PAGE PARTNERSHIP FOR ACTION ON GREEN ECONOMY

GHANA'S TRANSITION TO A GREEN ECONOMY: A STOCKTAKING REPORT

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EXECUTIVE SUMMARY

Green Economy (GE) is the pathway to achieving sustainable development in contemporary times, especially in developing economies such as Ghana. The GE concept entails a paradigm shift in contemporary development thinking, contrasting the dangers posed by the unsustainable approaches to development in the past decades. Practically, it involves changes in production, consumption and lifestyle towards economic activities that use natural resources efficiently, enhance and preserve environmental quality, and remove social inequalities. Hence, it is not uncommon to have several operational definitions of GE at the national level, since the national contexts shape the priorities and goals regarding the sectors to green. Although Ghana has no current official definition of GE, the concept finds space in the country as most of Ghana's development priorities are in harmony with the concept's key objectives.

Ghana has abundant natural resources (gold, diamond, bauxite, timber, cocoa, biodiversity, fertile agricultural land and renewable natural resources such as sunshine, wind, waste and biomass) with great potential for the attainment of sustainable development. Ghana's inability to take full advantage of these resources has contributed to high unemployment and poverty rates, energy crises and inadequate funding to finance its developmental projects. In recent years, the macroeconomic and environmental indicators' trends in Ghana have been nosediving. GDP declined from 15 percent in 2011, to 7.9 percent in 2012, and further plummeted to 5.4 percent in 2013, mainly due to the poor performance of the non-oil real sector. On the environmental front, Ghana has experienced one of the highest deforestation rates (2 percent per annum) in the world, with a corresponding high cost of environmental degradation, which is estimated at 10 percent of GDP. Waste generation and management are among the most serious environmental challenges facing the nation, with about 30 percent of total wastes generated not being disposed of properly every year. Within the social dimension of the country, the health sector paints a more positive picture, with life expectancy, infant and maternal mortality and specialised birth attendants all improved in recent years. Poverty, on the other hand, has declined from 51.7 percent in 1991/1992 to 24.2 percent in 2013.

Notwithstanding these socio-economic challenges, there exist abundant policy documents with the right potentials for greening Ghana's economy. These, together with the right measures of monitoring, evaluation and implementation, can propel Ghana into becoming a green economy state. These policies can be broadly identified under four sub-headings: developmental policies, environmental policies, industrial policies and energy policies. The Ghana Shared Growth and Developmental Agenda II, aims at attaining "a stable, united, inclusive and prosperous country with opportunities for all" by "leveraging Ghana's natural resources endowments, agricultural potentials and the human resource base for accelerated economic growth and job creation through value addition". With respect to the environmental policies' landscape, there exist fundamental policies such as the National Climate Change Policy, National Environmental Policy, Environmental Fiscal Reform Policy, National Climate Change Adaptation Strategy and many others that are embedded within green economy initiatives. The National Climate Change Policy, as an example, seeks to ensure a climate-resilient and climate-compatible economy while achieving sustainable development through equitable low-carbon economic growth. Ghana's industrial policy, an important example of industrial policies, aims at increasing competitiveness and enhancing industrial production with increased employment and prosperity for all Ghanaians. The Renewable Energy Act, aims at providing the enabling environment for the "development, utilization, sustainability and adequate supply of renewable energy for generation of heat and power" in Ghana.

Several programmes and projects, having green economy initiatives embedded in them, have either been completed, are ongoing, or are scheduled to take place in Ghana. Missing, however, is an inventory of proper records of such programmes/projects that takes count of green initiatives that have been implemented in the country by various institutions. This stocktaking exercise revealed that at least 26 major programmes/projects, which have green elements and are in synch with PAGE, have either been implemented or are taking place in the country. These have been classified under the following sub-headings: industrial greening supportive programmes/projects; climate change supportive programmes/projects; capacity building supportive initiatives; welfare supportive programmes/projects; and financing supportive programmes/projects. It was also realised that programmes such as capacity building and climate change initiatives have been intensively implemented while others such as welfare and financing supportive programmes are under-developed. Despite these outcomes, it is evident from the stocktaking exercise that all programmes and projects have elements that are in synch with PAGE objectives and can boost GE transition in the country. Some programmes, including UNEP-GE Sequence, Switch Africa Green, Green Climate Fund (GCF), and Sustaining Competitive and Responsible Enterprise (SCORE), pursue activities directly in the realm of green economy, while activities under other projects and programmes can be supported to shore up GE transition in the country.

This stocktaking reveals several gaps that need remedy if Ghana's transition to GE is to be achieved. Despite the relatively abundant statistics on agricultural sector, there are numerous deficiencies as far as their suitability for GE modeling is concerned. Statistics on relevant indicators such as agricultural water demand, proportion of agricultural products that go from the farm gate to the consumer; and dynamics in usage of agricultural lands, which are needed for simulating analysis, are either not available or are missing for most years. Targeted policy costs are also lacking and, thereby undermining the power of using modeling techniques such as T21 to make an elaborate simulation within the sector and at the macro level. On the energy front, owing to the close interlinkages with other sectors of the economy, if the current trajectory of energy generation and consumption continues, these could greatly affect macro-economic and sectorial indicators. On the environment dimension, the country lacks critical data needed for planning green economy activities. Statistics on waste generation and recycling, water, industrial and mining pollutions, forest and land degradations are either non-existent or are incomplete for several years. Despite these challenges there are currently no survey plans for green economy data collection at the national level.

For Ghana to transition into a green economy nation, there is therefore the need for a multi-institutionalized stakeholder group, comprising of key players and stakeholders from all sectors and political inclinations to compose a GE transition Action plan that will be implemented by all sectors in the country. This process will ensure that GE issues are not only well understood by different sector players, but political parties will see the need to mainstream the GE dimensions into their respective manifestoes. The GE transition action plan should be segregated into different phases, each having clear distinct objectives with timelines, sources of resources and allocations, and assigned implementing and monitoring agencies for different programmes and activities.

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ACRONYMS

AGI	Association of Ghana Industries
BAU	Business as Usual
BTBSG	Biogas Technology and Business for Sustainable Growth
CBEPCD	Capacity building for the elimination of Polychlorinated Biphenyls
CCRCFCUDP	Climate Change Risk Communications Framework for Coastal Urban Development Policy
CGSSCRETT	China Ghana South-South Cooperation on Renewable Energy Technology Transfer
COAST	Collaborative Actions for Sustainable Tourism Project
CSIR	Center for Scientific and Industrial Research
CSOs	Civil Society Organisations
DANIDA	Danish International Development Agency
EC	Energy Commission
EETRAM	Energy Efficiency and Transformation of the Refrigerating Appliances Market
ESPCP	Environmental Sustainability and Policy for Cocoa Production in Ghana
EU	European Union
FiT	Feed-in-Tariff
GCF	Green Climate Fund
GCIC	Ghana Climate Innovation Centre Ghana
GDP	Gross Domestic Product
GE	Green Economy
GEA	Ghana Employers Association
GEBR	Green Economy in Biosphere Reserve
GEBSS	Graduate Entrepreneurial and Business Support Scheme
GFZA	Ghana Free Zone Authority
GHG	Green House Gases
GIPC	Ghana Investment Promotion Center
GNLCD	Ghana National Low Carbon Development
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GYEEDA	Ghana Youth Employment and Entrepreneurial Development Agency
HIPC	Highly Indebted Poor Countries
ILO	International Labour Organization
ISICCNDP	Institutional support to integrate climate change into national development plans
KETEP	Korea Institute of Energy Technology Evaluation and Planning
KOICA	Korean International Cooperation Agency
LECBP	Low Emission Capacity Building Programme
LIPW	Labour Intensive Public Works
MESTI	Ministry of Environment, Science, Technology and Innovation
MLNR	Ministry of Lands and Natural resources
MMDAs	Metropolitan, Municipal and District Assemblies
MoE	Ministry of Energy

MoTI	Ministry of Trade and Industries
MOTIE	Ministry of Trade, Industry and Energy
MTF	Marrakech Task Force
NCCAS	National Climate Change Adaptation Strategy
NCCP	National Climate Change Policy
NEP	Ghana's National Environmental Policy
NES	National Export Strategy
NGOs	Non-Governmental Organisations
NREGP	Natural Resources and Environmental Governance Programme
NWP	National Water Policy
ODS	Ozone Depleting Substances
PEF	Private Enterprise Federation
PFI	World Press Freedom Index
PPPs	Public Private Partnerships
PSDS	Ghana Private Sector Development Strategy
PURC	Public Utility and Regulatory Commission
PwC	PricewaterhouseCoopers
RETs	Renewable Energy Technologies
SAG	Switch African Green
SBF	Sustainable Business Forum
SCORE	Sustaining Competitive and Responsible Enterprise
SDOC	Support for Development and Operation of COCOBOD's Ghana Cocoa Platform
SE4ALL	Sustainable Energy for All
SECO	State Secretariat for Economic Affairs
SEP	Solar Export Potential
SMEs	Small and Micro Enterprises
SPP	Sustainable Public Procurement
SVCEG	Improving Sustainable Value Chains for Exports from Ghana
T21	Threshold 21
TEC	The Energy Center
TUC	Trade Union Congress
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
WRC	Water Resources Commission
YACCM	Youth in Action on Climate Change Mitigation

1 INTRODUCTION AND BACKGROUND

1.1 The concept of a green economy

The Green Economy (GE) concept entails a paradigm shift in contemporary development thinking, taking into account the dangers posed by the unsustainable approaches to development in the past decades. The United Nations Environment Programme (UNEP) defines a GE as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It underscores low carbon emission, resource-efficient and socially-inclusive economy.

Practically, GE requires a great change in production and consumption or lifestyles towards economic activities that enhance and preserve environmental quality, coupled with efficient use of natural resources; and reduce social inequalities. At the operational level, in a GE, growth in income and employment is driven by investments that reduce carbon emissions and pollution; enhance energy and resource efficiency; prevent loss of biodiversity and ecosystem services; and reduce unemployment and poverty, especially among the poorest segments of society. The approach is based on sound economic analysis of current trends, risks and opportunities, as well as on taking stock of national experiences in applying more integrated policy tools, effectively. On the backdrop of the unique economic structure of every country, it is not uncommon to have several operational definitions of the GE at the national level, since the national contexts shape the priorities and goals regarding the sectors to green.

At the national level, there isn't an official definition of GE for Ghana. However, most of the country's development priorities are in harmony with the key objectives of the GE concept. For instance, even the obsolete Ghana-Vision 2020 document aimed at achieving a balanced economy and a middle-income country status and high standard of living, comparable to Singapore's. The national development strategy is also based on five key themes: human development; economic growth; rural development; urban development; and an enabling environment. Similarly, the just ended Medium-Term National Development Policy Framework: Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013 (2010) had seven important themes: sustaining macroeconomic stability; enhanced competitiveness of the private sector; accelerated agricultural growth and natural resource management; oil and gas development; infrastructure, energy and human settlements development; human development, employment and productivity; and transparent and accountable governance . Besides, economic development, poverty reduction, social justice and equity, and environmental sustainability have been some of the fundamental goals of past and present governments of Ghana. Strong alignment of the next medium-term development plans as well as various sectoral policies with GE provisions will leverage the country to develop sustainably, taking into account the oil revenue as well as the green growth opportunities implicit in the current energy and sanitation challenges.

To aid in the realization of green economy transition in Ghana, five UN agencies – the International Labour Organization (ILO), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO), and the United Nations Institute for Training and Research (UNITAR) have established a corporation with the Government of Ghana regarding this endeavor. The five UN agencies aim to mobilise social awareness and provide specialized training aimed at identifying critical bottlenecks, formulating and assessing policy options, and enabling policy implementation for greening the economy in Ghana.

1.2 Objectives of the study

Commissioned in October 2014 for a 3-months[1] period, the main objectives of the stocktaking are:

(1) To assess all ongoing green economy related activities in the country with a view to complementing PAGE (e.g. SWITCH Africa, etc.);

(2) To provide the basis for further (quantitative) work leading to the eventual adoption of policy options, especially in light of recently adopted new development plans and policies in the country; and

(3) To provide an overview of the main entry points for PAGE support, in terms of policies, processes, and institutional mechanisms for policy dialogue.

1.3 Study Methodology

Two main methodological approaches were used for this study: desk review of existing literature; and questionnaire administration. First and foremost the stocktaking exercise kick-started with an extensive review of all print and online documents on policies, programmes and projects in the country in order to assess their linkages to green economy. This review work was followed by the construction of questions based on gaps that were identified and were submitted to the relevant institutions that needed to respond to them (see Appendix 1). The questions assessed broadly the implementation status of various policies, successes, challenges and the nature of data for green economy activities. Supporting these two methodologies is a national validation workshop that took place on the 1st September 2015 (see Appendix 2 for participants' list). This workshop offered all stakeholders that were consulted during the data collection phase as well as other key stakeholders, the opportunity to interrogate the draft report. Comments and amendments raised during this workshop were garnered and have eventually helped in shaping this current final report.

1.4 Outline of study

This report is structured into five chapters. Following this introductory chapter, chapter 2 focuses on Ghana's main challenges and opportunities for a green economy transition. Within the chapter, the macro-economic, social and environmental profiles of the country are discussed. In addition, chapter two contains a review of the constituents of relevant policies needed for GE transition in the country as well as their level of progress and challenges based on documents and stakeholders' inputs. Chapter three covers the mapping of all past and existing programmes and projects that either embody the features of GE or can help propel its actualization in Ghana. Chapter four encapsulates the identification of the country assessment needs; while chapter five covers the conclusion and recommendations to this report.

[1] ISSER was commissioned to undertake the PAGE stocktaking exercise from October to December 2014. Thus, all pieces of information in this document precede 2015 and should be treated as such.

2 GHANA'S MAIN CHALLENGES AND OPPORTUNITIES FOR A GREEN ECONOMY TRANSITION

2.0 Introduction

In the midst of abundant natural resources (such as Gold, diamond, bauxite, timber, cocoa, biodiversity, fertile agricultural land among others) with great potential for overturning her fortunes, Ghana currently experiences unemployment, poverty and inadequate funding to finance its developmental projects. Added to these is the nation's inability to tap into its renewable natural resources such as sunshine, rainfall, wind, waste and biomass, which could help address its current energy crisis and further create sustainable/green jobs to reduce unemployment. These observations are attributable to low human capacity development, inadequate implementation of policies, lack of locally generated funds to tap into these resources (NDPC 2014).

The chapter is structured into four parts. The first focuses on the macro-economic, environmental footprint and social profiles of the country. Following that is a review of the constituents of relevant policies needed for GE transition in the country as well as their level of progress and challenges based on documents and stakeholders' inputs. The mapping of key players needed for the GE transition constitutes the third part, while part four is a review of the recent studies and assessments in Ghana.

2.1 MACRO-ECONOMIC PROFILE

Ghana attained a lower middle income status in 2011. The 2011 GDP growth rate was one of the highest in the nation's history, recording a growth rate of 14.4 percent (ISSER 2012, UNEP 2013) with a value of US$39.2 billion. The GDP growth rate in 2011 was about four times the world average of 3.8 percent (CIA World fact book 2013) and was highly associated with the commercial extraction of oil and gas in the country. Political stability, good governance and traditional exports were other factors that led to this growth miracle (UNEP 2013). GDP growth rate used to oscillate between 3 percent and 8 percent until the advent of the commercial oil extraction in 2011 in which a double digit growth rate was recorded. An average growth rate of 5 percent was recorded between the years 1990 to 2010 (MoF 2014, ISSER 2013). Beyond 2011, however, GDP growth rate has been declining. In 2012 GDP was estimated to be 7.9 percent and further dipped to 5.4 percent in 2013.

Before 2011, major contributors to GDP were from the minerals, cocoa, timber and non-traditional export sectors. Minerals (gold, bauxite, diamond and manganese) are the major export earnings of the country (Figure 1). In 2012 minerals accounted for about 43 percent of merchandise export and contributed to 8.8 percent of GDP growth. These contributions slightly dipped in 2013, where they accounted for 37.6 percent merchandise export and 7.9 percent GDP growth (Ghana Chamber of Mines 2013, GSS 2013). Within the minerals sector gold is the major export earner, accounting for about 97 percent of total mineral export earnings (ISSER 2013). Earnings from gold in 2012 for instance was US$5,309 million dollars, as against bauxite, diamond and manganese which were US$28.5 million, US$11.16 million and US$98.61 million respectively (Chamber of Mines 2013).

Cocoa is the second highest contributor to export earnings in the country (Figure 1.1), accounting for about 20.9 percent of total merchandise export in 2012 and 16.5 percent in 2013 (ISSER 2014). Cocoa accounted for about 8.2 percent of agricultural GDP (MoFA 2011) and 3.2 percent to total GDP (GSS, 2013) in 2010. About 599,318 metric tonnes of cocoa beans were exported in 2005 and this increased to a value of 903,646 metric tonnes in 2010 (MoFA 2011). This

observation was associated with increment in earnings. Earnings from cocoa were estimated to be US$1,544.4m, US$ 2,870.8m, US$2,828.6m in 2010, 2011 and 2012 respectively (ISSER 2013). Timber is the least contributor to export earnings and, accounted for 1.3 percent, 1.0 percent and 1.2 percent of merchandise export earnings in 2011, 2012 and 2013 respectively (ISSER 2014).

