlife based industries and livelihoods, particularly in the value added procession of forest and wildlife resources that satisfy domestic and international demand for competitive-priced quality products.* The selected indicators are, supply of and access to forest products, availability of technological support for the industry players to enhance quality management and competitiveness, value addition and access to credit and market, under this component contribute to Targets 2.1 and 2.2 of Goal 2 and Target 3.3 of Global Forest Goal 3. They also contribute to Targets 4.1, 4.2, 4.3, 4.4 and 4.5 of Global Forest Goal 4. See Appendix III below.

4. *To promote and develop mechanisms for transparent governance, equity sharing and citizens' participation in forest and wildlife resource management.* Key indicators include the establishment of functional forest forums, granting of ownership rights, capacity building, women and youth participation in forest related income generation ventures, increase resource availability to communities. These will contribute to Targets 2.1, 2.2, 2.3 and 2.4 of Global Forest Goal 2 as well as 5.2, 5.3 and 5.4 of Global Forest Goal 5 as well as 6.5 of Goal 6. See Appendix III below.

5. *To promote training, research and technology-led management and utilization of the forest resources to ensure sustainability, economic growth and environmental stability whilst promoting information uptake from both the forestry institutions and the general public.* Key indicators include establishment of scientific forum to share knowledge, build capacity for natural resource accounting, certification of products, enhancement of

value addition through use of research and technology. This contributes to the attainment of Targets 2.2, 2.5.2 of Global Forest Goal 2 and Target 4.5 of Global Forest Goal 4. It also include Targets 6.4 and 6.5 of Global Forest Goal 6. See Appendix III below.

6. *Promote the development of financing mechanism for natural forest and wildlife management, timber plantation development, plant and machinery, development of tertiary processing activities, wood-fuel processing and micro/small forest based enterprises.* Selected indicators include establishment of trust funds to provide grants to local communities, enhance private sector investment in sustainable forest management, assist private sector to mobilize funding for investment. This contributes to Target 2.1, 2.2, 2.4 of Global Forest Goal 2 and Target 4.1 and 4.2 of Global Forest Goal 4. See Appendix III below.

3.3   Other related Sustainable Forest Management Programmes:

Other forest-related programmes include the following:

Ghana REDD+ Strategy 2016 is focused on avoided deforestation, avoided degradation, carbon stock enhancement, sustainable forest management and biodiversity conservation. Accordingly interventions are aimed at emission reductions and carbon stock enhancement in the high forest zone and the savannah landscape. Key indicators here are forest areas restored, emission reductions and carbon stock enhancement. It also include income and livelihood options created. This will contribute to Target 1.1, 1.2 and 1.3, of Global Forest Goal 1. It also include 2.1, 2.2 and 2.3 of Global Forest Goal 2. Because the implementation of the Strategy has been an innovative way of mobilizing financial support for sustainable forest management, it is also contributing to Targets 4.1, 4.2, 4.3, 4.4 and 4.5 of Global Forest Goal 4. See Appendix III below.

Ghana Forest Plantation Strategy: 2016-2040, which seeks to achieve sustainable supply of planted forest goods and services to deliver a range of economic, social and environmental benefits. Key indicators include expansion in forest area through reforestation of degraded areas, afforestation and carbon stock enhancement. It also include income generation for forest dependent people as well as production of food crops under agroforestry practices. These are related to the attainment of increase in forest area, carbon stock enhancement, halting forest deforestation and restoration of degraded areas. It also include income generation towards poverty reduction. They also provide the raw materials for the wood-based industries. Thus the implementation of the Strategy contributes to attainment of Targets 1.1, 1.2, 1,3, 1.4 of Global Forest Goal 1. They also contribute to Targets 2.1, 2.2, 2.3 and 2.4 of Global Forest Goal 2. See Appendix IV below.

*National Environmental Policy***:** The policy commits to the principle of optimum sustainable exploitation of the ecosystems resources. Key indicators here are the recognition of the serious environmental challenges including loss of biodiversity, land degradation, deforestation and desertification, wildfires, illegal mining as well as air pollution. Interventions here will

contribute to Targets 1.1, 1.2, 1.3 and 1.4 of Global Forest Goal 1. They also contribute to Targets 2.5 of Global Forest Goal 2.

Forest Law Enforcement, Governance and Trade (FLEGT), is an initiative of the European Union Voluntary Partnership Agreement, providing a strong complementary channel for addressing the major drivers of deforestation and forest degradation in the Ghana's forest landscape. It is focused on performance based and climate smart approaches. Key indicators are the development of a wood tracking and a field audit verification system to identify illegal wood products, to enhance law enforcement and governance. The implementation of this programme contributes to mobilization of financial support for sustainable forest management. Thus the initiative contributes to Target 4.1, 4.2, 4.3, 4.4 and 4.5 of Global Forest Goal 4. It also include Target 5.2 and 5.4 of the Global Forest Goal 5. See Appendix IV below.

Ghana Forest Investment Programme (GFIP) is designed to reduce the green house gas emissions from deforestation and forest degradation while reducing poverty and conserving biodiversity.

The key indicators of this programme include:

1. Number of people in forest communities with increased monetary or non-monetary benefits from forest (number) of which female (number) form a component. This will contribute to Target 2.1 of Goal 2.
2. Area under improved Community Resource Management Areas (CREMAs) and climate smart cocoa management practices in target landscapes due to the project interventions. This will contribute to Target 1.1, 1.2, 1.3 and 1.4 of Goal 1.
3. Area of forest in targeted landscapes (ha), disaggregated by closed forest, open forest, and crop land. This will contribute to Target 1.1, 1.3
4. Total greenhouse gas emissions plus enhancement of carbon stocks, estimated in tons equivalent of carbon/year relative to 2012 reference level based on Ghana's REDD+ Monitoring, Reporting and Verification system. This will contribute to Target 1.2
5. Director project beneficiaries (number) of which females form a proportion. Target 2.1 of Goal 2.

For details on the alignment of the Programme to the six (6) Global Goals and Targets, see Appendix IV below.

The National Development Planning Commission in Ghana is responsible for the cross-sectoral coordination of all programmes at the national level. It organizes inter-sectoral consultation processes to ensure effective planning and coordination among the sectors. The Natural Resources and Environmental Governance Programme supported by Development Partners and Donors, is also another mechanism for cross-sectoral coordination for statutory organizations within the environment, mining and forestry sectors. These two initiatives therefore contribute to the attainment of Target 6.3, 6.4 and 6.5 of Global Forest Goal 6. There is however a major gap with regards to the attainment of Target 6.2 of Global Forest Goal. This is understood in the light that it appears to relate to only the organizations within the Collaborative Partnership on Forests.