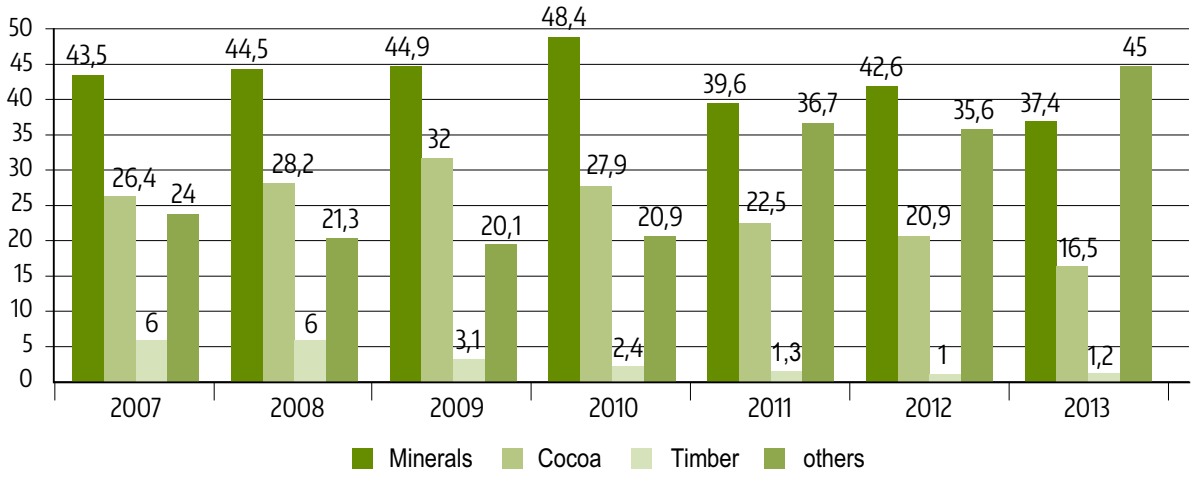
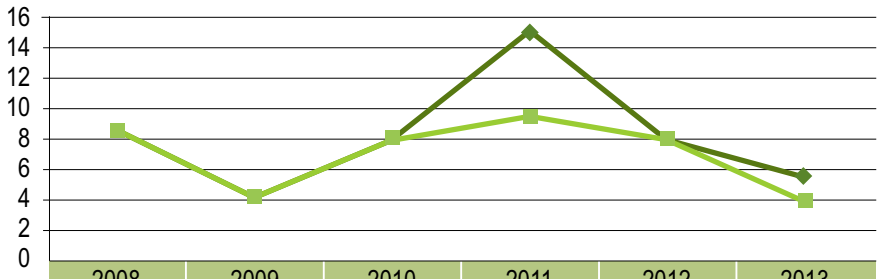


Figure 1.1: Commodities' Contributions to Export Earnings
(ISSER 2011, ISSER 2014)

The contributions of minerals and cocoa to total exports were altered in 2011 with Ghana becoming an oil production nation. Crude oil exports in 2012 accounted for 21.06 percent of the total export receipts. Those of gold, cocoa and timber were 38.03 percent, 20.9 percent and 1.0 percent respectively. This significantly altered the contributions of the main driver of export earnings. Owing to the large attention given to the oil production, it is predicted that the contributions of traditional exports will fall over the years most especially, in the case of timber (KPMG 2013). The estimated percentage changes are: 34.71 percent for gold, 20.45 percent for cocoa, 0.95 percent for timber and 22.73 percent for oil by the end of 2014.

Oil is a significant determinant of Ghana's economic growth. In 2011, out of the total growth rate of 15 percent, oil production accounted for 5.1 percent, representing about 34 percent of the total GDP. This was very significant as it contributed to the elevation of Ghana into the lower middle income nation. This impressive performance of the oil sector was however, unsustainable in subsequent years. In 2012, the contribution of oil to GDP declined from 5.1 to 0.1 percent, representing only 2 percent contribution to GDP. However, in 2013, there was a slight improvement in the sector's contribution to GDP, as it accounted for about 1.5 percent (Figure 1.2).



	2008	2009	2010	2011	2012	2013
real GDP Growth Rate	8,4	4	8	15	7,9	5,4
real Non-Oil GDP Growth Rate	8,4	4	8	9,4	7,8	3,9

Figure 1.2: Trends in Real GDP and Non-Oil Growth Rates
(ISSER 2014)

Ghana faces a lot of trade and fiscal deficits despite its impressive growth in GDP in 2011. Since 1990 the lowest trade deficit was recorded in 1992 with a value of 1.39 million Ghana Cedis with 2012 recording the highest trade deficit of 11.8 million Ghana Cedis (MoF 2014). Reasons attributed to the rising debt include the high importation of foreign products especially, oil to meet the local demands (UNEP 2013).

Overreliance on external partners with low domestic savings in financing developmental projects is another challenge the nation faces. Until 2009 grants were relatively equal to domestic savings as a result of macro-economic recovery from the Highly Indebted Poor Countries (HIPC) dilemma and as such the country depended on donor supports for its development (NDPC 2005). Beyond 2009, however, domestic savings have been on the rise to support government developmental initiatives (Figure 1.3). The rising domestic savings versus the decline in grants led to the country's attainment of the middle income status by the country (ISSER 2014).

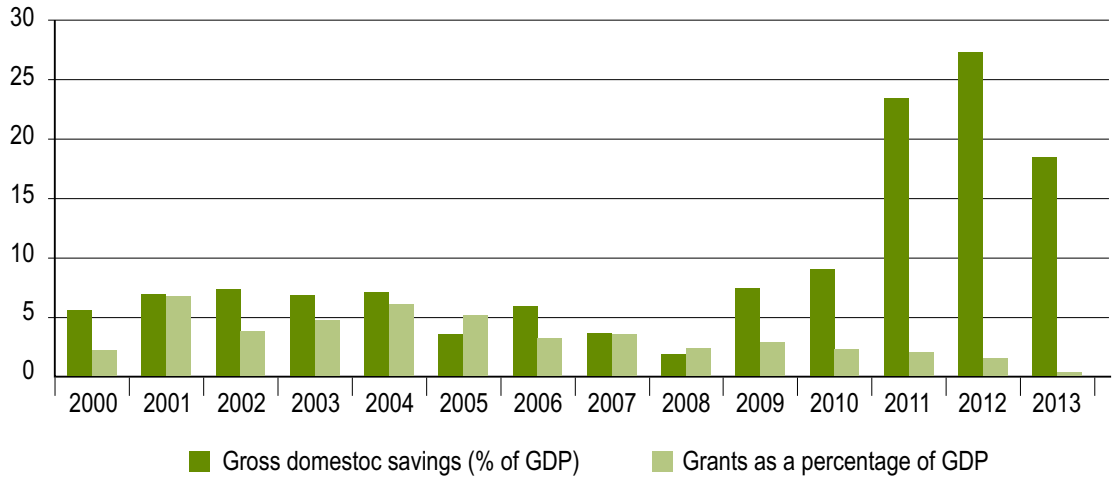


Figure 1.3: Relationship between Grants and Domestic Savings as Percentages of GDP
(WDI, ISSER 2014, ISSER 2011, ISSER 2005)

Until 2006, Ghana's economy was largely driven by the agricultural sector with GDP contribution oscillating between 36.3 percent and 48.8 percent (MoF 2014) (Figure 1.4). In recent years, however,

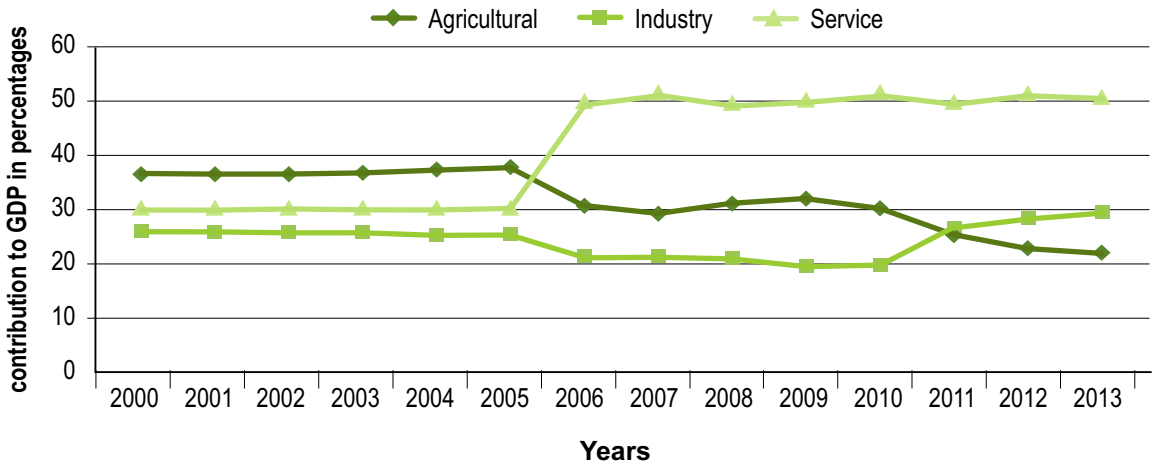


Figure 1.4: Contribution of Sectors to GDP in Percentages
(ISSER 2006, ISSER 2014)

whiles contribution from the agricultural sector to GDP keeps declining those of the service and the industry keep increasing. In 2006 for instance the service sector became the lead contributor to GDP, accounting for 48.8 percent, while agriculture and industry contributed 30.4 percent and 20.8 percent respectively. The information and communication sub-sectors were the drivers behind the service sector's performance (UNEP 2013). These trends in respect of the contribution to GDP were observed until 2011 when both the service (48.5%) and industry (25.9%) outperformed the agricultural sector (25.6%) (UNEP 2013).

The shift from an agricultural-led to a service-led economy, altered the number of employment per sector, although not immediately. In 2006 when the economy was taken over by the service sector, agriculture was still the highest employing sector, accounting for about 60 percent of total labour force whiles the service and industry accounted for the remaining 40 percent (Figure 1.5). However, in 2010 the service sector became the lead employer of the labour force, employing 43.1 percent of the total labour force, whiles the agriculture and the industrial sectors employed 41.5 percent and 15.4 percent respectively (World Bank Data). Industry has been the least employing sector of the economy over the years even though its share of labour force has generally been increasing.

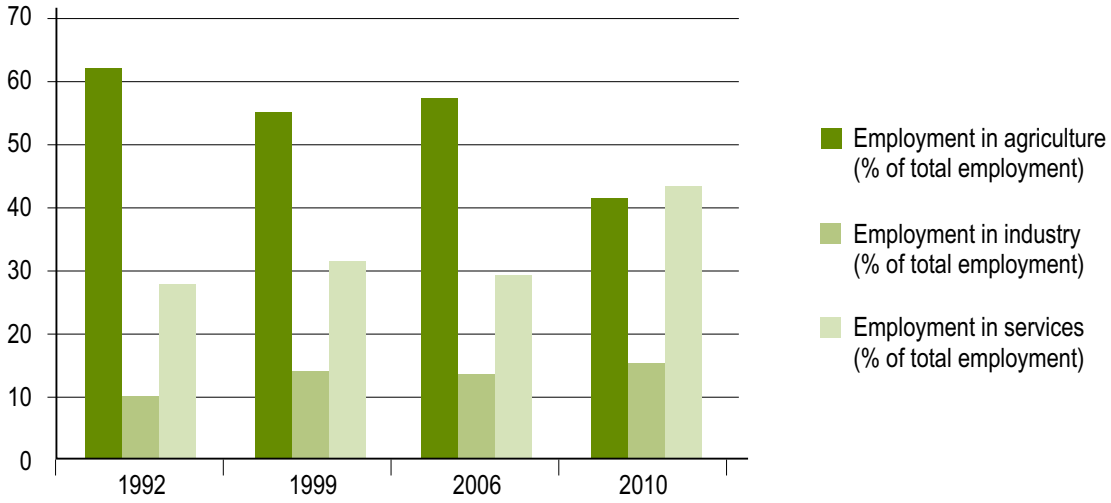


Figure 1.5: Employment by Sectors of the Economy
(WDI)

Ghana's economic active population has remained relatively steady over the years. In 2000 about 77 percent of the adult population (15 years plus) was estimated to be economically active, of which 80.7 percent were employed, 6.7 percent unemployed whiles the remaining were either schooling or sick/disable (GSS 2000). These findings also emerged in 2008 and 2012/2013. In 2008 of every 10 adult populations at least seven were economically active of which 3.6 percent were not employed. This was highly pronounced in urban areas (6.3%) than in rural areas (1.6%) (GSS 2008). Also in 2012/2013 economically active population group was estimated to be 75.7 percent and saw a decline in unemployment rate to be 2.3 percent. Unemployment was, however, much pronounced in females (3.0%) than in males (2.1%) (GSS 2014).

2.2 ENVIRONMENTAL FOOTPRINT

Ghana is endowed with abundant natural resources. These include minerals, forests, biodiversity, and freshwater. Despite the notable contribution of forest products especially, timber to Ghana's foreign earnings over the years, Ghana's forests have suffered from heavy degradation and deforestation mainly as a result of human activities including, illegal logging, burning and illegal mining activities. In mitigation, between 2000 and 2010 there have been mitigation interventions to improve and expand forest cover. Nevertheless, during this period Ghana experienced a net deforestation rate of 0.81 percent of total land surface (FC 2013]. In addition, the cost of environmental degradation ranks as one of the highest in the world, roughly 10 per cent of GDP (UNEP-Ghana 2013].

As previously noted, Ghana is also endowed with significant mineral resources, notably gold, manganese, bauxite and diamonds. While such minerals represent major contributors to the country's foreign exchange earnings, their extraction endangers both the environment and the health of human beings. Extractive operations comprising predominantly of illegal mining, account for 5 per cent of Ghana's forest degradation (MLNR 2012). Mining pollutants have risen in recent years (Figure 2.1). This is attributable not only to the growing number of investors, but also the rise in illegal mining activities (MLNR 2012).

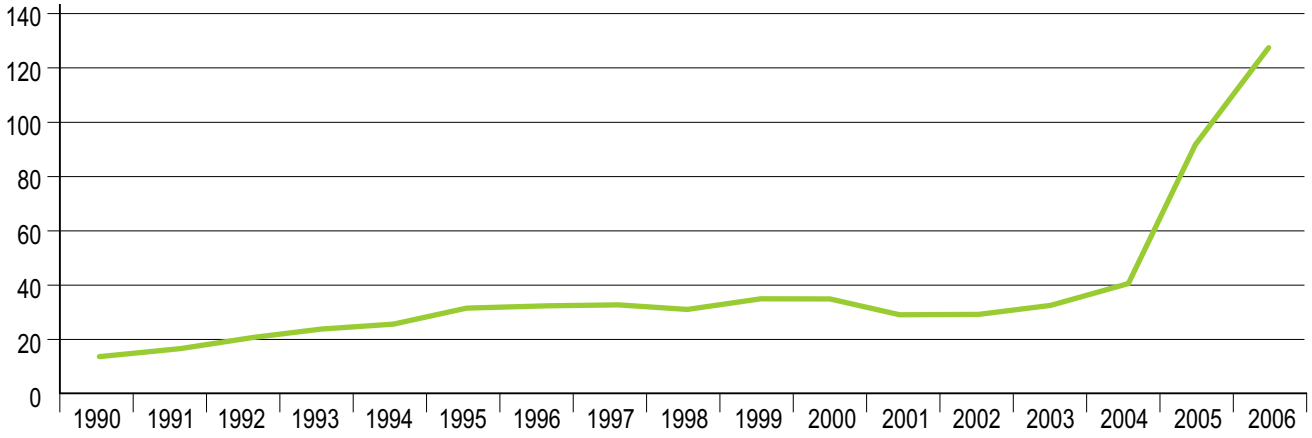


Figure 2.1: Emissions from extractive activities in Ghana in $GgCO_2e$
(EPA 2011)

Ghana has abundant water resources and with multiple uses. Nevertheless, water resources have come under heavy threat of pollution from domestic, agricultural, and industrial activities. Studies have revealed that the concentration of pollutants in some water bodies in the country, including the Oti, Densu and Angaw Rivers, are alarmingly high as they have exceeded the World Health Organisation's (WHO) recommended levels for fecal coliform counts; total coliforms; turbidity; total iron; color; and manganese in particular, making them unsafe for domestic purposes without any form of treatment (ISSER 2012 "Ghana Social Development Outlook 2012" University of Ghana-ISSER).

A key environmental challenge for Ghana is waste generation, comprising predominantly non-degradable elements (polythene bags, electronic products, bottles)(UNEP-Ghana 2013). About 3.3 million tonnes of waste is estimated to be generated annually (EPA 2011). In 2009, 2010, and 2011 70 per cent, 75 per cent and 77 per cent respectively of total waste generated were disposed of properly (NDPC 2013). However, this leaves 30 per cent that have not been managed correctly.

While the allocation of government expenditure for environmental management increased in absolute terms, its share to GDP declined. More specifically, allocations to the Ministry of Lands and Natural

Resources (MLNR) and the Ministry of Environment, Science, Technology and Innovation (MESTI) declined as a share of GDP in 2013 to 0.43 per cent compared to the 2011 provision of 0.49 per cent (MESTI 2014, MLNR 20112-2014). Table 2.1 presents public annual expenditure on the country's environment as compiled by the Ghana Statistical Service. While public expenditure on the environment has been declining, private sector expenditure on environmental issues has also been lacking (UNEP-Ghana 2013).

Table 2.1: Public sector's annual expenditure on the environment in Ghana between 2006 and 2010 (in US$ million)
(Ghana Statistical Service's compilation of various ministries' yearly actual expenditure on the environment, 2006-2010.)

Year	Ministry of Food and Agricultural	Ministry of Water, Resources, Work and Housing	Ministry of Energy	Ministry of Lands and Natural Resources	Ministry of Environment, Science and Technology	Ministry of Local Government	Total
2006	1.11	8.87	0.02	3.57	0.83	5.71	19.95
2007	1.10	21.30	0*	3.90	6.33	1.80	33.43
2008	0.22	28.42	0*	7.86	4.24	37.03	77.77
2009	0*	40.44	0*	6.85	0*	0*	47.29
2010	0*	32.52	0*	5.46	0*	0*	37.98

* No data received from that ministery

2.3 SOCIAL PROFILE

Ghana's population stood at 24,658,823 in 2010; 51.2% female and 48.8% male. Population growth rate was estimated at 2.5 per cent in 2010, a slight decline from the 2000 estimate of 2.7 per cent. The 2010 population and housing census further illustrated population dynamics by locality. Regions such as Greater Accra (16.3 per cent) and Ashanti (19.4 per cent) had the highest population share, while Upper East (4.2 per cent) and Upper West (2.8 per cent) recorded the lowest.

Ghana has made a significant effort in reducing poverty and income inequality over the years. The 1991/1992 poverty estimate of 51.7 per cent was almost halved by 2005/2006 to 28.59 per cent. This further declined to 24.2 per cent in 2013 (GSS 2014), UNEP-Ghana 2013), representing Ghana's attainment of the first Millennium Development Goal (1a) of halving extreme poverty by 2015. Despite such poverty reductions, income inequality remains high across regions and between social groups (NDPC 2014). The 2005/2006 income inequality estimate of 41.9 per cent increased slightly to 42.3 per cent in 2012/2013, with rural areas facing much higher inequality than urban areas (GSS 2014). For instance, the 37.8 per cent income inequality estimate for rural areas in 2005/2006 increased to 40.0 per cent in 2012/2013, in contrast, the 38.3 per cent estimate for urban areas in 2005/2006 rose slightly to 38.8 per cent in 2012/2013. In Ghana, underemployment is a far more pressing socio-economic issue than unemployment. It affects all age groups, unlike unemployment, which is more of a youthful phenomenon (GSS 2008). Underemployment is estimated to be twice that of unemployment (7.3 per cent to 3.6 per cent respectively) in the labour market (GSS 2008).

Health indicators have improved over the years. Births attended by specialists have increased from 50.2 per cent in 2000 and to 58.5 per cent in 2011 (MoH 2014). Infant mortality has declined from 57 to 31 per 1000 live births from 1993 to 2008. Maternal mortality has also dropped by 27.9 per cent between 1990 and 2013 (MoH 2014). Furthermore, average life expectancy has increased over the years, from the 1993 estimate of 55.7 years to 60 years in 2008, this continued to rise to 61.8 years in 2012 (MoH 2010, GSS 2013). The literacy rate has gradually improved adult literacy (Figure 2.2) with males dominating (GSS 2008).

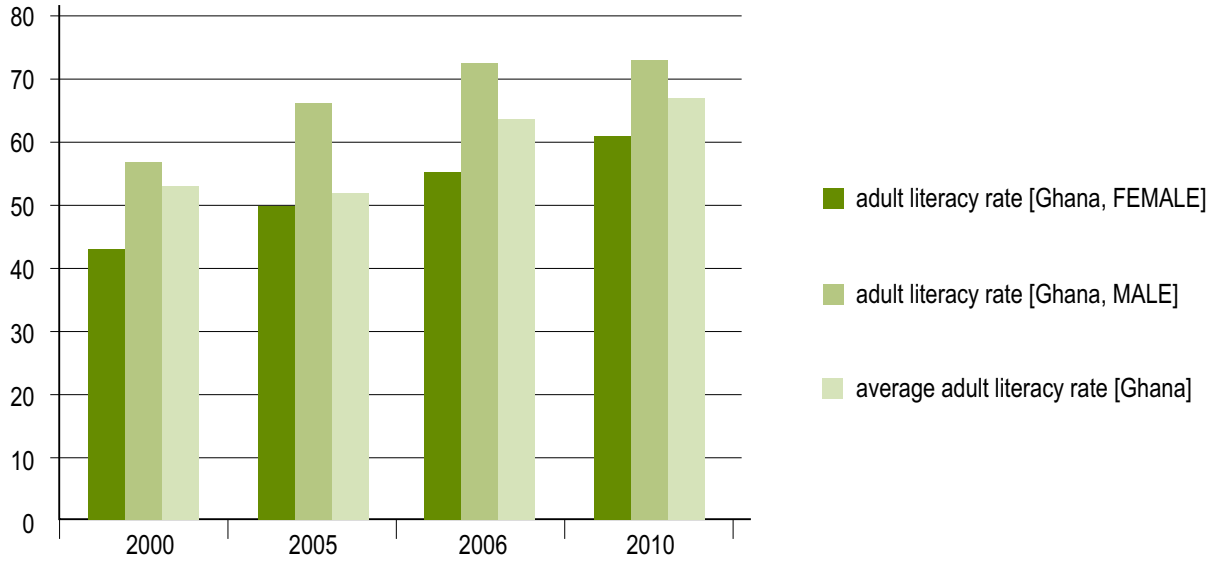


Figure 2.2: Adult Literacy Rate by Gender
(GSS compiled data, 2014)

2.4 REVIEW OF RELEVANT POLICIES, PROCESSES AND INSTITUTIONAL MECHANISMS

This sub-section reviews relevant policies, processes and institutional mechanisms needed for GE transition. This is carried out under the following sub-headings: development policies, environment policies, industrial policies, energy policies and water policies for easy identification of government's commitment in promoting the adoption of green economy initiatives in Ghana. Policies' implementation status with regards to their level of achievements and challenges were sourced from documents and stakeholders inputs. Appendix 1 contains the list of institutions and corresponding stakeholders that made inputs regarding the progress and challenges of the policies reviewed.

2.4.1 Development Policies

2.4.1.1 Ghana Shared Growth and Development Agenda (GSGDA, 2010-2013)

Since independence, all successive governments (both military and constitutional) in Ghana have embarked on various programmes aimed at improving the growth of the economy as well as enhancing the living standards of the people. All of these programmes have not been entirely successful; with some achieving more of their core objectives than others.

With Ghana aiming at becoming a middle-income country by the year 2020, the Government presented the Coordinated Programme of Economic and Social Development Policies to Parliament in 1995 under the theme Ghana: Vision 2020. This programme (Vision 2020) is, however, obsolete and has been replaced by the rolling Medium-term Development plans, namely; The First Medium-Term Development Plan (1997-2000), Ghana Poverty Reduction Strategy (GPRS I, 2003-2005), the Growth and Poverty Reduction Strategy (GPRS II, 2006-2009) and more recently, the Ghana Shared Growth and Development Agenda One (GSGDA I, 2010-2013).

The GSGDA I outlined the development policies and strategies that guided the management of the economy between 2010 and 2013. Its framework aimed at ensuring human development, transparent and accountable governance and infrastructural development, in support of agricultural modernisation, natural resource development, particularly oil and gas, private sector development, ICT, housing and energy for accelerated employment creation and income generation for poverty reduction with the following thematic areas: ensuring and sustaining macroeconomic stability; enhanced competitiveness of Ghana's private sector; accelerated agricultural modernisation and sustainable natural resource management; oil and gas development; infrastructure and human settlements development; human development, employment and productivity; and transparent and accountable governance.

Progress and Challenges to the Implementation of GSGDA

- A review of the GSGDA implementation reveals that while progress has been achieved, it is not uniform across the various thematic areas. Under the macroeconomic context, the economy experienced a real GDP growth of about 7.9% in 2012 with a corresponding per capita income increasing from US$1,563 in 2011 to US$1,570 in 2012 compared vis-à-vis the target of US$1,478.10 under the GSGDA. The GDP growth in 2012 was driven mainly by the strong performance in the services sector, which recorded an average growth rate of 10.2%. This shift towards the services sector has adverse implications on employment in the economy since offers less employment opportunities compared to agriculture. By the end of 2012, the overall fiscal balance recorded an increase in deficit from -4% of GDP in 2011 to -11% of GDP in 2012. The gross public debt increased from 34.4% of GDP in 2011 to 49.25% of GDP in 2012 and the country's gross international reserves declined from a stock position of US$5,382.8 million at the end of December 2011 to US$5,349.0 million at the end of December 2012.
- The overall performance of the macroeconomic thematic area in 2012 shows moderate improvements in most of the key indicators. The competitiveness of the private sector environment to support the growth of the sector has shown stagnation in some key indicators, especially, the Micro, Small and Medium-Scale Enterprises endeavor remains slows and has not changed. Though the share of industry to GDP continued to increase on account of oil inflows, the share of manufacturing sector in overall GDP has stagnated since 2009. The main challenges facing the competitiveness of Ghana's private sector include low industry specific skills that continue to lag behind international standards at all levels, labour markets inefficiencies and the low ICT adoption rates.
- There were some improvements in the accelerated agricultural modernisation and sustainable natural resource management thematic area. Overall, Ghana continued to be self-sufficient in food production as total production available for human consumption exceeded estimated national demand in 2012. This notwithstanding, the output of more than half of the major staple crops recorded a decline. Similarly, the volume and value of exported selected agricultural commodities, excluding cocoa, recorded a decline in 2012 and the growth rate in the production of the various livestock species slowed down in 2012, whereas the total domestic fish production recorded an increase in the year. On the other hand, benefits from mineral production, mineral contribution to total merchandise exports as well as total employment generated by the sector, all improved in 2012. However, the cost of environmental degradation as a percentage of GDP continued to be high.
- The oil and gas development thematic area also witnessed some improvements by the end of 2012. Oil production, for instance, increased from an average of 67,398.04 barrels per day in 2011 to about 71,997.03 barrels a day in 2012 corresponding to an increase in the share of oil in mining and quarrying, in real terms, from 64.9% in 2011 to 67.4% in 2012. In order to ensure that Ghanaians get enough benefits from the Oil sector, the draft legislation on Local Content and Participation in Petroleum activities has been forwarded to Parliament for passage into law.

- The infrastructure and human settlements development thematic area saw little improvement by the end of 2012. Road transport continues to form the majority of transport supply in the country, but has improved minimally over the past three years. The ICT sector in the country however continues to expand with the growth rate of the sector increasing from 17% in 2011 to 23.4% in 2012. In terms of energy, biomass continues to be the main sources of energy in the country. Overall, biomass in the form of charcoal and firewood constitute the majority of energy consumption by Ghanaians. By 2012, 72% of the population had access to electricity even though only 198MW energy was added to the existing generating capacity. The number of districts benefiting from improved water services increased from 145 in 2011 to 171 in 2012 despite the decline in the proportion of urban dwellers with access to safe water. By the end of 2011, only 16% of the Ghanaian population had access to improved sanitation. Public housing infrastructure has still not improved with the government's Affordable Housing Programme yet to take off. The human development, productivity and employment thematic area also witnessed some improvement after the implementation of the GSGDA, 2010-2013. Overall, Ghana is making progress towards achieving 100% Gross Enrolment Ratio (GER) by 2015 even though primary school GER has stagnated since the 2010/11 academic year. The Gender Parity Index (GPI) has also stagnated at most levels of education in the country with the continual decline of females' participation in tertiary education.
- Finally, the country made some progress in the transparent and accountable governance thematic area especially, in the area of democratic governance. Similarly, there are continuous efforts aimed at enhancing the financial capacity of Metropolitan, Municipal and District Assemblies (MMDAs) to implement policies, programmes and projects at the local level. In terms of development communication, the 2012 World Press Freedom Index (PFI) showed Ghana improving its ranking and the key national anti-corruption institutions continued to perform their statutory functions in 2012. Also, there are continuous efforts to improve women participation in political governance despite the slow progress. Besides, there is the incessant effort to improve the capacity of the Judiciary to efficiently dispense justice and ensure rule of law even though the judiciary is still facing numerous challenges in the country.

Notwithstanding these achievements, the policy lacks adequate funding and human expertise; coupled with interference from both political and traditional leaders.

2.4.1.1 Ghana Shared Growth and Development Agenda (GSGDA II, 2014-2016)

The GSGDA II is developed to build upon GSGDA I and further corrects the bottlenecks that hindered the full actualization of the objectives of the GSGDA I. This medium-term development is built on the context that the attainment of a middle income status of the country and commercial exploitation of oil and gas during the implementation of GSGDAI did create the expected results of poverty reduction among segments of the society, job creations and infrastructure investments. GSGDA II therefore envisions to attaining "a stable, united, inclusive and prosperous country with opportunities for all" through "leveraging Ghana's natural resources endowments, agricultural potentials and the human resource base for accelerated economic growth and job creation through value addition". Implementation of the policy is pegged on four pillars: Human development, productivity and employment; Ensuring and sustaining macroeconomic stability, enhancing competitiveness of Ghana's private sector and accelerated agricultural modernization and sustainable natural resource management; Infrastructure and Human settlement development, as well as oil and gas development; and transparent and accountable governance.

Green initiatives identified in the policy include government desires in accelerating agricultural transformation and sustainable natural resource management in the country. The acceleration of agricultural transformation is identified to be very crucial in the realization of the medium-term goal of the policy owning to its availability of opportunities such as food security, import substitution, raw materials for industries, manufacturing and export. This initiative is noted to be very beneficial and sustainable since it will help uplift rural economy and further reduce poverty. This initiative is a resounding commitment of government by using ist agricultural sector to attain a fleshy medium income as enshrined in the long term policy document. Policy interventions for this initiative include: improvement of agricultural production; exploit opportunities in the sector for accelerated job creation; enhancement of the competiveness of the sector and ensure its integration into the domestic and international markets; and reduce the risks and bottlenecks associated with the agricultural sector.

Progress and Challenges to the Implementation of GSGDA II

The GSGDA II is yet to be implemented, hence the assessment of its progress and challenges are not applicable.

2.4.2 Environmental Policies

2.4.2.1 National Climate Change Policy (NCCP 2013)

The National Climate Change Policy (NCCP) (2013) of Ghana seeks to "ensure a climate-resilient and climate-compatible economy while achieving sustainable development through equitable low-carbon economic growth". Government desires taking advantage of every opportunity while at the same time addressing all effects on climate change on the economy. This is to be done through effective adaptation, social development and mitigation. The effective adaptation and mitigation measures focus on energy and infrastructure; natural resources and management; agriculture and food security; and disaster preparedness and response. However, the social development measure seeks achieving a coherent equitable and integrated society.

The policy has strategies targeting the protection of vital sectors such as the agricultural, forestry and energy sectors of the economy and which are also vulnerable to climate change. Owning to the importance of these sectors to Ghana's economy, government has made the mitigation of climate change a developmental issue whose guiding principles will be in line with all national policies and national statutes. Such guiding principles include the polluter pays principle, to serve as a disincentive to uncontrolled discharges of emissions into the environment; the principle of required action; the principle of delivering the greatest common good to society when prioritizing conflicting responses to climate change; the principle of improving equity and gender sensitivity; the principle of solidarity, and expressing profound human response for common problems related to climate change.

Progress and Challenges to the Implementation of National Climate Change Policy (NCCP)

Even though the implementation of the NCCP strategies is yet to take off, it has made some landmark achievements in the area of sensitization on climate change issues, and organization of workshops to develop a second phase of the policy, which focuses on outlining mechanisms for financing climate change initiatives. Inactiveness of the National Climate Change Committee (NCCC) of Ghana in recent years and lack of funding are some of the banes of the NCCP.

2.4.2.2 National Climate Change Policy (NCCP 2013)

Ghana's National Environmental Policy (NEP) is to help promote economic development in order to be at par with ecological processes. This is to be achieved by improving effectiveness of institutional and legal framework; promoting sustainable resource use and impact management; developing holistic and integrated planning; enhancing participation and coordination in environmental governance; promoting environmental awareness creation and employment; and increasing access and use of environmental information for decision making.

The policy recognizes the need to reinforce other sectoral policies to bring about sustainable development. Within the agricultural sector for instance, the policy is aiming at achieving sustainable and environmentally friendly practices through the adoption of sustainable use of land; regulation of the use of toxic and hazardous chemicals to safeguard human and the environment; and undertaking irrigation projects in an environmentally benign manner especially in the savannah areas. Within the transport sector the policy is also aiming at achieving a sustainable transport system; preservation of the natural environment by minimizing emissions, reducing and managing transport waste in order to increase the quality of life. On waste management the policy focuses on contributing to the reduction and management of waste generation especially at the urban areas; promote the adoption of waste-to-energy practices; control the importation of obsolete materials that serve as hazardous waste while encouraging the adoption of affordable and appropriate technologies in waste management.

Progress and Challenges to the Implementation of National Climate Change Policy (NCCP)

Strategic Action Plans and Monitoring and Evaluation Plans are far advanced but not fully developed and, capacity building on environmental issues at the community and institutional levels are some achievements made since the policy enactment. The policy, however, is over-dependent on donors for support and as such lacks adequate financing schemes needed for running ist projects.

2.4.2.3 Ghana Environmental Fiscal Reform Policy (2013)

The environmental fiscal reform policy of Ghana seeks to support sustainable development, environmental protection, climate change and green principles and policies. It complements existing environmental and climate change policies in the country by offering more robust measures on preserving and promoting a clean environment. It does this by addressing waste management; deforestation and biodiversity; land degradation as a result of mining activities; vehicular, industrial and energy emissions. The policy is underpinned by environmental scarcity, the need to control negative externalities and efficient utilization of resources by incorporating polluter pays principle, user pays principle, the prevention principle, and the precautionary principle. The policy contributes to:

- Modifying taxes and public expenditure such that sustainable development, environmental protection, climate change and green economy principles are appropriately considered;
- Shifting tax bases and burdens away from conventional taxes, for example taxes on economic goods such as labour, investment and consumption, to environmentally damaging activities, such as the use of natural resource or pollution, in order to provide appropriate incentives to consumers and producers;
- Reforming subsidies which are harmful to the environment.

Progress and Challenges to the Implementation of the Environment Fiscal Reform Policy

The policy is yet to be submitted for approval by the legislative body; hence an evaluation of its success is inapplicable. High level of bureaucracy within government institutions has led to the delay in this policy legislative approval.

2.4.2.4 National Climate Change Adaptation Strategy (NCCAS)

The main goal of the NCCAS is to "enhance Ghana's current and future development to climate change impacts by strengthening its adaptive capacity and building resilience of the society and ecosystems". This is ran on five sub-objectives with segmented sets of strategic policies and programmes targeting at different climate change sensitive areas such as energy, agricultural, health, land, fisheries, and water. The five objectives include:

- Improvement in societal awareness and preparedness for future climate change;
- Enhancement in the mainstreaming of climate change into national development to reduce climate change risks;
- Increment in the robustness of infrastructure development and long-term investments;
- Enhancement in the adaptability of vulnerable ecological and social systems by increasing the flexibility and resilience of these systems;
- Fostering competitiveness and promote technological innovation

In relation to targeting climate issues at the agricultural sector, the NCCAS seeks to promote capacity building of local farmers who are most vulnerable to climate change effects in order to increase their output and further create awareness about the negative footprints of climate change. It also aims to promote agricultural biodiversity to preserve the environment and cultivation of climate change resistance crops and animals as a form of mitigation practices at the agricultural sub-sector. Within the energy sector, NCCAS aims to reduce the contribution of the sector's greenhouse emissions by promoting the use of off-grid alternative energy resources which are different from the conventional source, and also to promote efficient utilization of energy. In relation to the water sector the NCCAS seeks to conserve and preserve water resources in the country in order to be safe for domestic, industrial, agricultural and commercial uses.