3.4 Financial Inflows in the Forestry Sector

Currently, there are five major sources of financial inflows for sustainable forest management in Ghana. These are the budgetary allocation from the Government of Ghana (GoG) largely as compensation or the salaries of workers, Internally Generated Funds from the operations of the Forestry Commission of Ghana (IGF) and that provided by Development Partners or Donors. The other sources include what the private sector players invest in sustainable forest management particularly in reforestation and afforestation. It also include what civil society groups such as the non-governmental organization invest in sustainable forest management.

Internally Generated Fund: This consist of disbursement of Stumpage Fees/Rent form forest management, concession fees, timber rights, permits and licenses as well as sale of confiscated forest products. It also include payment for ecotourism in selected protected areas. This amounted to US$13,154,899.48 in 2015 and US$19,096,292.51 in 2016

Compensation: Government pays the salaries of workers as compensation to the tune of US$12,767,817.50 in 2015 and US$13,875,244.64 in 2016.

Donors/Development Partners: Furthermore, the forestry sector received support from Development Partners or Donors to the tune of US$1,980.077.39 in 2015 and US$ 3,446,445.65 in 2016. This is facilitated through the implementation of programmes such as Ghana REDD+ Strategy, the Ghana Forest Investment Programme of the World Bank and other Development Partners. It does not include inflows through projects implemented by non-governmental organizations and other civil society organizations and that received by private sector for programmes implemented by them.

Distribution of Royalties: The Forestry Commission generates funds through fees charged for forest management and ecotourism. Of the total generated, the Commission retains 50% of the amount and the Administrator of Stool Lands is allocated 10%. The rest (considered as 100%) is distributed to key stakeholders such as Traditional Authorities (20%), District Assemblies (55%) and Stool Lands (25%).

Export of Timber and other wood products: One major source of financial inflow by which the economic performance of the sector is measured, is the foreign exchange the country earns through the export of timber and other wood products from the forest. The table below shows what the country earned through such exports from 2010 to 2016.

Table 4: Foreign exchange earned through export of timber and other wood products

No.	Year	Volume (m³)	Value (€)
1	2010	403,254.00	137,850,000.00
2	2011	319,842.00	107,400,000.00
3	2012	251,245.00	99,836,393.79
4	2013	275,470.23	121,793,697.76
5	2014	356,036.00	138,215,618.00
6	2015	367,060.72	187,624,643.02
7	2016	396,991.53	224,958,215.86

Source: Timber Industry Development Division, FC

The value of the wood exports continues to increase over the years despite the substantial decrease in volume since 2010.

3.5 Identified Data Gaps within the Forestry Sector Programmes

Gaps in the National Development Agenda: There are four (4) major gaps in the forest-related indicators of the National Development Agenda:

Rate of Biodiversity loss: No data was available on the rate of biodiversity loss. Even though this key indicator is identified, how the rate of loss could be determined was not outlined. This represents a gap in data generation in Target 3.2 of Global Forest Goal 3.

Forest Degradation: There is also no information on forest degradation for 2015 and thus a gap in Target 1.3 and of Global Forest Goal 1.

Payment for Ecosystem Services (PES). There was no means of identifying and measuring the ecosystems services provided by forests. Currently, apart from payment for ecotourism and the development of frameworks to determine carbon sequestration in selected protected areas in Ghana, there is no mechanism developed to implement other aspects of the payment for ecosystem services. In particular, no monetary value or payment system has been instituted for watershed protection and water supply, soil conservation and erosion control, pollination services, nature conservation and soil fertility. This could be reflected in payment to local communities to incentivize them to conserve nature to facilitate these functions. Thus even though carbon stocks and emission assessment are key indicators in other programmes, this is not reflected in the National Development Agenda. Thus gaps remain with regards to Target 1.2 of Global Forest Goal 1 and Target 2.4 of Global Forest Goal 2, as far as the forest related indicators of the National Development Agenda are concerned (NDPC, 2015).

Poverty reduction and livelihood options: Even though the National Development Agenda is supposed to reflect how forest resources are contributing to poverty reduction in Ghana, there was no indication of assessment of the number of forest dependent people in the country. Neither was there any means to measure the number of people who derived their livelihood or income from the forest goods and services. Furthermore, there was no means to determine the proportion of income of forest dependent people derived from forest products to contribute to the attainment of Target 2.1 of Global Forest Goal 2

In a related assessment of the contribution of forest goods and services to livelihood support, IUCN Ghana established that 33% of the income of forest dependent women was derived from forest products while for the men it was 41%. Forest dependent people were identified as those living within five (5) kilometers range of forests (IUCN, 2011). This could be adopted as a major indicator for assessing the extent to which forest goods and services contribute to livelihood support and hence assist in providing a good indicator for Target 2.1 of Global Forest Goal 2. Thus the proportion of forest dependent people living in households with income below the national/international poverty line of US$1.90/day, proportion of population living in households

who depend on forest products for their livelihood support as well as proportion of total income of forest dependent people derived from forest goods and services, could be good indicators for measuring poverty reduction and livelihoods in forest areas. These indicators need to be included in both the National Development Agenda and the National Forest Programme.

3.6   Gaps in the National Forest Programme

The Ministry of Lands and Natural Resources developed and launched the Forest and Wildlife Policy (MLNR, 2012) and that of the Ghana Forestry Development Master Plan (2016 -20136) in 2012 and 2016 respectively. As such there is the need for an effective coordination mechanism to ensure that they are mainstreamed into all components of the forest sector, including programmes implemented by the public, private and civil society organizations. It is worth noting that currently there is no coordination mechanism to ensure that civil society and the private sector mainstream these programmes into their operational areas.

There is therefore the need for the development of a common understanding and framework to facilitate an over-arching monitoring and implementation of the two documents, which should be embraced by the public, civil society and private sector entities. This could be carried out through a major stakeholder consultation process with representation of all the key players in the forestry sector. This will allow for the identification of the appropriate indicators related to the Targets of the Global Forest Goals and other sector programmes and their re-alignment with other forest-related international agreements.

The current sector-wide monitoring and evaluation framework of the Forestry Commission is based on the Selected Indicators of the National Development Agenda and the Ghana Forestry Development Master Plan (MLNR, 2016).

All other forest related programmes such as the National Plantation Development Strategy, Ghana REDD+ Strategy and the Forest Investment Programme draw from both the National Development Agenda and the Ghana Forestry Development Master Plan

Promote and Enhance Ecological Integrity**:** Under this programme of the National Forest Programme, it is intended to support traditional authorities to afford legal protection to sacred groves and other areas under community conservation initiatives. This is in line with Target 1.1 since it will increase the effort to reverse forest loss and increase the area under protection. Under this component, the establishment of Community Resource Management Areas (CREMAs) is being promoted as an innovative community resource management initiative that has the potential to increase forest areas as well as enhance carbon stocks, thus contributing to Target 1.1 and 1.2 of Global Forest Goal 2. The initiative will also contribute to biodiversity conservation by increasing the proportion of important sites for terrestrial biodiversity thus contributing to the attainment of Target 2.5.1 of Gobal Forest Goal 2.