Progress and Challenges to the Implementation of the NCCAS

The Strategic Action Plan has been developed, but yet to be approved by parliament; Monitoring and Evaluation Plans are far advanced in its development; while capacity building plans have been initiated at the district levels after the enactment of the policy. The policy, however, suffers from delay in funding, over-dependent on donor supports, pursuing of personal interest by some institutions in the development of the strategic action plans.

2.4.2.5 Sanitation Policy (2007)

The revised Sanitation Policy (2010) of Ghana seeks to contribute to the development and maintenance of a clean, safe and pleasant physical and natural environment in order to promote socio-cultural, economic and physical well-being of all sections of the society in Ghana. Just like the Ghana environmental fiscal reform policy, the sanitation policy is built on key principles such as polluter pays and precautionary principles.

Progress and Challenges to the Implementation of the Sanitation Policy

Achievements regarding the sanitation policy include the establishment of national sanitation day, increase in private sector involvement in waste management; construction of Kpone landfill sites; and the upgrading of the School of Hygiene into a University status. The policy, however, suffers from lack of political commitment, inadequate resources to finance projects and inadequate capacity of MMDAs to implement effectively ist provisions.

2.4.3 Industrial Policies

2.4.3.1 Industrial Policy

The central focus of the Industrial policy of Ghana is to increase competitiveness and enhance industrial production with increased employment and prosperity for all Ghanaians. In addition, it seeks to help make Ghana's products and services more competitive at the global level; consumed more within the domestic market and address the challenges confronting industries in respect of raw material needs. This policy is in alignment with other existing policies such as the trade policy. This alignment is to help accelerate industrial development through the provision of stable environment that are consistent with underlying principles of the private sector development.

Strategies earmarked to underpin the success of this policy include: expansion of productive employment in the manufacturing sector; expansion of technological capacity in the manufacturing sector and the promotion of modern and efficient machinery and technology; promotion of agro-based industrial development; and the promotion of proper spatial distribution of industries. Other pro-low carbon development measures outlined in the policy are, regulating the importation of over-aged machinery except where associate technology is right; and the deployment of state-of-the-art plants and machinery in industries. On water and electricity efficiency and management in industries, the policy proposes the initiation of energy and water efficiency and conservation programmes to be implemented within industries. To promote environmental sustainability in the midst of encouraging higher productivity, green initiatives such as the adoption of clean production technologies and improved manufacturing processes; implementation of programmes that promote efficient usage of raw materials, energy and water in industries; and strengthening of the capacity of regulatory bodies for enforcement of environmental regulations are greatly considered by the state and the policy.

Progress and Challenges to the Implementation of the Industrial Policy

There is a challenge in measuring the successes of the policy due to lack of progress in the implementation of activities and programmes, which are spelt out in the policy document. Particularly, the policy faces challenges such as inadequate funding and delay in the release of funds from donors and government; lack of collateral by SMEs to access funds from financial institutions and inability of the agricultural sector to assist in the acquisition of industrial raw materials.

2.4.3.2 National Employment Policy (2012)

The National Employment Policy of Ghana seeks to tackle employment related challenges confronting the labour market including high unemployment and under employment, poor labour statistics and ineffective labour market information; low human resource base; low wages, income and productivity; and loss of productive working time. The following strategies have been outlined in the policy document to achieve ist objectives.

- Integration of employment intensive growth strategies in the country's development plans and programmes including national development plans, sectoral development programmes, the budget statement and financial policies, and introducing special employment intensive schemes.
- Improving labour market information through reforms targeting the structures, systems, processes, human capacity and equipment and logistics which are critical to the effective functioning of institutions involved in the management of labour market information system.
- Accelerating private sector growth, competitiveness and development through the removal of critical bottlenecks.
- Development of micro, small and medium enterprises through the removal of barriers that impede enterprise growth.
- Enhancement of technical and vocational education and training to support employment creation through skills development programmes for the unemployed youth, and skills upgrading for those in employment.
- Promotion of farm and non-farm rural employment through modernisation of agriculture.
- Mainstreaming of vulnerable groups including youth, women and persons with disability in the national development process to increase their productivity and employability.

Progress and Challenges to the Implementation of the Environment Fiscal Reform Policy

The NEP is yet to be approved by Cabinet and Parliament; hence an evaluation of its successes and challenges are inapplicable. However, in anticipation of this policy government is implementing separate interventions which aim at reducing unemployment most especially among the youth. These interventions include:

- Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA) created 45,700 job opportunities in 2014;
- Graduate Entrepreneurial and Business Support Scheme (GEBSS) aims at giving skills and training to young graduates to set up their own business; and
- Block Farming and Maintenance of Agricultural Equipment Modules supported over 60,000 youth in 2013.

2.4.3.3 Ghana National Export Strategy for the Non-Traditional Sector (2012)

The GSGDA I, National Trade Policy, Private Sector Development Strategy II, Ghana Industrial Policy and the Food and Agricultural Sector Development Policy were the influential policies that triggered the formulation of the Ghana National Export Strategy (NES) for the non-traditional sector. The NES seeks to contribute to the development of the "potential of the non-traditional export sector to enable it make maximum contribution to GDP growth and national development". This policy further seeks to contribute to the consolidation and sustainability of Ghana's lower middle income status in order to enhance job creation, poverty reduction, and offer linkages to other parts of the economy.

Progress and Challenges tto the Implementation of the National Export Strategy for the Non-traditional sector

Since this policy enactment a comprehensive action plan spelling out activities needed for the attainment its objectives, has been developed. However, the implementations of programmes listed in the action plan are constrained by lack of funding.

2.4.3.4 Ghana Investment Promotion center Act, 2013 (Act 865)

The Act mandates the Ghana Investment Promotion Center (GIPC) as the sole agency to act on behalf of the government of Ghana to promote investment opportunities in the country. GIPC is to encourage and promote investments through the creation of attractive incentive packages, frameworks and a transparent, predictable, facilitating environment for investments to thrive in Ghana. In order to help achieve the purpose for which it was set, the government mandates the GIPC to undertake the sets of investment related activities that are tied to attracting investors into the country. These include the following:

- Formulation of investment promotion policies and plans, promoting incentives and marketing strategies to attract foreign and local investments in advanced technology industries and skill-intensive services which enjoy good export market prospects.
- Initiate and support measures that will enhance the investment climate in Ghana for both Ghanaian and non-Ghanaian enterprises.
- Collect, collate, analyse and disseminate information about investment opportunities and sources of investment capital, incentives available to investors, the investment climate and advise upon request on the availability, choice or suitability of partners in joint venture projects.

Progress and Challenges to the Implementation of the GIPC Act 865

The policy has contributed to the empowerment of the GIPC and, this has in turn contributed to the attraction of more investors into the country. Despite these gains, however, the GIPC does not fully control the registration of all companies in the country as public institutions such as the Registrar General and the Minerals Commission duplicate its function. These duplications, somehow, underline GIPC efforts of keeping full track of all investors in the country.

2.4.3.5 Ghana Investment Promotion center Act, 2013 (Act 865)

The Ghana Private Sector Development Strategy (PSDS II) intends to address challenges confronting the private sector in Ghana in order to create an enabling environment for private sector to thrive. The PSDSII's main goal is to help transform the Ghanaian economy and widen economic opportunities in which the private sector in Ghana will be globally competitive by 2015 and create several jobs opportunities. The PSDSII seeks to achieve these through encouraging investors to invest in other sectors other than mines, oil, telecommunication and finance services; giving incentives to investors to create more secure and well-paying jobs; and making Ghana an attractive place for local and international entrepreneurs to either start or expand their businesses. To signal government' commitment to the development of the private sector, measures are afoot to reduce the risk of doing business in Ghana, develop road networks, improve the power supply and ICT services, and to encourage banks to be friendly to investors.

Progress and Challenges to the Implementation of Ghana Private Sector Development Strategy II

Just about a year after the formulation of this strategic development plan, it has contributed significantly to Ghana's rank of doing business, improving from94/175 countries in 2006 to 63/183 countries in 2012, while its business competitive index, rose from 114/133 in 2009 to 103/144 in 2014 (NDPC 2014). This was as a result of the impact of the policy to reduce the number of days to register a limited liability company and the number of days spent on resolving commercial disputes in courts. Other achievements include: an establishment of a secretariat to help with its implementation; a reduction in administrative cost and burden of paying taxes by private enterprises; an enactment of the Competition and Consumer Protection policy, which is at its advanced stage of development. These

achievements notwithstanding, the PSDSII is, yet to make significant achievements regarding all its objectives due to lack of political commitment, which affects the flow of the needed resources for implementation of activities. Moreover, there is lack of linkages between reformed initiatives and overall sector development objectives, coupled with ineffective internal coordination of decision-making within some MDAs, thereby leading to implementation responsibility either left to few officers or over-centralized.

2.4.3.6 Public Private Partnerships (PPPs) Policy (2011)

The Public Private Partnerships (PPPs) policy aims at leveraging public resources with private sector resources and expertise in order to close the infrastructure gap and deliver efficient public infrastructure and services through the effective collaboration between the Public and Private entities. The main objectives of the PPPs policy include:

- Leverage public assets and funds with private sector resources from local and international markets to accelerate needed investments in infrastructure and services;
- Encourage and facilitate investment by the private sector by creating an enabling environment for PPs where value for money for government can clearly demonstrated;
- Increase the availability of public infrastructure and services and improve service quality and efficiency of projects;
- Ensure attainment of required and acceptable local and international social and environmental standards;
- Protect the interest of all stakeholders including end users, affected people, government and the private sector;
- Set up efficient and transparent institutional arrangements for the identification, structuring and competitive tendering of PP projects;
- Provide a framework for developing efficient risk sharing mechanisms;
- Encourage and promote indigenous Ghanaian private sector participation in the delivery of public infrastructure and services.

To ensure effective attraction of the private sector the PPPs policy has established some guiding principles such as value for money; risk allocation; ability to pay; local content and technology transfer; environmental, climate and social safeguards; safeguarding public interest and consumer rights.

Progress and Challenges to the Implementation of PPPs

Since its enactment it has contributed to the undertaking of several projects in the country, notably among them are the Tema motorway expansion project, the desalination project at Teshie and the Takoradi Ports expansion. Despite these achievements, the policy has been unable to attract domestic investors, attributable largely to low financial resources and technical expertise of local investors.

2.4.4 Energy Policies

2.4.4.1 National Energy Policy (2009) and National Energy Strategy (2010)

The 2010 National Energy Policy of Ghana envisages developing an energy economy that would guarantee secure and reliable supply of high quality energy services for all sectors of the economy and further contribute significantly to export earnings. The policy covers the broad spectrum of challenges, goals and idiosyncratic issues relating to the key energy sub-sectors and other equally important areas: power; petroleum; renewable energy; waste-to-energy; energy efficiency and conservation; energy and environment; energy and gender; and managing the future of the sector. Fundamental to achieving the main goal of this policy are the following objectives:

- Ensuring energy services are readily available to meet demand at any point in time;
- Making energy services universally accessible through the development of an extensive supply infrastructure;
- Ensuring that energy is produced and supplied in a form that conforms to acceptable international practice with regards to their health and environmental impact;
- Ensuring that energy is used in the most efficient manner; and
- Ensuring energy is produced and supplied at competitive prices (affordable tariffs).

Alongside this policy is, an Energy Sector Strategy and Development Plan to guide the implementation of programmes, projects and activities within the key sub-sectors in order to attain the policy goals. The main strategy within the renewable energy sub-sector is to increase renewable energy (biomass, solar, wind and mini-hydro and waste-to-energy) in the total energy mix (10% by 2020) and ensure its efficient production and use.

Progress and Challenges to the Implementation of the Energy Policy and Energy Sector strategy

In 2013, about 534 megawatts capacity of power was added to the total national power generation under the power Sub-sector (132 MW T3 plant in Aboadze, 400 MW plant at Bui Dam, 2MW Solar plant); increase in the National electrification scheme at the rural areas; procurement of 275 solar streetlights with funding from the Chinese government in 2013. In addition, about 12,105 solar lanterns have been distributed to 44 districts under the kerosene lantern replacement programme; about 2400 old and inefficient refrigerators have been replaced with new and efficient ones; and the advanced gas infrastructure project are some achievements that have been made since the policy implementation. Notwithstanding these, there is too much overreliance on Nigeria gas supply for electricity production, over dependence on conventional energy source; and high level inefficiency in power management in the country.

2.4.4.2 Renewable Energy Act (Act 832) (2013)

The Renewable Energy Act (Act 832) is the legislative instrument that provides the enabling environment for the "development, utilization, sustainability and adequate supply of renewable energy for generation of heat and power" in Ghana. The act contributes to the promotion of the usage of renewable energy, improving access to electricity, diversification of energy supplies to safeguard energy security.

The Act has helped in the establishment of the Feed-in-Tariff (FiT) law for RETs in Ghana. The FiT scheme has the following components: renewable energy purchase obligation; FiT rates; and a connection to transmission and distribution systems. Under the renewable purchase obligation scheme, there is a commitment by the state to achieve the desire penetration rate of renewables in the energy systems through ensuring that any electricity purchased by distribution utility or bulk customer shall have specified percentage of renewable energy sources. The FiT rates have been set by the Public Utility and Regulatory Commission (PURC).

The Act offers an opportunity to help raise funds to finance its objectives through the establishment of the renewable energy fund, with its various sources of funding: monies approved by parliament; donations, grants and gifts received for renewable energy activities; internally generated funds by the Energy Commission (EC) through the provision of services for renewable energy activities; and proportion of government levy from the export of biofuel as approved by parliament.

Progress and Challenges to the Implementation of the Renewable Energy Act

Since the passage of the Act, the RE Grid codes for transmission and distribution networks, Net-Metering Code for connecting RE systems to distribution networks and Feed-in-Tariffs have been developed; licensing has been granted to both private and public institutions for development of RETs; and institutional capacity building for testing RETs such as Solar PVs and efficient cook stoves have also been achieved through technical support from UNDP-Ghana and GEDAP. Despite these gains in enhancing RETs development, there is a long delay in setting up the RE fund to finance RET developments and the Net-Metering system is not in operation.

2.4.5 Water Policies

2.4.5.1 National Water Policy (NWP) (2007)

The goal of the National Water Policy in Ghana is aimed at "achieving sustainable development, management and use of Ghana's water resources to improve health and livelihoods, reduce vulnerability while assuring good governance for present and future generation". The policy contains elaborative strategies to achieve series of objectives under the water resource management, urban water supply, and community water and sanitation. Under the water resources management, the policy aims at achieving sustainable management of water resources; equitable sustainable exploitation, utilization and management of water resources, while maintaining biodiversity and the quality of the environment for future generations. Policy actions include the following:

- Ensure water resources planning is made with due recognition of "environmental flow" requirements;
- Adoption of sustainable practices that avoid damage to critical natural capital and irreversible ecological processes;
- Promotion of partnerships between the public and private sectors for the protection and conservation of water resources through the use of cleaner and efficient technologies, effective waste management and sound land management and agricultural practices;
- Ensure cost recovery and sustainability of water projects, taking into account the specific needs and preferences of the poor.

For the urban water supply the policy focuses on improving water access at the urban areas, promoting hygiene education, eliminating environmental sanitation challenges and to have a public private partnership in the provision of portable safe water to meet the growing urban population. At the community level the policy further aims at providing portable water and sanitation services to small and rural communities by decentralizing such services in order to fully reach out to the point of demand.

Progress and Challenges to the Implementation of the National Water Policy

The policy has contributed to the development of legislative instruments such as the Water Abstraction Regulations and Groundwater Permits Regulation to back the policy statements. It has also significantly contributed to the development of sub policies such as the National Buffer Zone Policy; Rainwater Harvesting Strategy/Policy; and National Dam Safety Policy and strategy documents including, the Groundwater Management Strategy and Communication Strategy to aid the fostering of the achievement of the policy objectives. It has also helped develop a Water Quality Index for measuring water quality and further contributed to the establishments of River Basin Boards to oversee to the Densu, White Volta, Ankobra, Pra, Tano, and Black Volta water bodies.

Despites these gains, the policy suffers from conflict of ownership on water resources from traditional rulers, state institutions and local assemblies; reluctance on the part of state institutions such as Volta River Authority to forgo their "control" over water bodies that used to be under their ambit; delays at the initial implementation stages of the policy owning to state bureaucracies; and inadequate skilled staff and resources for effective discharge of duties at the Water Resources Commission (WRC).

2.5 MAPPING OF KEY PLAYERS

This section presents a summary of fundamental institutional players including their mandate and institutional mechanisms that are regarded as critical elements for the attainment of a transition into GE in Ghana (Table 2.2).

Table 2.2 Key Institutional Players for a Transition to Green Economy

Government

Institutions	Mandate	Institutional mechanism
Ministry of Energy and Petroleum	To monitor and evaluate policies, programmes and projects within the energy sector.	Ghana energy policy 2010
Energy Commission	To make policy recommendations for the development and utilization of indigenous energy resources including renewable energy.	Renewable Energy Act 2011, Energy Policy, Strategic National Energy Plan 2006 to 2020
Ministry Of Environment, Science, Technology And Innovation Environmental Protection Agency	Protection of the environment through policy formulation and initiating activities needed to underpin the standards and policies required for planning and implementation of development activities Setting of standards and regulatory activities concerning the application of science and technology in managing the environment for sustainable development.	National environmental policy National climate change policy Environmental fiscal reform policy National Sanitation Policy National Sanitation Strategy and Action Plan
National Development Planning Commission	To advise the president of Ghana on every developmental planning policies and strategies and to coordinate economic and social activities in a manner that will ensure accelerated and sustainable development of the country and improvement in the standard of living for all Ghanaians.	Ghana Shared Growth Developmental Agenda (GSGDA II)
Ghana Investment Promotion Center (GIPC)	From the GIPC ACT it is mandated to create an enhanced, transparent and responsive environment for investment and the development of the Ghanaian economy through investment; To encourage, promote and facilitate investment in the country.	GIPC Act
Ministry of Local Government And Rural Development	Is mandated to provide policy formulation, programming, and coordination within the agricultural sector.	Food and Agricultural development policy (FASDEP II) Medium-Term Agricultural sector Investment Plan (METASIP)
GFZA	To create a conducive and attractive business environment through the provision of competitive free zone incentives and operation of an efficient "one stop-shop" for the promotion and enhancement of domestic and foreign investment.	National Export Strategy for the Non-Traditional Sector
Ministry of Finance (MoF)	Ensuring macro-economic stability for the promotion of sustainable economic growth and development.	Financial Administration Act, 2003
Ministry of Lands and Natural Resources (MLNR) and Forestry Commission	Ministry of Lands and Natural Resources (MLNR) has the mandate to oversee to the management of Ghana's land, forest, wildlife and mineral resources through offering policy direction. It works closely with the Forestry Commission (FC) and the Forestry Research Institute of Ghana (FORIG) to execute its activities. The Forestry Commission (FC) has a mandate to conserve, protect and sustainably manage Ghana's Forest and Wildlife resources.	Forest and Wildlife Policy, National Land Policy, National Forest Plantation Development Strategy, REDD+ Strategy

Private Sector

Institutions	Mandate	Institutional mechanism
Private Enterprise Federation (PEF)	Providing the development needs of the private sector through advocacy for efficient allocation of the country's resources, provision of requisite business development support services and capacity building for a sustainable private sector led national economic development.	Private sector development strategy
Association of Ghana Industries (AGI)	To advocate policies that enhances growth and development of industries. Strengthening of national industry associations through the sharing of knowledge, experience and critical information.	Industrial Policy
Banking sector	To have an overall supervisory and regulatory authority in all matters relating to banking and non-banking financial business with the purpose to achieve a sound, efficient banking system in the interest of depositors and other customers of these institutions and the economy as a whole. (Mandate of the Central Bank of Ghana. accessed at http://www.bog.gov.gh/index.php?option=com_content&view=article&id=62&Itemid=122 on <1/04/2015>)	Bank of Ghana Act 2002, Act 612; Banking Act, 2004 (Act 673); Non-Bank Financial Institutions Act, 2008 (Act 774); and Companies Code Act 179, 1963
Insurance sector	The insurance sector is regulated by the National Insurance Commission. It is established by law to ensure effective administration, supervision, regulation and control the business of Insurance in Ghana	Insurance Law 1989 (PNDC Law 227)

International Actors

Institutions	Mandate	Institutional mechanism
SECO	SECO seeks to provide development, cooperation and transition aid to developing and transition countries.	Federal Law of 1976
DANIDA	To combat poverty and promote human rights, democracy, sustainable development, peace and stability.	It is function under the following strategic priorities: Human rights and democracy, green growth, social progress and stability and protection.
EU	The EU seeks to promote freedom, security and justice among its member states.	It is built on the principles of free movement of persons, goods, services and strictly prohibition of any discrimination on grounds of nationality.
KOICA	KOICA mandates lie in (i) reducing poverty in developing countries (ii) improving the human rights of women and children, and achieve gender equality (iii) realizing sustainable development and humanitarianism (iv) promoting cooperative economic relations with developing partners; and (v) pursuing peace and prosperity in the international community.	The 1991 *Korea International Cooperation Agency Act*
World Bank	The World Bank is committed to providing the financial and technical assistance to developing nations to end extreme poverty by decreasing the percentage of people living on less than $1.25 a day to less than 3% and promote shared prosperity by fostering the income growth of the bottom 40% for every country.	Providing technical assistance, capacity building and undertaking in reports writing for countries.
UN Organisations	The UN organisations including UNEP, UNDP, UNIDO, ILO among others, fundamentally work in diverse capacities to support Ghana to achieve the Millennium Development Goals, and also to help Ghana advance its equitable economic growth and poverty reduction.	They undertake these activities through capacity development, strengthening of accountability systems and the delivery of quality social services, with a focus on the most deprived and vulnerable populations.

Social Partners

Institutions	Mandate	Institutional mechanism
TUC	To organize all working people of Ghana into one independent and democratic trade organization for improved working and living conditions through collective action, solidarity and social partnership based on the principle of fairness and justice.	TUC Policies 2012-2016
CSOs/NGOs	Conservation International, Ghana; Friends of the Earth; ClimateCare; Nature Conservation and Research Centre; Abantu for Development; Environmental Applications; Technology Centre; KASA, etc., are important CSOs/NGOs on issues concerning the environment.	Underpinnings agendas are addressing climate change, poverty eradication, capacity building, and education on the environment.
Ghana Employers Association (GEA)	To proactively protect interest of employers in a competitive business environment through advocacy, consultancy, quality service and industrial harmony.	Industrial policy National sector development strategy

Sector working groups

Institutions	Mandate	Institutional mechanism
Private sector working group	The Private Enterprise Federation-Ghana is made up of several private owned organisations and it is charged with the responsibility of providing developmental needs of the private sector through advocacy and capacity building for an efficient and sustainable private sector led national development.	Private Sector Development Strategy (PSDS) Public Private Partnerships (PPP) Policy
Environment sector working group	The Institute for Environment and Sanitation Studies at the University of Ghana is an environmentally inclined public institute whose central goal is to help Ghana meet its needs in education, training and research in the science, policy and management of environment and sanitation issues.	Climate change policy
Energy sector working group	The Public Utilities Regulatory Commission is an independent body in Ghana set up through Act 538 (1997) to regulate the provision of utility services in the electricity and water sectors.	Feed-in-Tariff (FiT)
Agricultural sector working group	CSIR-Soil Research Institute is mandated to undertake scientific research to generate information and technologies for effective planning, utilization and management of the soil resources of Ghana for increase and sustainable agriculture, industry as well as ensuring safe and sound environment.	FASDEP

Institutional mechanisms

Institutions	Mandate	Institutional mechanism
National climate change committee	The National Climate Change Committee was charged with the responsibility of overseeing to the draft of the National Climate Change Policy (NCCP) and further to review policies that will help foster the creation of enabling environment for a successful implementation of the NCCP	Initial communication to the UNFCCC Second National Communication to the UNFCCC National Climate Change Policy Framework
Environment and Natural resources Advisory Council	Ghana's Environment and Natural Resources Advisory Council is charged with the responsibility of overseeing to all cross-sectoral issues related to environment and natural resources are addressed.	Initial communication to the UNFCCC Second National Communication to the UNFCCC National Climate Change Policy Framework
Private sector development strategy	This is a national policy document whose central objectives lie in addressing challenges confronting the private sector in Ghana in order to create an enabling environment for private sector to thrive.	PSDS (I&II)

Training initiatives

Institutions	Mandate	Institutional mechanism
UNEP/UNIDO-National cleaner production center Ghana	This project seeks to contribute to efficient use of natural resources, including materials, water and energy; minimization of wastes and emissions, including those discharged to water, air or on land; and reduction of risks to humans and environment from use of chemicals and disposal of chemicals used in industry in Ghana.	It is functioning on sustainable environmental friendly principles.
DANIDA-Climate Innovation Center	This center is to help support the growth of Ghana's climate (clean) technology businesses with a comprehensive suite of financing and business incubation services.	It is functioning on sustainable environmental friendly principles.
Academia	Institute of Statistical, Social and Economics Research (ISSER) at the University of Ghana undertakes research in the social science for national development.	State of the Ghanaian Economy Reports

2.6 REVIEW OF RECENT STUDIES AND ASSESSMENTS

Despite the few works on green economy in Ghana, some studies (UNEP 2013, UNEP 2014) have significantly elaborated on the potential for greening the Ghanaian economy, while other studies (Kamausuor et al. 2012 and Essah, 2011) focused on specific sectors including energy and agriculture owning to their contributions to GHG emissions, employment generation and poverty reduction. Studies that focused on the energy sector considered the benefits that will accrue to the sector should green initiatives such as renewable energy technologies are introduced into the energy mix (Kamausuor et al. 2012 and Essah, 2011). These studies revealed that adopting green growth technologies such as Solar-PVs and wind turbines will help reduce emissions, create sustainable jobs to reduce unemployment and poverty, and further provide energy security. These findings were echoed in another study, which noted how greening initiatives could serve as an antidote to deforestation (Energy Commission, 2013) .

The Green Economy Scoping report for Ghana identified broad range of opportunities that the country could reap should it undertake green development initiatives (UNEP, 2013). The study identified sectors such as agriculture, forestry, waste and energy when transitioned to green economy pathway, will be very beneficial to the economy through GDP growth and the environmental protection. Within the agricultural sector the study prioritized the greening of the cocoa and fisheries sub-sectors through a number of initiatives that could further increase their yields, contribute to agricultural GDP growth and offer sustainable green jobs. Initiatives such as the promotion of large-scale adoption of conservation, reform of agricultural and land tenure system; increment of the value-addition of agricultural products through investments in agricultural infrastructure, technologies and strong farmers/fishermen organization; investment in sustainable agricultural research and capacity development are what the scoping report advocated for greening the sector.

Ghana's energy sector is the lead contributor to GHG emissions in the country (Forestry Commission, 2013; EPA, 2011). To green the sector entails: intensification of renewable energy investments and disseminations in the country; intensification of energy efficiency and conservation measures and the development of green energy finances (UNEP, 2013). On greening the waste sub-sector, the scoping report underscored the need for eliminating waste and reaping all economic benefits through the provision of jobs and recycling; investment in waste reduction, reuse and recycling; developing fiscal policy instruments and regulatory framework; and ensuring a strong regulatory framework (UNEP, 2013).The green assessment report (UNEP, 2014), which is yet to be published builds on the Ghana green economy scoping report (UNEP, 2013) by offering quantitative analysis and building up greening scenarios about how greening initiatives could be achieved relatively to business as usual (BAU) ways of development. Using the three sectors (agriculture, forestry and energy) identified by stakeholders, the assessment report used the Threshold 21 (T21) modeling tool to analyse and present the various scenarios (UNEP 2014) .

3 MAPPING OF EXISTING PROJECTS

3.0 Introduction

This chapter reviews all ongoing and planned projects/programmes in Ghana that embody elements of green economy. It further assesses the extent to which these projects and programmes have synergies with PAGE in order to identify the points of entry for PAGE in Ghana. These programmes are segmented under various thematic sub-headings namely, industrial greening supportive programmes/projects; climate change supportive programmes/projects; capacity building supportive initiatives; and financing supportive programmes/projects. Appendix 2 summarizes all the identified projects and programmes, implementing agency, duration and amount of funds for each of them, depending on data availability.

3.1 Industrial greening supportive programmes/projects

3.1.1 Switch Africa Green (SAG) (January 2014 to December 2017)

Switch African Green (SAG) is an initiative by the European Union to support African countries that are on the verge of either transitioning into an inclusive green growth or promoting sustainable consumption and production. The first pilot countries are Ghana, Burkina Faso, Mauritius, Kenya, South Africa and Uganda. As a four-year programme, SAG's main goal is to "support the development of green businesses and eco-entrepreneurship and to promote the use of sustainable consumption and production practices" in industries by having in place:

- Micro, small and medium enterprises and business service providers that are better equipped to seize opportunities for green business development.
- Better informed public and private consumers.
- Enabling conditions in the form of clear policies, sound regulatory frameworks, incentives structures, tax, other fiscal and market-based instruments influencing key sectors.

The SAG programme is to be implemented in three phases: policy supporting component; green business component; and network facility component. Box 1 establishes the synergy between SAG and PAGE.

Box 1: Synergy between SAG and PAGE

Financed with an amount of 20.5 million Euros, SAG is expected to run concurrently in all the six African centuries between January 2014 and December 2017. SAG will be very essential to the partnership for action on greening Ghana's economy because it already lays the foundation for greening through green investment initiatives within the Small and Micro Enterprises (SMEs) in Ghana, provision of capacity building for governmental institutions and private sector players on SCPs as well as the provision of needed incentives for effective implementation of SCP in Ghana. PAGE can therefore take advantage of the opportunities embedded in SAG to promote green economy within the various industrial sectors in Ghana.

3.1.2 Switch Africa Green (SAG) (January 2014 to December 2017)

The Solar Export Potential (SEP) is a pilot project undertaken by The Energy Center (TEC), Kwame Nkrumah University of Science and Technology (KNUST)-Ghana and funded by UNEP. The project seeks to assess the technical and financial feasibility of solar energy exports; environmental and socio-economic effects of solar energy exports; analysis of the current and future potential of solar PV value chain; and possible proposal for policy and industrial measures for harnessing solar trade opportunities in Ghana. It is anticipated that this project's findings could serve as bases for creating awareness on trade opportunities in the solar energy industry as well as build capacity in the private and public sectors to overcome barriers to solar technology development in Ghana. Box 2 shows the links between the SEP project and PAGE.

Box 2: Synergy between the SEP project and PAGE

UNEP's solar export potential programme will be essential to the PAGE initiative since it presents empirical evidence on the prospect of renewable energy technologies (RETs) (solar PV technology) in Ghana. This empirical evidence could aid in formulating action plans for the development of solar PV technologies since it evaluates the technical and financial viability dimensions of PV technologies in Ghana. PAGE activities in Ghana can therefore incorporate elements that examine the potential and constraints surrounding RETs serve as a way advocating for environmentally technologies, which are also economically and financially viable.

3.1.3 Biogas Technology and Business for Sustainable Growth (BTBSG) (September 2013 to August 2016)

The Biogas Technology and Business for Sustainable Growth (BTBSG) is a programme implemented by UNIDO to help green industries in Ghana. Unlike the solar export potential programme which offers empirical evaluations for future implementations, this is a programme that builds upon all empirical evidence that have evaluated concerning the states of biogas industries in Ghana and also on lessons that are drawn from past and ongoing biogas initiatives in the country. The project aims to increase clean energy access through the promotion of industrial-scale biogas technologies by way of an integrated technology transfer approach, and support to biogas enterprise development. Spearheaded by UNIDO, the programme sees great commitment of both international bodies and the institutions of government of Ghana. The Ministry of Trade, Industry and Energy (MOTIE) of Korea, Korea Institute of Energy Technology Evaluation and Planning (KETEP) are the coordinating agencies offering the technical expertise to the counterparts agencies in Ghana: Ministry of Trade and Industries (MoTI), Ministry of Energy (MoE) and Center for Scientific and Industrial Research (CSIR). As a result a number of biogas plants have already been developed in abattoirs, homes, institutions, etc., in the country by Biogas Technologies Africa Limited (See website: https://www.facebook.com /biogasonline [Accessed: 20/5/2015]). Such projects include Ashesi University Biogas Plant; Tema International School Biogas Plant; All Nations University Biogas Plant; Coco-Cola Bio-Laterine; Ghana Cocoa-Board Warehouse Biogas Plant; Realish Foods Prcessing Factory Biogas Plant; Keta Secondary School Plant; Presidential Palace (Jubilee House); Africa Regent Hotel Project; Fiesta Royale Hotel; and the Central University College (See http://www.biogasonline.com/projects.asp [Accessed; 201/5/2015]). Others are the Accra and Kumasi Abattoirs. The complementarity between this project and PAGE is illustrated in Box 3 (GIZ 2014).

Box 3: Synergy between the BTBSG and PAGE

The BTBSG programme has the prospects to shore up the greening of the energy and industrial sectors in Ghana based on its objectives and approaches. PAGE can therefore maximize the green opportunities that this programme presents by emphasizing them in its activities.

3.1.4 Sustaining Competitive and Responsible Enterprise (SCORE) (2009-2013)

The programme aims at supporting SMEs (in Ghana, Colombia, South Africa, Indonesia, China, India and Vietnam) to adapt to best international practices in the manufacturing and service sectors and also to enhance SMEs participation in the global supply chains. SCORE desires to achieve this goal through capacity building in the form of giving SMEs the required practical training and in-factory counseling programmes in order to enhance their productivity and working conditions. SCORE has seven training packages geared towards achieving the overall aim: workplace cooperation; quality managing continuous improvement; productivity through cleaner production; workforce management for cooperation and business success; and safety and health at work. Considering the fact that this programme targets the greening of the industrial sector, it is extremely important to PAGE's activities. Box 4 therefore teases out the synergies between these two programmes.

Box 4: Synergy between SCORE and PAGE

SCORE focuses on industrial (SMEs) greening and the improvement of the income security of local entrepreneurs. These two constituents of SCORE are in consonance with the priority areas of concern for PAGE. Although the programme has ended, PAGE could revive it to enhance the GE transition in Ghana.

3.2 Climate Change supportive programmes/projects

3.2.1 Green Economy in Biosphere Reserve (GEBR) Programme (3 years)

The GEBR programme focuses on biodiversity conservation, poverty reduction and sustainable development in Ghana, Nigeria and Tanzania through biodiversity businesses in biosphere reserves. This is to be achieved through the diversification of the economy by way of improving biodiversity related income generating sources; reducing pressure on forest as a result of fuel wood extraction for heating and cooking purposes; holistic community capacity building to ensure the sustainability of the biodiversity businesses. In Ghana the various aspects this project will be implemented in Juabeso and Bia Districts in the south-western part of the country. The biosphere reserve in the country, which covers a land area of 114,300 hectares and lies between moist evergreen and moist semi-deciduous forest is to benefit from technical expertise and financial support from the Korean government. Action plans for the implementation of this programme include: assessment and inventory exercise; stakeholder mapping, consultation and needs assessment; socio-economic and market studies; community and stakeholders capacity building; biodiversity business plans; and monitoring and performance assessment. This project provides vast opportunities for the entrance of PAGE's programme as illustrated in Box 5.

Box 5: Synergy between GEBR and PAGE

The 3-year GEBR programme, with about US$1,804,029.18 funding from the Government of Korea conforms to PAGE's main goal of promoting green activities in the country. PAGE is therefore presented with an opportunity to build on this initiative through incorporating the objectives of the programme into its activities.