However, there are no measures to promote the integration of the biodiversity values in national development plans as stipulated in Target 2.5.2 of Global Forest Goal 2. Thus this represents a gap in the provision of information on the reporting and development of a monitoring system in Ghana.

The second component on rehabilitation and restoration of degraded landscape will contribute to the attainment of Targets 1.1 and 1.2 of Goal 1. However, there are no clear indicators to provide a quantitative assessment of the income generation and poverty reduction roles of the strategy. Thus, the poverty reduction related indicators proposed above under the *Poverty and Livelihood Options* for inclusion in the National Development Agenda, also apply here.

From the analysis of the questionnaires and the implementation of the various programmes within the forestry sector, there was no gap in providing information except for Target 6.2 of Global Forest Goal 6, an indication that it is understood to be for the players in the international community but not those in-country.

Civil Society Organizations: Civil society groups and the private sector are quite active in the forestry sector and access a significant amount of funds for sustainable forest management. There is however, no mechanism for monitoring investment from both the private sector and civil society players, even though they contribute substantially towards investment in sustainable development. This represents a gap that needs to be addressed. Currently, due to the lack of this coordination mechanism, it is not possible to coordinate all forest related financing from all sources at all levels, including private and philanthropic financing in Ghana. Thus there is a gap with regards to Targets 4.1 and 4.2 of Global Forest Goal 4, in determining the full extent of forest related financing from all sources

An attempt was made by the Forestry Commission in collaboration with Nature Conservation and Research Center and Forest Trends to track inflows into the forestry sector to support the REDD+ activities, from both international and local sources. It was noted that between 2009 and 2014, an amount of US$98,241.539 was committed to implementation of activities related to the REDD+ Strategy in Ghana. Of the total amount committed, only US$29,340,550 was successfully disbursed by the original donor and international recipients (Kwame and Asare, 2015), indicating a 30% disbursement rate over six (6) years.

The organizations which received the funds and disbursed them included the Ministry of Lands and Natural Resources and the Forestry Commission. Others were the UNDP, USAID, IUCN Ghana and the Ghana Cocoa Board. Since then no attempt has been made to collate such inflows, neither is there any established mechanism for collating such information. Thus, this represents a major gap in determining the full volume of financial inflows from the private sector and civil society organizations in Ghana. This is related to Targets 4.1 and 4.2 of the Global Forest Goal 4.

CHAPTER FOUR

ASSESSMENT OF THE IDENTIFIED DATA GAPS IN THE FORESTRY SECTOR

4.0 Effective Coordination mechanism:

There is the absence of an effective coordination mechanism at the level of the Ministry of Lands and Natural Resources. Hence, there is no information on the number of forest dependent people who derived their livelihood from forest goods and services. Even though civil society and the private sector respectively play a significant role in investing in and supporting sustainable forest management in Ghana, these are not being coordinated. There is therefore a data gap in appreciating their investment and their contribution to sustainable forest management.

4.1   Law Enforcement:

There is no mechanism for the comprehensive measurement of the performance on law enforcement. The current improvement in law enforcement as indicated in the National Development Agenda, is measured by number of incidence in various infractions such as reported cases of illegal farming in forest reserves, control of illegal harvesting of timber from plantations and natural forests and forest fire control. It also includes illegal mining in forest reserves and other protected areas as well as poaching cases (NDPC, 2015).

While a 20% reduction in the incidence of these infractions was set as the target for 2015, over the reported incidence in 2014, it is not a good indicator of performance in law enforcement. The data available on these limited number of infractions (6) indicate decline in four of them, one recorded an increase while the last could not be determined. An overall increase of 2.5% over the 2015 reported incidences was recorded by 2015 as against target of 20% decline. This could only apply if it was established that there was complete protection for the entire forest estate. Hence, there is still a gap for determining and implementing a more comprehensive indicator on performance on law enforcement in protected areas. Issues such as cases where the offenders arrested were successfully prosecuted or discharged in the law courts, snares found, gunshots heard in reserves, need to be included. There is no measure of the percentage reduction in the incidence of illegal activities as required under Target 5.2 of Global Forest Goal 5.

The log tracking system, which is a legally verifiable and traceable mechanism of law enforcement, needs to be developed and implemented nationwide to determine the proportion of legal and illegal wood products in the system. It will also contribute to the reduction of illegal activities or infractions in the forestry sector.

4.2   Valuation of Forest Goods and Services/Payment for Ecosystem Services:

There is no formal public accounting system to recognize and capture the full value of forest goods and services including ecosystem services. As such, values such as water recycling and purification, air purification, nutrient recycling, soil conservation, biodiversity conservation and carbon sequestration are seriously undervalued and not reflected in national accounting. This

could be the reason why there were no data on rate of loss of biodiversity. There is therefore the need to devise methodologies for monitoring and assessing the values of forest goods and services and other ecosystem services beyond the production of timber (UN E/CN.18/2017/2) and to enhance the contribution to Target 2.4 of Global Forest Goal 2 and Target 3.2 of Global Forest Goal 3. The absence of a valuation system means that they cannot be integrated into the national accounting system thus creating a gap in the Target 2.5.2 of Global Forest Goal 2.

Furthermore, there was no information on carbon stocks enhances or emission reduction in the National Development Agenda. No information was also available on forest dependent people or their level of income derived from forest products at related to Target 2.1 of the Global Forest Goal 2.

4.3 Household Consumption of Forest Products/Livelihood Options:

Household consumption of forest goods and services, which play a significant role in livelihood support, are often not captured in national accounting. In 2011, the per capita lumber consumption at household level was estimated at 0.2m3 for 60% of the rural population of 23m representing 300,000m^3 and estimated at US$ 32m. This value after the necessary adjustment with GDP computation contributes US$22.7m from community-own consumption of lumber (FAO-IUCN-GEF, FC, 2011). This is not captured in the national accounting system. However, it contributes to Target 2.1 of Global Forest Goal 2. Thus, it is a major gap in computation of the full contribution of the forest sector to national development

Some of the household consumption issues include the following:

a. Small-scale carpenters: 40,000 small-scale and micro carpentry enterprises across the country do not have access to wood from the formal sector and thus depend on illegal wood supply which is not captured in national accounting. Annual consumption is about 40,000m3 creating about US$10m value addition, which is not included in the GDP computation Target 2.4 of Global Forest Goal 2.
b. Chain saw lumber producers consume lumber with market value of US$60m (FAO,IUCN-GEF,FC, 2011). However since these are considered as illegal they are not captured in reports.
c. Forest communities head porters of lumber at forest gate: About 60,000 earning GHC 180 per person per annum equivalent to US$8m. This is a major income earning venture which contributes to Target 2.1 of Global Forest Goal 2 but is not captured in the national accounting system
d. Chain-saw operators: 70,000 operators and assistants earning US$2m annually. Produce lumber valued at US$60m with value addition of US$40m and stumpage fees of US$8m from 1.7m m3 at 30% recovery leading to 500,000m3 of lumber annually to domestic market, thus contributing to Target 2.4 of Global Forest Goal 2.