3.2.2 Environmental Sustainability and Policy for Cocoa Production in Ghana (ESPCP)

The ESPCP is a UNDP initiative programme that assists the government of Ghana to develop its cocoa sector. This project contributes to the creation of enabling institutional systems, tools and policies for the rehabilitation of Ghana's cocoa sector. This programme contributes to biodiversity enrichment; conservation and expansion of forest lands; and forest buffer zones and corridors. In addition, it contributes to climate change mitigation and mechanization of the sector by providing needed incentives to local farmers to adhere to environmentally conscious practices in the Cocoa sector. Strategic actions earmarked for the achievement of these objectives include: strengthening of institutions; intensification of awareness creation for cocoa institutions and framers on environmental best practices; introduction of incentive mechanisms. Box 6 helps identify the significance of this project to PAGE.

Box 6: Synergy between ESPCP and PAGE

Within the agricultural sector, cocoa is the major foreign exchange earner for the country. Grown within the forest enclaves, there is the need for environmentally benign practices, otherwise the forest could degrade further, rendering it ineffective as a carbon sink. The emphasis of ESPCP on environmentally compatible practices is in sync with PAGE's broad goal of helping to green the various sectors in the country. ESPCP therefore provides an opportunity for PAGE to advance its agenda in Ghana.

3.2.3 Low Emission Capacity Building Programme (LECBP) (January 2011 (Commencing date in Ghana was in 2012) to December 2016)

The LECBP programme aims at contributing to global climate change mitigation by way of building capacities within various countries to help unearth low-carbon paths. Particularly, the programme seeks to help design and implement low emission development strategies and national mitigation actions in the energy, transport, industries, waste, agricultural and LULUCF sectors. Being undertaken by UNDP, this programme has multi-donor support: European Union, German Federal ministry for Environment, Natural Conservation and Nuclear Safety and the Australian Department of Climate Change and Energy Efficiency. In the achievement of its main goal, work areas for the programme focus on the development of GHG inventory management systems; national appropriate mitigation actions; low-emission development strategies; measurement, reporting and verification, all in the aforementioned sectors. This programme is very significant for Ghana's transition to green economy and, Box 7 shows how PAGE can foster that.

Box 7: Synergy between LECBP and PAGE

The foci of LECBP in terms of work areas are all geared towards low-carbon development within the context of green economy. The programme therefore fits perfectly with PAGE's goal of promoting green economy transition in Ghana. The need for collaboration between the two to create a great synergy for green economy transition in the country cannot be overemphasized.

3.2.4 Promotion of Energy Efficiency and Transformation of the Refrigerating Appliances Market in Ghana (EETRAM) Programme (July 2011 to June 2014)

This is a climate change mitigation action programme, which aims to help with emission reductions from refrigeration systems recovery, recycling and/or disposal of environmentally damaging refrigerants. Approaches adopted by this programme to achieve its overarching goal include: strengthening of institutional capacity and mechanism for the implementation of appliance energy efficiency standards and labels; creation and adoption of national testing, certification, labeling and enforcement mechanisms; awareness creation through training and national outreach campaign; design, build and commission a refrigerating appliance test facility. Box 8 establishes the linkage of this project to PAG

Box 8: Synergy between EETRAM and PAGE

The promotion of energy efficient technologies is one of the cardinal ways of greening the energy sector. The EETRAM programme therefore presents an opportunity for PAGE to promote greening within the energy efficiency dimension through the intensification of the actions that are already ongoing under the former.

3.2.5 Collaborative Actions for Sustainable Tourism Project (COAST) (2009 to 2014)

The COAST project aims at contributing to environmental protection through preservation and conservation of water and marine ecosystems. Its overall objective is to support and enhance the conservation of globally significant coastal and marine ecosystems and associated biodiversity in Sub-Saharan Africa, through the reduction of the negative environmental impacts associated with them. The accomplishment of this objective will, in the long run boost tourism activities from these environmental services. The key approaches to achieving the main goal of this project at the country level include the strengthening of all existing environmental policies, legislation and institutional arrangements. Box 9 encapsulates the links between COAST and PAGE.

These steps in achieving this goal fall in line with PAGE initiative in greening Ghana (Box 9). This goal is to be accomplished through the achievement of the following objectives:

Box 9: Synergy between COAST and PAGE

The promotion of sustainable eco-tourism within scientifically significant areas such as the coastal and marine ecosystems is aligned with green development agenda. This provides an opportunity for PAGE to enhance the green economy activities in the tourism sector through building on, or supporting the initiatives of COAST.

3.2.6 Natural Resources and Environmental Governance Programme (NREGP) (Sept. 2008 to Sept. 2012)

Supported by the World Bank, NREGP supports sustainable growth and development through the offering of supports to the government of Ghana through reforms at improving environmental and natural resources management at the forest, wildlife and mining sectors; and further contributes to environment protection. This is to help facilitate the realization of government ambition of having a strong natural resource base, reduction in environmental degradation, protection of natural resource-dependent communities, and increasing revenues from timber and mining sectors. This programme is schedule under two phases where the phase one focuses on stakeholder and risk analysis dimensions that helps to unravel the complexity of these sectors, their risk factors and the political and regulatory consideration that needs to be adopted. The second phase builds on the findings of the first phase which then serves as inputs for the implementation of this programme. A synergy of this project with PAGE is presented in box 10 below.

Box 10: Synergy between NREGP and PAGE

The NREGP is a vehicle for the protection and sustainable use of the country's natural resources and is therefore in sync with the main pursuits of PAGE. To boost green economy issues in Ghana, PAGE can therefore take advantage of NREGP and continue to support the same initiatives that have been rollout under it.

3.2.7 Ozone project

The main goal of the UNDP's Ozone project is to help the National Ozone Office to plan, organize, direct and coordinate all activities required for the implementation of Ghana's strategy in all areas related to the Phase-out of Ozone Depleting Substances (ODS) under the Montreal Protocol. In effect, this project is about strengthening the institutional capacity in the country to implement the measures needed for the phasing-out of these substances. There is somewhat a link between this project and PAGE as seen in Box 15.

Box 11: Synergy between Ozone and PAGE

With the Ozone project being focused on building the institutional capacity of Ghana's Ozone office and others to undertake the phasing-out of ODS effectively, PAGE can complement this effort for the greening of the economy by including stakeholders from the Ozone office's in its capacity building initiatives. Secondly, the synergy between the two can also be solidified through technical resource assistance.

3.2.8 Ghana National Low Carbon Development (GNLCD) Strategy

The overall objective of the GNLCD is to contribute to global climate change mitigation through the development of an economically efficient and comprehensive LCDS for Ghana together with a monitoring, reporting and verification system, and an action plan. Implemented by MESTI on behalf of the Government of Ghana, its main specific objectives include the following:

- Assessing the current climate change mitigation policies/strategies and challenges;
- Providing a clear picture of the current situation with regards to major emission sources;
- Providing a clear picture of future emissions based on what is happening currently (business as usual scenario);
- Identifying, analysing and developing long-term mitigation scenarios based on cost efficiency and effectiveness, and on national development aspirations;
- Assessing the potential barriers to implementing these strategies and recommendations for improvement;
- Developing institutional framework to support the implementation of the strategies;
- Developing action plans for the implementation of strategies in key sectors;
- Identifying opportunities for appropriate financial and economic policy initiatives that will enhance implementation of the strategies.

Box 12 summarises the links between the GNLCD and PAGE.

Box 12: Synergy between GNLCD and PAGE

While the GNLCD document is yet to be finalized, all the recommended strategies will be crucial for shoring up the green economy agenda in Ghana because they will be inclined to mitigating climate change. PAGE can either play a critical role in their finalization or support in their implementation to bring a great synergy to the efforts on the transition to green economy in Ghana.

3.2.9 Climate Change Risk Communications Framework for Coastal Urban Development Policy (CCRCFCUDP) (February 2012 to May 2013)

Funded by CDKN and implemented by the Regional Institute for Population Studies (RIPS), University of Ghana, the project focused on reducing risks associated with climate change and natural disasters along coastal cities of Ghana. It did through building the capacities of institutional stakeholders, including those at the municipal levels on how to integrate climate change and disaster issues into coastal development planning in Ghana. Although this project has ended, lessons from it could be useful to PAGE as presented in Box 13.

Box 13: Synergy between CCRCFCUDP and PAGE

Through the CCRCFCUDP project, the capacities of various institutional players were built on the mainstreaming of climate change issues into the development plans of coastal cities. Having built their capacities as well as created the awareness on climate change, PAGE can take advantage of this opportunity by including these same institutions and stakeholders in the capacity building and awareness creation on GE transition in Ghana.

3.2.10 UNEP-Green Economy (GE) Sequence (2013-2017)

The UNEP-GE Sequence focuses strongly on greening the Ghanaian economy. Its first phase was the GE Scoping Study for Ghana, which assessed the potentials for a green economy transition in the country. The second phase constitutes the GE Assessment of the country. The GE Action Plan, which is the concluding phase of the UNEP-GE Sequence seeks to present steps and actions that Ghana must take in order to transform its economy towards an inclusive green development and growth. Box 14 presents the linkages between UNEP_GE sequence and PAGE.

Box 14: Synergy between UNEP-GE and PAGE

UNEP-GE sequence has laid the foundation for GE transition in Ghana through the first two phases' activities. The development of the GE Action Plan under the UNEP-GE sequence for the country is quite critical for the success of the GE transition. A great synergy can be realised in the development of the Action Plan if PAGE collaborates with UNEP.

3.3 Capacity building supportive programmes/projects

3.3.1 UNEP-Green Economy (GE) Sequence (2013-2017)

The SDOC programme is a UNDP initiative aimed at supporting public-private dialogue and joint planning to help up-scale sustainable production by addressing all bottlenecks between producers, government and buyers in Ghana's cocoa sector. The initiative further contributes to solving challenges such as land tenure systems, policy and institutional capacity, access to crop inputs, access to finance and markets through stakeholder dialogues at the cocoa sub sector. There are two components to this initiative: development and operation of the Ghana cocoa platform (government awareness creation and review of root causes of challenges); and global knowledge management. Box 15 points to the synergy of SDOC project with PAGE.

Box 15: Synergy between SDOC and PAGE

The SDOC platform's focus of mapping all the barriers that confront the cocoa sector in a bid to enhance performance is very much relevant to PAGE's undertakings in the greening of the Ghanaian economy especially, the cocoa sub-sector. Understanding of the main barriers to sustainable practices within the sub-sector is will unveil the key elements to be addressed within the green economy dimension as far as PAGE can be talked about.

3.3.2 Capacity building for the elimination of Polychlorinated Biphenyls (CBEPCB) (Dec. 2008 to Dec. 2013)

The CBEPCB project in Ghana is a GEF/UNITAR/UNDP support project. This project contributes to climate change mitigation by controlling and eliminating toxic chemicals that are harmful to human and the environment. Its primary aim is to help build human and institutional capacities in Ghana to undertake effective management of all polychlorinated biphenyls (PCBs) in a manner that confirms with the Stockholm Convention in order to eliminate them by 2025. It is centered on five essential outcomes.

- Availability of tools needed in building PCB management capacity in Ghana and trained personnel in place to cover all major aspects of PCB management;
- Environmentally sound management of PCBs developed and in place;
- Destruction of identified PCBs in Ghana;
- Regional/international awareness raised on effective capacity building strategies for ESM of PCBs; and
- Effective project management.

Box 16 teases out the linkage of this project to PAGE.

Box 16: Synergy between CBEPCB and PAGE

The CBEPCB project attempts to contribute to global climate change mitigation through the promotion of chemical-free environment through the building of human and institutional capacities. Thus, with one of PAGE's main actions for greening being capacity building, the two projects can create synergy regarding the transition to a green economy in Ghana.

3.3.3 China Ghana South-South Cooperation on Renewable Energy Technology Transfer (CGSSCRETT) Programme (July 2014 to June 2018)

This programme is to help facilitate the UN's Sustainable Energy for All initiative to boost Ghana's attainment of universal access to modern energy sources. It also contributes to climate change mitigation and poverty reduction by increasing access to renewable energy solutions through enhanced investment and production of RETs in Ghana. Implementation of this programme has been put into four phases: creation of an enabling environment for the transfer, production and regulation of the use of RETs in Ghana; increased access to and use of relevant RETs in Ghana; China to strengthen capacity for South-South Cooperation in relation to RET transfer; and project management and coordination structures to be established.

Under phase one, the project focuses on building capacities such as the regulatory and institutional frameworks to create the necessary enabling environment that will aid the promotion and transfers of technology and expertise from China to Ghana. Under this phase it is expected that, with the diffusion of expertise from China the bottlenecks that hinder RETs development in Ghana will be overcome. Pilot implementation of selected RETs technologies that falls in line with the priorities of the government of Ghana come under second phase of implementation of this project, while the third phase entails Chinese institutional and private sector capacity to engage in the transfer of the technology to Ghana. Phase four focuses on the establishment of key project management structures for the implementation of the programme. Box 17 links the importance of this programme to PAGE.

Box 17: Synergy between CGSSCRETT and PAGE

The CGSSCRETT programme is indispensable to the PAGE project. This programme will pursue actions that are very vital for the transformation of the diffusion of RETs, which are green in their nature. Intensification of the approaches of this programme will therefore be necessary for greening the economy and PAGE can take advantage of them.

3.3.4 Sustainable Public Procurement (SPP) (Sept. 2014 to 2017)

SSP in Ghana is implemented through the Swiss-Ghana Sustainable Public Procurement (SPP) Project, a three-year project being implemented by Public Procurement Authority and financed by the Swiss Government with a USD 2.7 million grant. The overall goal of the SPP Project is "to embed the principles of transparency, accountability and sustainability in public procurement by strengthening the monitoring & evaluation system and by increasing the supply of more sustainable goods and services procured by the government"(International Institute for Sustainable Development (IISD) November 2012). The targeted outcomes focus on introducing a national system for SPP and on strengthening the existing M&E system by incorporating sustainability criteria. Both legal compliance with the Public Procurement Act and the monitoring of SPP implementation is considered pivotal for the institutionalization of SPP. The SPP process is modeled in accordance with the Marrakech Task Force (MTF) Approach to SPP and addresses the three dimensions of sustainability: economic, social, and environmental.

The project planning documents states three reasons on why to engage in SPP: The first reason is based on cost effectiveness, given that some "green" products are less costly in terms of their use, maintenance, and disposal despite higher upfront investment costs. A second reason is that governments, due to their importance as customers in some markets, can make a difference in environmental outcomes by choosing environmentally and socially friendly options. Thirdly, governments can use their market power to influence producers to shift more rapidly to cleaner technologies. Box 18 presents the links between SSP and PAGE.

Box 18: Synergy between SPP and PAGE

The SPP project has led to the development of SPP policy in the country. This policy favours sustainable development elements in the procurement processes, which are critical for green economy transition. Thus, to enhance the transition to green economy in Ghana, PAGE can strengthen the SPP processes through more capacity building on the part of procurement practitioners and products inspectors.

3.3.5 Sustainable Business Forum (SBF)

The primary aim of Sustainable Business Forum (SBF) project is to provide advisory, audit and tax services to businesses in Ghana through dialogue and experience sharing of ideas and initiatives; discussions and innovative thinking on the role of sustainability of businesses; and networking platform for solutions to sustainable business challenges. Implemented by PricewaterhouseCoopers (PwC) the project further aims at capitalizing on its primary goal to create employment, promote industrial development and ensuring energy and resource efficiency. The synergy between the SBF project and PAGE is presented in Box 19.

Box 19: Synergy between SBF and PAGE

The SBF project creates one of the appropriate platforms through which the activities of PAGE can be channeled. That is, the SBF project could advance the agenda of greening businesses in Ghana if PAGE forges a certain level of partnership with it, because of its main foci.

3.3.6 Sustainable Energy for All (SE4ALL)

The Sustainable Energy for All (SE4ALL) programme in Ghana is in line with global goal of sustainable energy for all by 2030. Globally, SE4ALL programme seeks to achieve three overarching goals: universal access to modern energy services; doubling the rate of improvements in energy efficiency and doubling the share of renewable in the global energy mix by 2030. Using the Sustainable Energy for All Acceleration Framework (SEAAF), the UNDP Country Office and the Energy Commission in Ghana, supported key stakeholders to develop a comprehensive plan of action, comprising critical actions and commitments to address prioritized needs in the energy sector. Consequently, Ghana developed three specific objectives under the SEA4ALL programme: promotion of productive use of electricity; improvement in access to cleaner cooking options (improved cookstoves and LPG); promotion of renewable energy and energy efficiency (off-grid electricity). Box 20 below identifies the synergy between this programme and PAGE.

Box 20: Synergy between SE4ALL and PAGE

The SEA4ALL programme in Ghana encompasses the key elements that green economy paradigm advocates within the energy sector. Several activities and their associated potential partners and costs have been earmarked or proposed to help with the achievement of the three fundamental goals of the SE4ALL programme in Ghana. These activities therefore present great opportunities for PAGE to build on the greening of the energy sector in Ghana.

3.3.7 Institutional support to integrate climate change into national development plans (ISICCNDP)

The ISICCNDP programme is one of UNDP's efforts in Ghana to build the necessary capacities needed to help contribute to climate change mitigations. This programme provides supports for advocacy, strategic policy advice and capacity development to key institutions responsible for climate change mitigation in Ghana. There is a strong link between this programme and PAGE as shown in Box 21.

Box 21: Synergy between ISICCNDP and PAGE

Since the ISICCNDP programme is building the capacity of key institutions in Ghana to handle climate change mitigation issues, these selected institutions will also be very important for the integration of green economy into national development based on their acquired knowledge. These institutions will therefore be among the key stakeholders PAGE needs to deal with in Ghana to advance the green economy agenda.