Thus under the poverty reduction related indicators of the National Development Agenda and the National Forest Programme, there should be indicators such as the proportion of the income of forest dependent people derived from forest goods and service. This will contribute to enhancement of the visibility of the contribution of forest goods and services in

poverty reduction and hence the appreciation of decision-makers with regard to the importance of managing these resources sustainably to support livelihood options. It will also contribute to the attainment of Target 2.1 of Global Forest Goal 2.

4.4 Forest Degradation :

No comprehensive data is available on the extent of degradation of forest and protected areas. However "rate of loss of biodiversity and stock of biological diversity are chosen as the indicators for evaluation of the status of biodiversity in Ghana. Since no data is available it thus represents a major gap in the available of quantifiable data for reporting on Target 2.5 of Global Forest Goal 2

4.5 Poverty Reduction:

While it is established that there are about 200,000 forest depended people, there is currently no common mechanism to identify the number of forest dependent people living under the poverty level and to monitor the contribution of the forestry sector to their livelihood support at the national level. At the project site level, IUCN Ghana office assessed the level of dependence of rural forest communities (IUCN, 2011). They established that forest dependent people are among the poorest in Ghana earning less than US$250/yr, which is far less than the international poverty line of earning below $1.90/day.

They however established that women derived 33% from forest products while with men it is 44% (IUCN, 2011). These quantified livelihood indicators need to be scaled up to the national level and mainstreamed into the Ghana Living Standard Survey (GLSS). This will afford national data on the contribution of forest products to livelihood support and poverty and contribute to quantifiable information on data at the national level. Thus to enhance the visibility of the contribution of forest goods and services to poverty reduction, both the National Development Agenda, the National Forest Programme and other forest related programmes should clearly include the following indicators
1. Proportion of the total population of Ghana who depend on forest goods and services for their livelihood (e.g. forest dependent people refer to people within 5km of forests of forest whose livelihood is dependent on forest goods and services)
2. Proportion of forest dependent people living in households with income below the national/international poverty line of US$1.90/day
3. Proportion of the total income of forest dependent people derived from forest goods and services;

These could be suitable indicators for measuring progress being made towards the attainment of Target 2.1 of Global Forest Goal 2.

4.6 Contribution of the Forestry Sector to Food Production:

Even though there is significant food crops production under the implementation of the National Plantation Development Strategy, this was not indicated in the monitoring framework under livelihoods. It was also not reflected in the monitoring framework of the National Forest Programme and the National Development Agenda. It was however captured

under the Ghana Forest Investment Programme and the 2015 Annual Report of the National Forest Plantation Development Programme (FC, 2015). This represents a gap in attaining Target 2.3.3 of Global Forest Goal 2. Thus indicators such as:de

1. Proportion of total food production produced in forest areas (e.g. from plantations and other agroforestry practices in support of forest regeneration and maintenance).
2. Proportion of total forest land area contributing to food production.
3. Proportion of income derived from food production in the forest areas.

Information on such indicators will reflect the attainment of Target 2.3 of Global Forest Goal 2.

4.7   Collation of Financial Inflows from Private Sector and Civil Society:

Even though civil society groups and the private sector are active in investing in the forestry sector, there is currently no mechanism in place to collate and record this major inflow. This represents a gap in Target 4.1 and 4.2. Thus, a mechanism should be put in place to capture the contribution of these sectors as far as financial inflows for sustainable forest management is concerned. Indicators such as the following should be considered:

1. Proportion of total inflow from civil society organizations active in the forestry sector
2. Proportion of total inflow from private sector active in the forestry sector

Such information will contribute to appreciating the importance of the contribution of these two sectors in relation to investment or financial inflows into the forestry sector.

CHAPTER FIVE

GENERAL CONCLUSIONS AND RECOMMENDATIONS FOR ADDRESSING IDENTIFIED GAPS

The following recommendations are provided for addressing the identified gaps:

1. ***Law enforcement:*** With regard to law enforcement, a comprehensive list of all the infractions in the forest sector should be compiled taking into consideration the number of incidence per infraction. Then an average could be taken to reflect what has been encountered and how the law was enforced to counter such infractions. This could contribute to closing the gap in law enforcement as per Target 5.2 of Global Forest Goal 5.

2. ***Forest Dependent People***: The Forestry Commission and the Ministry of Lands and Natural Resources should liaise with the Ghana Living Standards Survey of the Ghana Statistical Services to develop and include in the household assessment, the indicators that will provide information on the number of forest dependent people as well as the proportion of the income of the forest dependent people that is derived from forest goods and services. This should include the proportion of the household consumption of forest goods and services: both timber and non-timber as well as cash and non-cash. The example of the site work done by the IUCN Ghana office (IUCN, 2011) could be scaled up to derive information at the national level and contribute to a better appreciation of Target 2.1, 2.3 and 2.4 of Global Forest Goal 2. This will provide better understanding of the role of forest in poverty reduction

3. ***Contribution to Food Production and Security***: Even though data was available in the 2015 Annual Report of the implementation of the National Plantation Development Strategy, related to the tonnage of food produced annually while tending tree crops under reforestation programmes, there was no indicator in the monitoring framework to reflect the contribution of forests to food production. To address the issue all volumes of food crops produced as well as the number of forest dependent people involved under the reforestation scheme need to be monitored and documented at all the plantation sites. This could then be collated to provide information on the contribution of the forest ecosystems to food production and to food security as per Target 2.3.3 of Global Forest Goal 2.

4. ***Income of Forest Dependent People:*** The amount of income forest dependent people earn through the sale of food crops produced under the implementation of the plantation strategy should also be indicated to reflect the contribution of this forest activity to poverty reduction as per Target 2.1.1 of Global Forest Goal 2. This is also not captured in the monitoring framework of the National Development Agenda, National Forest Programme and other forest related programmes and thus represents a gap as such. Thus clear indicators such as:

1. proportion of total population with income derived from forest goods and services
2. Proportion of income of forest dependent people derived from forest goods and services
3. Proportion of forest dependent people whose livelihood depends on forest goods and services.

5. ***Household consumption of forest foods***: There was also no data available on foods harvested from the forests in time of shortage of normal food supplies from agricultural activities in both the monitoring indicators of the Ghana Forestry Development Master Plan and the National Development Agenda. This represents a major data gap. Thus household food consumption should be monitored to reflect the proportion of food consumed that is derived from the forests. This will reflect the importance of forest foods in the livelihood of the forest dependent people and contribute to Target 2.3.1 of Global Forest Goal 2.

6. ***Income for Forest Dependent People:*** None of the monitoring frameworks provided data on how much of the income of the forest dependent people, is spent on food. Thus to appreciate the proportion of income spent on food this indicator should be considered and monitored to meet Target 2.3.2 Goal 2. Thus relevant indicator should indicate the proportion of the income of forest depend people derived from forest goods and services.

7. ***Payment for Ecosystems Services/Biodiversity Values and National Accounting:*** No information is available on values of other forest goods and services, such as collection of medicinal plants, honey, spices and other non-timber forest goods and services. This need to be appropriately computed and captured in national accounting systems. Thus, it remains a data gap. To ensure the appropriate integration of biodiversity values into the national accounting system, there is the need for capacity building for natural resources accounting to reflect the full values of the forest goods and services that are not found in the market place. These when appropriately determined could enable the proper integration into the national accounting system and attainment of Target 2.5.2 of the Global Goal 2.

8. ***Biodiversity degradation*** was not appropriately accounted for in the National Development Agenda. Thus, there is the need for regular inventories by the Forestry Commission to generate up to date information as per Target 4.5 of Goal 4 to enable that be accounted for appropriately.

9. ***Financial Inflows:*** To ensure effective coordination of programs in forest sector, the Ministry of Lands and Natural Resources, needs to establish a projects and programmes coordination desk to collate information on all the major players, particularly civil society and private sector organizations, their projects and programmes and the level of investments they are making in the forest sector. This will provide a reliable database on

the programmes their implementing as well as the inputs in terms of financial inflows. This will enhance the attainment of Target 4.1 and 4.2. of Global Forest Goal 4.

10. ***Capacity Building:*** There is the need for the development of capacity for the assessment and integration of values of ecosystem services and other biodiversity values into the national accounting system. This could be done through building the appropriate capacity within the Forestry Commission and the Ghana Statistical Service and other entities responsible for the collection of such information. A good example is value of goods and services such as non-timber forest products/ha (US$/ha). This will address the data gaps related to information gathering as per the Target 4.5 of Global Forest Goal 4. The Secretariat of the UN Forum on Forest could also liaise with UN Statistical Service Secretariat to assist member countries like Ghana with the capacity building in this direction.

11. ***Information Generation:*** When the information is being generated according to all the appropriate indicators identified, then it will be contributing to an important database providing relevant information for decision-making so as to attain Target 4.5 of Global Forest Goal 4. Other than that, it remains a gap to be filled.

12. ***Development of a Monitoring Framework***: In view of the fact that these gaps exist in the major monitoring frameworks in the forest sector, they do not capture and report on the full contribution of the forest sector to national development. There is therefore the need to organize a stakeholder consultation process to review the key issues particularly those areas where the socio-economic importance of forest goods and services are not appropriately reflected in the respective monitoring frameworks and receive recommendation on how they could better be captured.

The identified gaps could also be discussed through stakeholder consultations and views sought on the best way to address them. This will ensure that the contribution of the forestry sector to livelihood support and environmental sustainability are appreciated and duly accorded the necessary attention in decision-making processes. The outcome of this task could form the basis for the development of common monitoring framework that enhances the visibility of the contribution of all the relevant sectors of the forestry sector to livelihoods and national development.

The list of participants at the two workshops (11 January and 27 – 28 February, 2018) are presented as part of Appendix IV.

REFERENCES

1. FAO, IUCN-GEF, FC. 2011. Assessment of the contribution of the forestry and wildlife sectors that are not captured in the national accounting system of Ghana. A collaboration between the Growing Forest Partnership of IUCN and Forestry Commission under the implementation of the Non-Legally Binding Instrument of All-Types of Forests (NLBI).

2. FAO,CIFOR,IFRI and WB, 2016. National socio-economic surveys in forestry: guidance and survey modules for measuring the multiple roles of forests in household welfare and livelihoods, by R.K. Bakkegaard, a.Agrawal, I. Animon, N. Hogarth, D. Millar, L. Persha, E.Rametsteiner, S.Wunder and A. Zezza. FAO Forestry Paper No. 179. Food and Agricultural Organization of the United Nations, Center for International Forestry Research, International Forestry Resources and Institutions Research Network, and World Bank.

3. FC, 2015. National Forest Plantation Development Programme 2015 Annual Report. Forestry Commission, Accra

4. Ghana REDD+ Strategy 2016. Forestry Commission, Accra, Ghana

5. Kwame Agyei and Rebecca Ashley Asare, 2015. Ghana REDDX: Tracking REDD+ Expenditure and Financing flows for 2009-2014.

6. MLNR, 2012. Forest and Wildlife Policy of Ghana. Ministry of Lands and Natural Resources, Ghana.

7. MLNR, 1996. Ghana Forestry Development Master Plan. Ministry of Lands and Natural Resources, Accra, Ghana

8. Ghana Forest and Wildlife Handbook, 2012. Forestry Commission, Accra, Ghana

9. MLNR, 2016. Ghana Forestry Development Master Plan (2016- 2036). Ministry of Lands and Natural Resources, Ghana.

10. NDPC, 2015. Implementation of the Ghana Shared Growth and Development Agenda (GSGDA) II 2014-2017. 2015 Annual Progress Report. National Development Planning Commission, Ghana. Pp 109 -113.

11. National Wildfire Management Policy. Ministry of Lands and Natural Resources, Accra, Ghana

12. UN/E/CN.18/2013/4. Forests and Economic Development, Report of the Secretary-General to the United Nations Forum on Forests. Tenth Session, Istanbul, Turkey 8-9 April, 2013

13. UNFF, 2016. Monitoring progress towards sustainable forest management, through a set of indicators or an index: some suggestions. Background paper to the 2nd Informal inter-agency meeting on indicators to monitor progress towards Sustainable forest management and forest related SGD indicators, New York, 29 April, 2016.