3.3.8 Improving Sustainable Value Chains for Exports from Ghana (SVCEG) (2013-2017)

Funded by UNIDO, the programme seeks to develop a competitive and sustainable export economy in Ghana that complies with trade related standards in order to enhance its integration into the world market. The products that are mostly targeted are fruits, cocoa, fish and wood. In a bid to achieve its overall goal, the programme focuses on ensuring that the selected value-chain products improve their sustainability, quality and export competitiveness through complying with international standards and have access to conformity assessment services; and improving the national quality control system to provide world class conformity assessment services: testing, certification and inspection to the selected value chains. The objectives of this programme are essential for a GE transition in Ghana as seen in Box 22.

Box 22: Synergy between SVCEG and PAGE

The creation of an enabling environment for the export of cocoa, fruits, fish and wood products could contribute to poverty reduction, the creation of green jobs and increase export earnings, which in turn could be used to finance green projects. These are essential to GE transition. To boost GE transition in Ghana PAGE could support the technical and logistic needs of this project.

3.3.9 Youth in Action on Climate Change Mitigation (YACCM) (2009-2015)

Initiated and supported by the United Nations Joint Framework Initiative on Children, the YACCM comprises of climate change mitigation and adaptation initiatives that seek to empower youths to effectively participate in climate change policy decision-making processes. YACCM provides educational training, awareness creation, and behavioural change campaigns to youths. YACCM initiative has several linkages with PAGE as illustrated in Box 23 below.

Box 23: Synergy between YACCM and PAGE

Education, awareness creation and behavioural change among the youth, which are key strategies for the implementation of YACCM project, are equally important for the achievement of success in the GE transition drive in Ghana. The youth in Ghana needs to be educated on the links between GE and climate change mitigation/adaptation in order for them to make informed decisions when dealing the environment. PAGE can boost this awareness creation by collaborating with the YACCM in this endeavor.

3.4 Welfare supportive programmes/projects

3.4.1 Labour Intensive Public Works (LIPW) (2012-2016)

The LIPW project, which is funded by the World Bank, is a key component of the Ghana Social Opportunities Project (GSOP). Running from 2012 to about 2016, the LIPW project focuses on improving socio-economic status of rural dwellers through the provision of local employment and income-earning opportunities in the agricultural off-seasons through taking part in climate change activities (trees planting); construction of small earthed-dams for irrigation activities and animals; and construction of feeder roads. Box 24 below establishes the importance of this project for GE transition and how it links with PAGE.

Box 24: Synergy between LIPW and PAGE

The LIPW project addresses the trio objectives of social, economic and environmental development in the beneficiary communities in Ghana. These objectives are in sync with GE transition issues and, PAGE can forge a partnership with the project to help strengthen the climate change component.

3.5 Financial supportive programmes/projects

3.5.1 Green Climate Fund (GCF) Readiness Project (2015 to 2016)

This is an initiative of UNEP, UNDP and WRI to help finance projects and implement strategies that are geared towards climate change mitigation and adaptation; REDD+; and low-carbon development. Even though yet to be implemented, the GCF aims at supporting the Government of Ghana to adequately plan, access, manage and monitor climate change financing schemes in order to maximize the opportunities.

Box 25: Synergy between GCF and PAGE

The GCF initiative will be of great value to the enhancement of green economy activities in Ghana as it will help to identify and source key funding channels for green activities and projects for climate mitigation efforts. A great synergy between the GCF and PAGE can be built if PAGE helps to consolidate the implementation process of the GCF.

3.5.2 Ghana Climate Innovation Centre Ghana (GCIC) (2014 to 2019)

Funded by the Danish International Development Cooperation Agency (DANIDA), the GCIC is a climate change mitigation initiative that focuses on supporting the growth of local climate (clean) technology businesses through the provision of financing and business incubation services. The upshots of this programme include supporting the country's economic development, job creation and industrial competitiveness in clean technologies. Box 26 shows the synergy of this project with PAGE.

Box 26: Synergy between GCICand PAGE

Both GCIC and PAGE have similar goals of enhancing the development of green technologies and green businesses. A great synergy can be created for GE transition in Ghana if PAGE aligns some of its activities with what GCIC is already undertaking.

3.6 CONCLUSION

The chapter has first and foremost helped identify linkages between various programmes and projects, either completed, ongoing or yet to take off and PAGE to foster GE transition in Ghana. Also, it has unraveled areas that have either had a lot of activities taking place or under developed. Programmes such as capacity building and climate change initiatives have been intensively implemented while others such as welfare and financing supportive programmes are under-developed. Despite these outcomes, it is evident from the section that all programmes and projects have elements that are in sync with PAGE objectives and can boost the GE transition in the country. Some programmes including UNEP-GE Sequence, Switch Africa Green, Green Climate Fund (GCF), Sustaining Competitive and Responsible Enterprise (SCORE), etc., pursue activities directly in the realm of green economy, while activities under the other projects and programmes can be supported to shore up GE transition in the country.

4 IDENTIFICATION OF COUNTRY ASSESSMENT NEEDS

4.0 INTRODUCTION

This chapter assesses available statistics on various sectors of the economy of Ghana. It also identifies gaps in the statistics that will be useful for PAGE project's activities. In addition, the chapter looks at various areas facing policy implementation obstacles and why such hindrances are occurring.

4.1 ASSESSMENT OF SECTORAL STATISTICS

Statistics on relevant indicators such as agricultural water demand, proportion of agricultural products that go waste from the farm gate to the consumer; and dynamics in usage of agricultural lands, which are needed for simulation analysis are either not available or are missing for most years. Targeted policy costs are also lacking and, thereby undermining the power of using modeling techniques such as T21 to make an elaborative simulation within the sector and at the macro level (UNEP 2014). Despite these setbacks, Ghana's agricultural sector has some substantive amount of data at least from 2000 to 2012 for most indicators including, agricultural contributions to GDP; livestock and fisheries production; cereals and crops production (MoFA 2010, ISSER 2014).

A careful analysis of the available data reveals the emergency for greening the sector. Agriculture contributions to Ghana's economy keeps declining mainly as a result of the inability of government to keep to its commitment in mechanizing the sector as enshrined in the Ghana Vision 2020 and GSGDAI (NDPC 2014). Low productivity, non-competitiveness and weak linkages to industries (manufacturing industries) are other factors resulting in the declining trend (MoFA 2010, NDPC 2014). These therefore pose serious effects to the quality and quantity of agricultural yields in the country and, could in turn affect food security and further to widen poverty. Fisheries and livestock's sub-sector contribution to agricultural GDP keeps falling over the years. Contributions of this sub-sector to the agricultural sector declined from 8.59 percent in 2008 to 7.58 percent in 2011 (UNEP 2013). The agricultural sector is second to the energy sector in terms of contribution to GHG emissions in Ghana. It accounts for 38 percent of total GHG emissions, which emanates largely from fertilizers (UNEP 2013).

The agricultural sector is essential to the wellbeing of the country since it is the source of food. Thus, its greening could reduce any form of malnutrition and poverty, creates employment, increases its share of export earnings most especially when there is value addition at the industrial sector and reduces fertilizes importation since waste from this segment could be used as organic manure to reduce the high CO_2 associated with inorganic fertilizers which are mostly imported.

Ghana's energy sector has one of the most reliable statistics useful for any form of studies or policy interventions. With the exception of the paucity of data on RETs owning to their under development, energy on other energy sources, their demand and supply, production and net import are readily available dating back to the 1990s for all energy types. As in the case of the agricultural sector, an analysis of data from the energy sector suggests the need for green transition. At present power production is not adequate to meet domestic and industrial demands and electricity distribution is under several hours of load scheduling (See www.myjoyonline.com [Accessed: 10/01/2014]). Between 2000 and 2004 whilst demand of domestic and service increased by 2.9 percent and 6.5 percent, that of industry had to fall by 8.1 percent to account for the drastic fall in electricity supply (Energy Commission, 2012). This situation had implication for productivity and GDP. The fall in electricity supply for instance is partly attributable to the overreliance on conventional energy sources with very little government commitment in developing alternative energies sources such as RETs which are sustainable and environmental friendly in nature (UNEP 2014). The energy sector is the lead contributor to GHG emission, accounting for 41

percent of total GHG emissions in Ghana (UNEP 2013). The increased use of fossil fuels for thermal power generation and others are accounting for of the increased GHG emission at this sector.

The energy sector is strongly liked to industrial, commercial, agricultural and domestic activities; hence, if nothing is done to save the situation, it will greatly harm the country. Macro-economic indicators such as GDP, employment, and health indicators are most likely to deteriorate if the current trajectory is pursued. Greening has the prospect of averting this, and could further contribute to increasing energy supply, reducing energy inefficiency and creating sustainable jobs within the sector.

Environmental statistics are very scanty in Ghana. Statistics on waste generation and recycling, water, industrial and mining pollutions, forest and land degradations are either not in existence or are missing for several years. However, some useful data still exist. Annual rate of deforestation is estimated to be 2 percent, a worse case compared to the 2000 estimate of 1.82 percent (GFC 2013). Water concentration in some water bodies in Ghana has drastically declined as a result of negative activities from individuals and industries. Concentration of pollutants has worsened from 44.2 percent to 62.4 percent between 1993 and 2010 (UNEP 2014). Poor sanitation further poses a serious challenge as the nation is unable to manage its large tonnes generated waste (EPA 2011, UNEP 2014). Improper behaviours, inadequate sanitation enforcement bodies, lack of recycling plants are but, a few of the reasons accounting for the sanitation management situation. The GHG emission statistics currently position Ghana to be a net emitter of CO_2 (Figure 4.1). High exploitation of forest resources such as timber; biomass burning; mining activities; and emissions from the energy sector are some of the underpinning reasons.

Green economy policy interventions are critically needed in this sector to tackle these challenges. Restoring the forest sector through reforestation mechanisms, public private partnership for waste management and recycling, energy efficient fuel engines usage in cars are some greening interventions which will be helpful to the sector. These measures will further contribute to employment generation, increase life expectancy through the reduction of outbreak of diseases due pollution in the water, land and air.

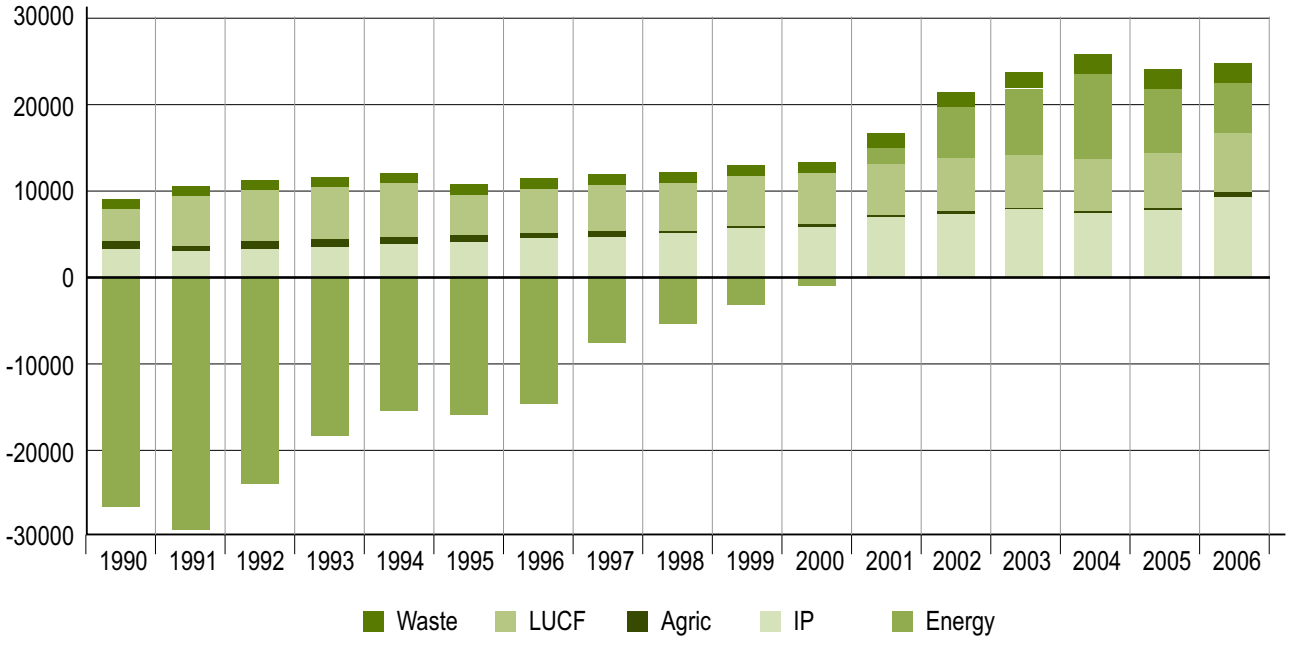


Figure 4.1: Ghana's Greenhouse Gas Emission between 1990 and 2006
(MESTI 2013)

Ghana's industrial sector is another segment of the economy that should never be overlooked in green economy transmission. While the statistics are scanty, the sector contributes significantly to water pollution and CO2 emissions, which in turn pose serious threat to the environment and health of individuals. Statistics indicate that wood, food and chemical industries are the lead contributors to water pollution within the industrial sector (Figure 4.2). CO2 emissions from manufacturing and construction industries have also been on the ascendency over the years (see Figure 4.3). Between 2000 and 2011 CO2 emissions from the manufacturing and construction industries have doubled approximately with growth rate of 93.8 percent.

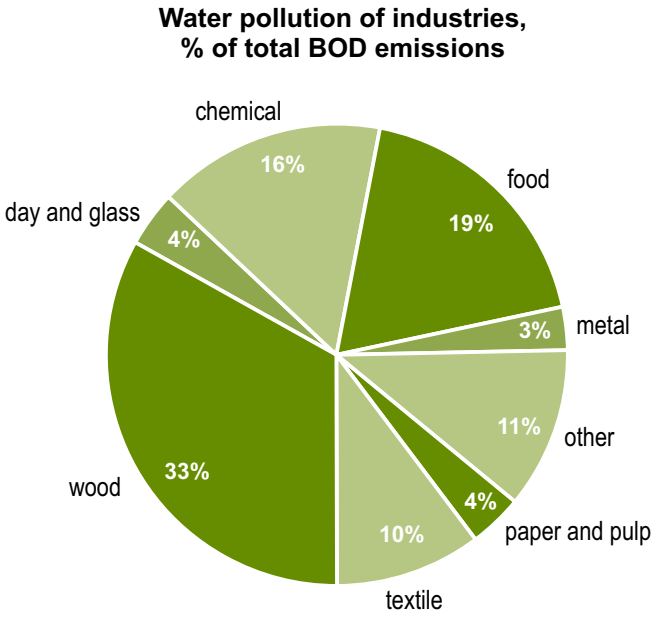


Figure 4.2: Industrial contribution to water pollution
(World Bank Data 2014)

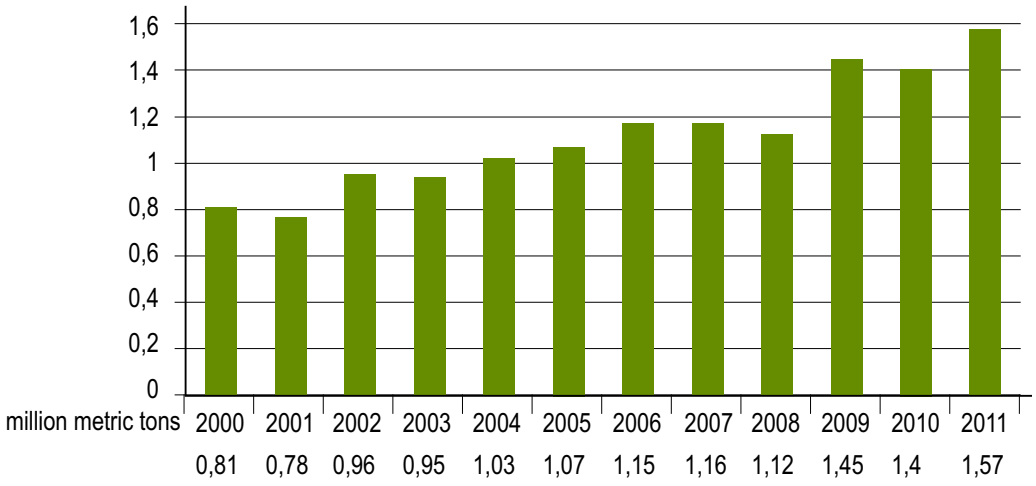


Figure 4.3: CO2 emissions from manufacturing industries and construction (million metric tons)
(World Bank Data 2014)

Industrial greening will be very imperative, since it will not only solve issues of pollution and emissions, but will also help contribute to increasing industrial productivity, GDP growth and further reduce energy demands. Industrial greening can be done by introducing green technologies such as energy efficient machineries, recycling and treatments of industrial wastes, and adhering to environmental policies.

4.2 Availability of data, survey plans and challenges of green economy data at the Ghana Statistical Service

Green Economy data are inadequate in Ghana. Most data in the country were collected without attention to GE or with few elements relating to GE issues. In consequence, vital historical data such as policy cost and yearly targeting, which are needed for green economy modeling are largely absent from the country database. Currently, there are no survey plans for green economy data collection at the national level, underscored by the fact that a total mainstreaming of green economy issues into national development plans is just beginning to take place, coupled with the lack of expertise (non-existence of environmental statisticians) and inadequate institutional capacity. There is also a high level of apathy from stakeholders to respond to survey instruments that seek elicit green economy information.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF MAJOR FINDINGS

5.1.1 Macro-economic profile

Ghana's GDP growth rate stood at 5.4 percent as at the end of 2013 after significantly declining from the 2011 growth rate of 14.4 percent that elevated Ghana into a lower middle income country. Before 2011, major contributors to GDP were from the minerals, cocoa, timber and non-traditional exports sectors. Their share, however, declined over the years as a result of the commercial production of oil in the country. Mineral accounted for 43 percent of merchandise export in 2012 but dipped to 37.6 percent in 2013. Cocoa also dipped from 20.9 percent in 2012 to 16.5 percent in 2013. Timber, which is the least contributor to export earnings, however, saw a slight increment from 1.0 percent to 1.2 percent of export earnings in 2012 and 2013 respectively. Due to the large attention given to the oil production, it is predicted that the contributions of traditional exports will further fall over the years most especially, in the case of timber. The estimated percentage changes are: 34.71 percent for gold, 20.45 percent for cocoa, 0.95 percent for timber and 22.73 percent for oil by the end of 2014.