14. IUCN, 2011. Understanding forest dependency for REDD+: Adapting the forest-poverty toolkit to new purpose for REDD+. Briefing Paper, June, 2011

APPENDIX I

GHANA'S PROGRESS TOWARDS IMPLEMENTATION OF THE UN FOREST INSTRUMENT, THE UN STRATEGIC PLAN FOR FORESTS 2017 – 2030 AND VOLUNTARY NATIONAL CONTRIBUTIONS (VNCS)

Name of Organization :………..

Contact Person :……..

No.	GOAL/TARGETS AND INDICATORS	TYPE OF DATA AVAILABLE			
Global Forest Goal 1	**Reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation and contribute to the global effort of addressing climate change**				
	TARGETS AND INDICATORS	QUALITATIVE DATA	QUANTITATIVE DATA	LEAD INSTITUTION	CONTACT PERSON
1.1	***Target 1.1 Forest area is increased by 3 per cent worldwide[1]***				
	Ind 1.1.1 Forest area net change rate (%/yr)				
1.2	***Target 1.2 The world's forest carbon stocks are maintained or enhanced***				
	Ind 1.2.1: Forest carbons stocks (m tons)				
	Ind 1.2.2: Carbon stocks and carbon stock changes in forests land: net forest GHG sink/source of forests, forest carbon stock, carbon storage in harvested wood products (tons)				
1.3	***Target 1.3: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally***				
	Ind: 1.3.1: Progress towards sustainable forest management				
1.4	***Target 1.4: The resilience and adaptive capacity of all types of forests to natural disasters and the impact of climate change is significantly strengthened worldwide***				

---

[1] Based on the Global Forest Resources Assessment 2015.

No.	GOAL/TARGETS AND INDICATORS	TYPE OF DATA AVAILABLE			
	Ind1.4.1: Forest health and vitality: % of forest area disturbed (e.g. Insects, diseases, severe weather, fire, others)				

No.	GOAL/TARGETS AND INDICATORS	TYPE OF DATA AVAILABLE			
Global Forest Goal 2	**Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people.**	QUALITATIVE DATA	QUANTITATIVE DATA	Lead Institution	Contact Person
2.1	*Target 2.1 Extreme poverty for all forest dependent people is eradicated*				
	Ind. 2.1.1 Percentage change in the number of forest dependent people or livelihoods of forest dependent people				
2.2	*Target 2.2 Increase the access of small-scale forest enterprises, in particular in developing countries, to financial services, including affordable credit and their integration into value chains and markets*				
	Ind. 2.2.1 Proportion of small scale-industries in total value added industry				
	Ind. 2.2.2 Proportion of small-scale industries with a loan or line credit				
2.3	*Target 2.3 Contribution of forests and trees to food security is significantly increased*				
	Ind 2.3.1 Availability of and access to land to forest food				
	Ind2.3.2 Forest related income providing access to food				
	Ind 2.3.3 Contribution of forests ecosystems to food production				
	Ind 2.3.4 Average income of small-scale food producers, by sex and indigenous status				
2.4	*Target 2.4 The contribution of forest industry, other forest-based enterprises and forest ecosystem services, among others, is significantly increased*				

	Ind 2.4.1 Indicator to be developed: use the measure of the contribution of forestry sector to national economy (e.g. employment etc)				
2.5	***The contribution of all types of forests to biodiversity conservation and climate change mitigation and adaptation is enhanced, taking into account the mandates and ongoing work of relevant conventions and instruments***				
	Ind 2.5.1 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystems type				
	Ind 2.5.2 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011 -2020				

Global Forest Goal 3	**Increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests.**				
	TARGET AND ASSOCIATED INDICATORS	QUALITATIVE	QUANTITATIVE	Lead Institution	Contact
3.1	*Target 3.1 The area of forests worldwide designated as protected areas or conserved through other effective area-based conservation measures is significantly increased*				
	Ind 3.1.1 Proportion of forest area located within legally established protected areas (%)				
3.2	*Target 3.2 The area of forests under long-term forest management plans is significantly increased*				
	Ind 3.2.1 Proportion of forest area under a long term forest management plan (%)				
3.3	*Target 3.3 The proportion of forest products from sustainably managed forests is significantly increased*				
	Ind 3.3.1 Global production and trade of forest products				

APPENDIX I CONT'D

Global Forest Goal 4	**Mobilize significantly increased, new and additional financial resources from all sources for the implementation of sustainable forest management and strengthen scientific and technical cooperation and partnership**				
	TARGETS	**QUALITATIVE**	**QUANTITATIVE**	**LEAD INST**	**CONTACT**
4.1	Target 4.1: Mobilize significantly resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation				
4.2	Target 4.2: Forest-related financing from all sources at all levels, including public (national, bilateral, multilateral and triangular) private and philanthropic financing is significantly increased				
4.3	Target 4.3: North-south, south-south, north-north and triangular cooperation and public-private partnerships on science, technology and innovation in the forest sector are significantly enhanced and increased				
4.4	Target 4.4: The number of countries which have developed and implemented forest financing strategies and have access to financing from all sources is significantly increased				
4.5	Target 4.5: The collection, availability and accessibility of forest-related information is improved through for example, multi-disciplinary scientific assessments				

Global Forest Goal 5	Promote governance frameworks to implement sustainable forest management including through the UN Forest Instrument, and enhance the contribution of forests to the 2030 Agenda				
	TARGETS	**QUALITATIVE**	**QUANTITATIVE**	**LEAD INST**	**CONTACT**
5.1	Target 5.1: Number of countries which have integrated forests into their national sustainable development plans and/or poverty reduction strategies is significantly increased				
5.2	Target 5.2: Forest law enforcement and governance are enhanced, including through significantly strengthening national and subnational forest authorities and illegal logging and associated trade s significantly reduced worldwide				
5.3	Target 5.3: National and subnational forest-related policies and programs are coherent, coordinated and complimentary across ministries, departments, and authorities, consistent with national laws and engage relevant stakeholders, local communities and indigenous peoples fully recognizing the UN Declaration on Rights of Indigenous Peoples.				
5.4	Target 5.4: Forest-related issues and forest sector are fully integrated into decision-making processes concerning land use planning and development				

No	GLOBAL FOREST GOAL AND ASSOCIATED TARGETS	TYPE OF DATA AVAILABLE			
Global Forest Goal 6	**Enhance cooperation, coordination, coherence and synergies on forest-related issues at all levels, including within the UN System and across the CPF member organizations, as well as across sectors and relevant stakeholders**				
	TARGETS	**QUANTITATIVE**	QUALITATIVE	LEAD INSTI	**CONTACT**
6.3	Target 6.3: Cross-sectoral coordination and cooperation to promote sustainable forest management and halt deforestation and forest degradation are significantly enhanced at all levels				
6.4	Target 6.4: A greater common understanding of concepts of sustainable forest management is achieved and an associated set of indicators is identified				
6.5	Target 6.5: The input and involvement of major groups and other relevant stakeholders in the implementation of strategic plan and in the work of the Forum, including intersessional work, is strengthened				

APPENDIX II

NATIONAL DEVELOPMENT AGENDA-GHANA SHARED GROWTH AND DEVELOPMENT AGENDA

FOCAL AREA	SELECTED INDICATORS	GLOBAL FOREST GOALS AND TARGETS	GAPS IDENTIFIED
Accelerated agricultural modernization and sustainable natural resources management	Rate of loss of biodiversity	Target 3.1, 3.2 of Goal 3	**No quantifiable data available to measure progress. No method of assessment**
	Stock of biological diversity	Target 3.1, 3.2 of Goal 3	Quantified taxa is it adequate?
	Percentage of degraded area within areas under protection	Target 1.3	No indication or target to measure This could be obtained under land cover change
	Number of recorded infractions Law enforcement	Target 3.1, 3.2 of Goal 3	**Quantified (20%) How to measure?**
	Total number of protected area staff	Target 3.1, 3.2 of Goal 3	Quantified
	Percentage of compliance with annual allowable cut	Target 3.1, 3.2 of Goal 3	Quantifiable
	Hectares of degraded forest restored	Target 1.3 of Goal 1;	Quantifiable
	Volume and value of wood and timber products per regional market	Target 2.2 and 2.4 of Goal 2	Quantifiable investment in forest enterprises
	Rate of deforestation	Target 1.3 of Goal 1	Quantifiable
NB :		Target 1.2 of Goal 1 and Target 2.4 of Goal 2	**No indication of contribution to food security, poverty reduction and Payment for ecosystem services**

APPENDIX III

NATIONAL FOREST PROGRAMME- FORESTRY SECTOR MASTER DEVELOPMENT PLAN

FOCAL AREA	SELECTED INDICATORS	GLOBAL FOREST TARGETS	IDENTIFIED GAPS
1. To sustainably manage and enhance the ecological integrity of Ghana's forest, savannah, wetlands and other ecosystems for the preservation of vital soil and water resources, conservation of biological diversity and enhancing carbon stocks for sustainable production of domestic and commercial produce.	Development of management plans	Target 1.3 of Goal 1 and Target 3.1, 3.2 of Goal 3	Quantifiable
	Enhanced conservation	Target 1.3 and 1.4 of Goal 1	**No indication on enhancement**
	Natural regeneration in degraded areas	Target 1.1, 1.2, 1.3, 1.4 of Goal 1	Quantifiable
	Enhancement of ecosystem services	Target 1.2, 1.4 of Goal 1 and Target 2.5 of Goal 2	**No framework for assessment of values accounting 2.5.2**
	Creation of livelihood options	Target 2.1 of Goal 2	**No indication of how to assess this**
	Resource tenure	Target 2.3 of Goal 2	
	Benefit-sharing	Target 2.3 of Goal 2	
2. To promote the rehabilitation and restoration of degraded landscapes through forest plantation development, enrichment planting and community forestry informed by appropriate land-use practices to enhance environmental quality and sustain the supply of raw materials for domestic and industrial consumption and for environmental protection.	Area restored	Target 1.1 and 1.3, 1.4 of Goal 1	Quantifiable
	Ha of plantation established	Target 1.1 and 1.3 of Goal 1; Target 2.5 of Goal 2	
	Carbon stocks sequestrated	Target 1.2 of Goal 1	Quantifiable
	Livelihood and income generation options created	Target 2.1 of Goal 2	Quantifiable
	Food production	Target 2.3 of Goal 2	Quantifiable
	Supply of forest goods and services	Target 2.4 and 2.5 of Goal 2	**No integration of biodiversity values into national accounting system**
FOCAL AREA	Selected Indicators		Gaps Identified
3.To promote the development of viable forest and wildlife based industries and livelihoods, particularly in the value added procession of forest and wildlife resources that satisfy domestic and international demand for competitive-priced quality products.	Supply of and access to forest products and services	Target 2.1, 2.2 and 2.5 of Goal 2	**No means of quantifying ecosystem services**
	Availability of technology support for the industries to enhance quality management and competitiveness	Target 2.2., 2.3, 2.4 of Goal 2 and Target 3.3 of Goal 3, Target 4.3 and 4.4 of Goal 4	
	Value addition to forest resources	Target 2.2 of Goal 2	
	Access to credit and market	Target 2.2 of Goal 2 and Target 4.1, 4.2 of Goal 4	
4. To promote and develop mechanisms for transparent governance, equity sharing and citizens' participation in forest and wildlife resource management.	Establishment of functional forest forums	Target 5.2, 5.3, 5.4 of Goal 5; Target 6.5 of Goal 6	
	Granting of ownership rights	Target 2.1, 2.3, 2.4 of Goal 2	
	Capacity building	Target 2.1, 2.2, 2.3, 2.4 of Goal 2	
	Women and youth participation in forest related income generations ventures	Target 2.1, 2.3 of Goal 2 and Target 5.3 of Goal 5	**No indication on number of people**
	Increase resource availability to communities	Target 2.1, 2.3 and 2.4 of Goal 2	**No indication of measuring resource availability**

43

NATIONAL FOREST PROGRAMME-GHANA FORESTRY DEVELOPMENT MASTER PLAN

FOCAL AREA	SELECTED INDICATORS	GLOBAL FOREST GOALS	GAPS IDENTIFIED
5. To promote training, research and technology-led management and utilization of the forest resources to ensure sustainability, economic growth and environmental stability whilst promoting information uptake from both the forestry institutions and the general public.	Establishment of scientific forums for knowledge sharing	Target 4.5 of Goal 4, Target 5.2 of Goal5 and Target 6.5 of Goal 6.	
	Capacity building for natural resource accounting	Target 2.5.2 of Goal 2	No indication on capacity available for natural resource accounting
	Certification of forest products	Target 3.3 of Goal 3 and 4.5 of Goal 4.	
	Enhancement of value addition through research and technology	Target 2.2 of Goal 2 and 4.5 of Goal 4	
6. Promote the development of financing mechanism for natural forest and wildlife management, timber plantation development, plant and machinery, development of tertiary processing activities, wood-fuel processing and micro/small forest based enterprises.	Establishment of trust funds to provide grants to local communities	Target 2.1, 2.2, 2.4 of Goal 2	
	Enhance private sector investment in sustainable forest management	Target 2.1, 2.2, 2.4 of Goal 2	No indicator to measure investment
	Assistance to private sector to mobilize investment funding	Target 4.1, 4.2 of Goal 4	No indicator to measure private sector investment

NATIONAL FOREST PROGRAMME-OTHER FOREST PROGRAMMES

FOCAL AREA	SELECTED INDICATORS		GAPS IDENTIFIED
Ghana REDD+ Strategy 2016	Forest area restored	Target 1.1.1, 1.2.1, 1.2.2, 1.3.1 of Goal 1	
	Emission reduction	Target 1.1, 1.2.2 and 1.3 of Goal 1	
	Carbon stocks enhanced	Target 1.2.1, of Goal 1	
	Income and livelihood options created	Target 2.1, 2.3, 2.4 of Goal 2	No indicator on income and livelihood created
National Forest Plantation Development Strategy	Expansion in forest area	Target 1.1.1, 1.2.1, 1.2.2, 1.3.1 of Goal 1	
	Carbon stock enhancement	Target 1.2.1, of Goal 1	
	Income generation for forest dependent people	Target 2.1, 2.3, 2.4 of Goal 2	No indicator on income of forest dependent people
	Food production	Target 2.3 of Goal 2	No indicator for food production
Forest Law Enforcement , Governance and Trade (FLEGT-VPA)	Wood tracking system	Target 5.2 of Goal 5,	
	Field audit verification system	Target 5.2 of Goal 5	
	Reduction in illegal trade	Target 5.2 of Goal 5	No indication on how to establish level of reduction of illegalities
	Stakeholder involvement	Target 5.3, 5.4 of Goal 5	
FOCAL AREA	**SELECTED INDICATORS**	**GLOBAL FOREST GOAL TARGET**	**GAPS IDENTIFIED**
Ghana Forest Investment Programme (GFIP)	Number of people in forest communities with increased monetary or non-monetary benefits	Target 2.1 of Goal 2	Quantifiable
	Area under improved CREMA and climate smart cocoa	Target 1.1, 1.2, 1.3 and 1.4 of Goal 1	Quantifiable
	Area of different forest cover	Target 1.1 and 1.3 of Goal 1	Quantifiable
	Total greenhouse emission reduction	Target 1.2.2 of Goal 1	Quantifiable
	Carbon stocks enhanced	Target 1.2.1 of Goal 1	Quantifiable
	Direct project beneficiaries (number) including women	Target 2.1.1 of Goal 2	Quantifiable

LIST OF PARTICIPANTS FOR LIMITED GROUP WORKSHOP UNFF NATIONAL REPORTING, 11 JANUARY, 2018

No	NAME	INSTITUTION
1	Kwadwo Owusu Afriyie, Chief Executive,	Forestry Commission, Accra
2	Dennis Osei-Hwere, Director, Legal Unit,	Forestry Commission, Accra
3	Musa Abu-Juam, Technical Director	Ministry of Lands and Natural Resources, Accra
4	Joseph Osiakwan, UNFF National Focal Point	Ministry of Lands and Natural Resources, Accra
5	Oppon Sasu, Executive Director	Forest Services Division, Forestry Commission Accra
6	Nana Kofi Adu-Nsiah, Executive Director,	Wildlife Division , Forestry Commission, Accra
7	Dr. John Appah, Manager, Plantations Unit	Forest Services Division, Forestry Commission, Accra,
8	Cudjoe Awudi, Ag. Director,	Corporate Planning, Monitoring and Evaluation, Forestry Commission, Accra.
9	Dr. Mark Dadibo, Manager,	Corporate Planning, Monitoring and Evaluation, Forestry Commission, Accra.
10	Hugh Brown, Director, Plantations, Unit	Forest Services Division, Forestry Commission, Accra
11	Michael Painstil, Manager	Forest Services Division, Forestry Commission, Accra
12	Safo Adu, Manager for Donor Liaison Unit	Forest Services Division, Forestry Commission, Accra
13	Anto Nyan, Manager,	Timber Industry Division, Forestry Commission, Accra
14	Luri Kanton, Manager, Operations	Wildlife Division, Forestry Commission, Accra
15	Thomas Gyambrah, Manager	Climate Change Unit, Forestry Commission, Accra
16	Kofi Affum-Baffour, Manager	Resource Management Support Center, Forestry Commission, Accra
17	Alex Asare, Manager	Resource Management Support Center, Forestry Commission, Accra
18	Edith Abruquah, Director of Operations, FSD,	Forest Service Division, Forestry Commission, Accra
19	Kwame Adjei, Plantations, Manager	Forest Service Division, Forestry Commission, Accra
20	David Kpelle, Coordinator, UN Forest Instrument,	Wildlife Division, Forestry Commission, Accra
21	Dr. Richard Gyimah, Manager	Timber Validation Dept, Forestry Commission, Accra

No	NAME	INSTITUTION
1	Musa Abu-Juam, Technical Director	Ministry Lands Natural Resources, Accra
2	Joseph Osiakwan, UNFF National Focal Point	Ministry Lands Natural Resources, Accra
3	Oppon Sasu, Executive Director	Forest Services Division, Forestry Commission, Accra
4	Dennis Osei-Hwere, Director,	Legal Unit, Forestry Commission, Accra
5	Edith Abruquah, (Mrs.)Director of Operations,	Forest Services Division, Forestry Commission, Accra
6	Cudjoe Awudi, Ag. Director	Corporate Planning Monitor & Evaluation, Forestry Commission, Accra
7	Valerie Fummey-Nassah (Mrs), Manager	Resource Management Support Center, Kumasi
8	Gordon Sarfo-Adu, Manager	Donor Liaison, Forestry Commission, Accra
9	Luri Kanton, Manager, Operations	Wildlife Division, Forestry Commission, Accra
10	Thomas Gyambrah, Manager	Climate Change Unit, Forestry Commission, Accra
11	Alex Asare, Manager	Resource Management Support Center, Forestry Commission, Accra
12	Kwame Adjei, Manager Plantations	Forest Services Division, Forestry Commission, Accra
13	Dr. Stepehn Adu- Bredu, Principal Scientist	Council for Scientific and Industrial Research, CSIR, Kumasi
14	Dorcas G. Owusu (Mrs), Manager	IUCN, Accra
15	Dr. Roland Abrahams,	Water Resources Commission, Koforidua
16	Alex K. Dadzie, Chief Executive	Ghana Timber Organization, Kumasi
17	Yaw Osei-Owusu, Executive Director,	Conservation Alliance, Accra
18	Francis Bright Mensah	Ghana Statistical Service, GSS, Accra
19	Kingsley Amoako	Ministry of Food and Agriculture (MOFA), Accra
20	Tomasz Juszczak, Forest Officer	UNFF Secretariat, New York, USA
21	David Kpelle, Coordinator,	UN Forest Instrument, Forestry Commission, Accra