Until 2006, Ghana's economy was largely driven by the agricultural sector, contributing about half of the total GDP. In recent years, however, whiles contribution from the agricultural sector to GDP keeps declining those of the service and the industry keep rising. In 2011 both the service (48.5%) and industry (25.9%) outperformed the agricultural sector (25.6%). This shift altered the number of employment per sector, although not immediately, with the service sector dominating. Private sector involvement in national development has been very low despite the enactment of policies such as the PSDS I&II to boost their activities. This is attributable to inadequate managerial and corporate skills, inadequate financing schemes, large informal sectors, ineffective supports from the public sector to the private sector and lack of concerted effort from stakeholders.

Rising trade and fiscal deficits are key macro-economic challenges confronting the nation because as high as 11.8 million Ghana Cedis was estimated to be the trade deficits as at the end of 2012. High importation of foreign products especially, oil to meet the local demands accounted for this. Overreliance on external partners with low domestic savings in financing developmental projects is another challenge the nation faces.

5.1.2 Macro-economic profile

Ghana is endowed with abundant natural resources including minerals, forest cover, biodiversity, and freshwater bodies. Despite the robust measures that have been made to increase forest cover in recent years, Ghana's forest has suffered from forest degradation and deforestation mainly as a result of illegal chain saw activities. Deforestation was estimated at an annual rate of 1.82 percent of the total land surface in 2000 and rose to 2 percent in 2012. In addition, the cost of environmental degradation is one of the highest in the world- about 10 percent of GDP.

Minerals are the major contributors to merchandise export in Ghana even though their extraction activities endanger the environment and the health of human beings. Extractive activities comprising predominantly illegal mining activities are estimated to account for five percent of Ghana's forest degradation. Waste generation, comprising predominantly non-degradable elements is a key environmental challenge as the nation is unable to properly manage all its waste generation. This could be attributed to low budgetary allocation for environmental management as its share to GDP keeps declining. Despite this declining trend, government is however, strongly committed to meeting all the environmental conventions it has signed up to. This is to help contribute to finding lasting solutions to the myriad of challenges associated with climate change, forest degradation and any other environmental issues.

5.1.3 Social Profile

Ghana's population stood at 24,658,823 in 2010, having more females (51.2%) than males (48.8%). Population growth rate was estimated at 2.5 percent in 2010; this however was a decline in the 2000 estimate of 2.7 percent. The country has made significant effort at reducing poverty and income inequalities over the years. Gender inequalities have also improved in recent years (2010 estimates) as females' involvement in higher education; employment and governance have increased per the 2000 estimates. Ghana has also made significant effort at improving its health indicators due to implementation of measures in meeting the Millennium Development Goals (MDGs). Birth attendants by specialist have improved, infant mortality and maternal mortality have been reduced and average life expectancy has also increased over the years. Despite these achievements, income inequalities still remain high across regions and between social groups. Underemployment is a much pressing socio-economic issue than unemployment in Ghana since it is considered to affect all age groups unlike unemployment, which is a youthful phenomenon.

5.1.4 Review of relevant policies

The matrix below (Table 5.1) summarises the implementation status, progress and challenges of all the relevant national policies that have been reviewed in this study.

Table 5.1 Reviewed Policies and associated issues

Policy	Implementation status	Progress/Achievements	Challenges
GSGDA I	Completed	Improvement on macro-economic indicators	Lack of adequate funding and human expertise
GSGDA II	Yet to be	Not applicable	Not applicable
PSDS II	Implementation in progress	Reduction in the number of days to register a limited liability company and the number of days spent on resolving commercial disputes in courts.	Lack of political commitment.
PPPs	Implementation in progress	Contributed to the undertaking of several projects in Ghana	Unable to attract local investors.
NCCP	Implementation in progress	Sensitization on Climate change issues achieved. Organization of workshop to develop a second phase of the policy, which focuses on outlining mechanisms for financing, has been achieved.	Inactiveness of NCCC-Ghana in recent years and lack of funding are some challenges confronting the policy implementation.
NEP	Implementation in progress	Capacity building; Action plans and Monitoring and Evaluation Plans are at the verge of completion	Overreliance on donor supports
Industrial Policy	Implementation in progress	Inability to evaluate successes due to lack of progress reports	Inadequate funding and delay in the release of funds from donors and government
National Energy Policy and National Energy Strategy	Implementation in progress	Several achievements made including 2.5 MW grid-connected solar plant	Overreliance on conventional energy source and Nigeria gas for power production
Renewable Energy Act	Implementation in progress	Feed-in-tariff, RE Grid Codes and Net-Metering Code have been developed	Long delay in setting up the RE Fund
Ghana Environmental Reform Policy	Yet to be implemented	Not applicable	Delay in implementation as a result of the high level of bureaucracy within government

Policy	Implementation status	Progress/Achievements	Challenges
Ghana Environmental Reform Policy	Yet to be implemented	Not applicable	Delay in implementation as a result of the high level of bureaucracy within government
National Employment Policy	Yet to be implemented	Unemployment interventions such as GYEEDA and GEBSS have been made in anticipation for the approval of the policy.	Not applicable
NCCAS	Implementation in progress	Capacity building; action plans and monitoring and evaluation plans are at the verge of completion	Overreliance on donor supports
NWP	Implementation in progress	It has helped in developing legislative instruments and other supporting policy documents to effectively achieve its objectives.	Conflict of ownership on certain water resources in the country.
Sanitation Policy	Implementation in progress	Establishment of National Sanitation day and increment in Private Sector involvement in waste management have been achieved.	Lack of political commitment and funding needed for a smooth running of the policy
GIPC Act, 2013	Implementation in progress	High inflow of private investors into the country	Duplications in role by other state owned organizations.

5.1.5 Review of recent studies

Recent and ongoing studies (Ghana Green Economy Scoping, Green Economy Assessment) on Ghana, were reviewed. The Ghana Green Economy Scoping (GESS) report for Ghana has provided pivotal basic information in this report that underscore the quest for GE transition in Ghana. It gave an overview of the benefits that will be accrued from all sectors in the economy if Ghana embraces green economy paradigm. The forthcoming Green Economy Assessment (GEA) report of Ghana prioritised Agriculture, Forestry and Energy sectors, taking into consideration the significant contributions of these sectors to GDP, economic welfare, low carbon development and global competiveness.

Findings in the GEA report reveal that an implementation of green economy policies and investments in Ghana will bring about better overall performance in social, economic and environmental dimensions than the BAU scenario. At the macro-economic level, average growth rate is estimated to be 5.9 percent between 2013 and 2030 under the BAU, whilst that of GE is estimated to be 6.9 percent and 6.5 percent for the GE-LowThermal. Within the social sphere, the implementation of green economy strategies will lead to the reduction of the proportion of population below the poverty line to around 5% by around 2030, representing 2% lower than the baseline by 2030. Green economy scenarios will create 0.4 million (GE scenario) and 0.2 million (GE-Low Thermal scenario) more jobs than the BAU scenarios.

5.1.6 Mapping of existing projects and programmes

The matrix below (Table 5.2) classifies all the completed, ongoing and planned projects and programmes that have been reviewed into similar categories and identifies their linkages with PAGE.

Table 5.2 Completed, ongoing and planned projects/programmes in Ghana and synergy with PAGE

Classification	Project/Programmes	Funding Agency	Synergy with PAGE
Projects/programmes that unravel potential and constraints through Research	Solar Export Potential (SEP)	UNEP	Yes
	Green Economy in Biosphere Reserve (GEBR)	UNESCO	Yes
	China Ghana South-South Cooperation on RET Transfer (CGSSCRETT)	UNDP	Yes
	UNEP-GE Sequence	UNDP	Yes
Projects/programmes that unravel potential and constraints through Public platforms	Support for Development and Operation of COCOBOD's Ghana Cocoa Platform (SDOC)	UNDP	Yes
	Sustainable Business Forum (SBF)	SECO	Yes
	Natural Resources and Environmental Governance Programme (NREGP)	World Bank	Yes
Projects/programmes that focus on building capacities at either the institutional or community levels and improving welfare	Switch Africa Green (SAG)	EU	Yes
	Green Economy in Biosphere Reserve (GEBR)	UNESCO	Yes
	China Ghana South-South Cooperation on RET Transfer (CGSSCRETT)	UNDP	Yes
	Institutional support to integrate climate change into national development plans	UNDP	Yes
	Environmental Sustainability and Policy for Cocoa Production in Ghana (ESPCP)	UNDP	Yes
	Low Emission Capacity Building Programme (LECBP)	UNDP	Yes
	Energy Efficiency and Transformation of the Refrigerating Appliances Market in Ghana (EETRAM)	UNDP	Yes
	Capacity building for the elimination of Polychlorinated Biphenyls (CBEPCB)	UNITAR	Yes
	Collaborative Actions for Sustainable Tourism Project (CASTP)		Yes
	Ozone Project	UNDP	Yes
	Ghana National Low Carbon Development (GNLCD) Strategy	MESTI	Yes
	Sustaining Competitive and Responsible Enterprise (SCORE)		Yes
	Youth in Action on Climate Change Mitigation (YACCM)	Joint United Nations	Yes
	Labour Intensive Public Works (LIPW)	World Bank	Yes
	Improving Sustainable Value Chains for Exports from Ghana (SVCEG)	UNIDO	Yes
Projects/programmes which focus on greening businesses/industries in Ghana	Switch Africa Green (SAG)	EU	Yes
	Biogas Technology and Business for Sustainable growth (BTBSG)	UNIDO	Yes
	China Ghana South-South Cooperation on RET Transfer (CGSSCRETT)	UNDP	Yes
	Sustainable Business Forum (SBF)	SECO	Yes
	Sustaining Competitive and Responsible Enterprise (SCORE)	ILO	Yes
	Climate Innovation Centre Ghana (CICG)	DANIDA	Yes
	Youth in Action on Climate Change Mitigation (YACCM)	Joint United Nations	Yes
	UNEP-GE Sequence	UNEP	Yes
Projects/programmes which have controlling and Preventive initiatives	Energy Efficiency and Transformation of the Refrigerating Appliances Market in Ghana (EETRAM)	UNDP	Yes
	Capacity building for the elimination of Polychlorinated Biphenyls (CBEPCB)	UNITAR	Yes
	Collaborative Actions for Sustainable Tourism Project (COAST)	UNDP + UNIDO	Yes
Replacement or Procurement focused Projects/programmes	Energy Efficiency and Transformation of the Refrigerating Appliances Market in Ghana (EETRAM)	UNDP	Yes
	Sustainable Public Procurement (SPP)	SECO	Yes
	Sustainable Energy for All		Yes

5.1.7 Assessment on Country Data needs

Paucity of reliable data is a major challenge that cuts across the agriculture, energy, industry and environmental sectors in Ghana. This challenge, however, is much pronounced within the environmental sector. Data within the environmental sector are completely non-existent or existent, but replete with inconsistencies and missing information many years. For instance, data such as

waste generation and management over the years, deforestation and afforestation rates and costs of forest degradation per year are not available for all years since 1990. While appreciable amount of statistics exist at the agricultural and energy sectors, these data also lack information on vital indicators such as policy cost and yearly targeting. Thus, data that were obtained for the Green Economy Assessment of Ghana were lacking key elements to support the modelling exercise.

Despite the non-existing or incomplete situations of data in the country, there are no explicit survey plans to capture data to address these data paucity, which are considered essential for green economy modelling. It is therefore imperative for the GSS to be strengthened through the recruitment of environmental statisticians to concentrate on designing and running periodic surveys that will gather extensive data on various environmental indicators, useful for green economy analysis. Also, GSS in partnership with the agricultural sector institutions should gather data such as annual agricultural water demand, proportion of agricultural products that go waste from the farm gate to the consumer; and dynamics in usage of agricultural lands, etc., in subsequent surveys as they are relevant for green economy issues as far as agriculture is concerned. With respect to energy, a yearly update on RETs statistics by Energy Commission is paramount.

5.2 RECOMMENDATIONS FOR PRIORITY SECTORS/AREAS

To aid in Ghana's transition to GE, key interventions and measures need to be initiated within the following sectors in the economy: energy; agriculture; waste; forestry; and industry. Table 5.3 summarises the recommended interventions within each sector to catalyse a transition to a GE in the context of sustainable development in Ghana.

Table 5.3 Priority sectors and recommended actions

Sectors	Recommendations
Energy	Develop Green Energy Finance
	Invest in research and institutional capacity building to identify and remove bottlenecks hindering RETs development;
	Intensify RETs investment and dissemination;
	Intensify energy efficiency and conservation measures both at the demand and supply ends;
	Invest in research and capacity development on energy diversification and conservation;
	Strong political will to enforce implementation of the Renewable Energy Act and operationalize the Renewable Energy Fund
Agriculture	Promote large-scale adoption of conservation agriculture; and reform land tenure system;
	Promote large scale scientific irrigation farming
	Increase value-addition of agricultural products through investments in infrastructure and technology and strong farmer organizations
	Invest sustainable agriculture research and capacity development; Develop green agriculture finance and fiscal instruments
	Promote smart agricultural activities during off agricultural seasons
Waste	Invest in waste reduction, reuse and recycling;
	Develop and enforce fiscal policy instruments and regulatory tools;
	Ensure a strong regulatory framework;
	Promote sensitization awareness on the need for waste management in communities; and
	Establish Green Waste Funds to enable entrepreneurs to take advantage of increasing generation of waste.
Forestry	Implement and intensify/scale up existing programmes on Sustainable Forest Management (SFM);
	Invest in research and capacity development in SFM; and
	Develop fiscal policy/regulatory instruments for SFM.
Industry	Invest in industrial expansion to link strongly to other sectors of the economy most especially the agricultural and waste sectors in order to promote value addition of Ghanaian products and manage waste properly;
	Enforce environmental adaptation policies in order to control pollutions and emissions from industries;
	Promote the establishment of green industrial funds

5.3 RECOMMENDATIONS ON POLICY, IMPLEMENTATION AND CAPACITY GAPS

Policy	Implementation and capacity gaps	Recommendations
GSGDA II	High bureaucracy within government institutions in approving policy.	Strong Political will to shorten approval time and to facilitate its implementation.
PSDS II	Lack of funding and political commitment.	Government should create the enabling environment to attract private investors to help finance the policy implementation.
PPPs	Low technical expertise and low financial resources of local private investors to take advantage of the policy.	Readily available financial supports to local private investors from local banks.
NCCP	Limited funding investors to take advantage of the policy.	Public sector institutions should facilitate the preparations and activities needed to source the Global Green Fund to finance climate change initiatives and programmes.
Renewable Energy Act	Delay in setting up the RE fund	Government should facilitate the establishment of the RE fund in order to effectively finance RETs projects/programmes.
Ghana Environmental Reform Policy	High bureaucracy within government institutions resulting in the delay in implementation of the policy.	Strong Political commitment should be existed to shorten the time for approval of this policy.
National Employment Policy	Delay in approval and implementation of the policy by Cabinet and Parliament.	Government should help eliminate the high level of bureaucracy surrounding policy approval and implementation.
National Water Policy (NWP)	Conflict of ownership on certain water resources among state institutions, and between traditional leaders.	Government should empower the Ministry of Water Resource, Works and Housing to manage all water bodies in the country in order to effectively implement the policy.
Sanitation Policy	Lack of resources	Government should help establish a sanitation fund to finance sanitation initiatives and programmes. Government should also create the enabling environment to better enhance private sector involvement in sanitation managements in the country.
GIPC Act, 2013	Overlapping of functions by state institutions.	Clear distinction of institutional roles and functions in order to avoid duplications and conflicts.
GSGDA II	Inadequate funding	A pragmatic financing schemes centering on the creation of the rightful investments atmosphere for donors and private sector are needed.
National Environmental Policy	Over dependence on donors for support	Generation of funds locally by the introduction of polluter pays principle and tax levies on activities that are harmful to the environment.
Industrial Policy	Non-existence of progress report on programmes initiated during the implementation of the policy; and delay in the release of funds.	Annual reports on implementation status of policy should be undertaken as a matter urgency; and Strong commitment from donors and government is needed to facilitate the release of funds for policy implementation.
National Energy Policy and National Energy	Over dependence on conventional energy sources with little attention on RETs; and High inefficiency in power management.	High level of commitment is needed from Government through investment on RETs; and Education on energy conservation habits needs to be intensified.
National Export Strategy for the Non-traditional sector	Lack of funding	Government should create the enabling environment to attract private investors to help develop the non-traditional sector.
NCCAS	Over dependence on donors for support	Generation of funds locally by the introduction of polluter pays principle and tax levies on activities that are harmful to the environment.

5.4 LIST OF THE MAIN PARTNERS AND TYPES OF COOPERATION NEEDED FOR GE TRANSITION

Government; Private Sector; International Actors; Social Partners; Sector working groups; Institutional mechanisms; and Training initiatives (See Table 2.2) are needed for GE transition in Ghana. Beside their respective functions as denoted in Table 2.2, effective collaboration and strong commitment is essential to foster and sustain the transition process.

5.5 PROPOSAL FOR INSTITUTIONALIZING A GE POLICY INTO THE NATIONAL POLITICAL SYSTEM

Transition to a green economy has multiple benefits for Ghana. These include food and energy securities, sustainable jobs, which in turn will increase income, GDP and reduce poverty. GE transition also has the prospect of creating a clean and healthy environment for the enhancement of long-life and productivity. It is therefore proposed that for the actualization of these benefits, a multi-institutionalized stakeholder group, comprising of key players (as identified in Table 2.2) and stakeholders from the political divide is needed to draft a GE transition plan, GE policy backed by a plan for the country. This process will ensure that GE issues are not only well understood by political parties, but mainstreamed into different political parties' manifestoes.

It is further recommended that the GE transition plan be segregated into three phases, with each having clear distinct objectives with timelines, sources of resource and allocations, and assigned implementing and monitoring agencies for different programmes and activities. Phase one could focus on creating the enabling environment such as strengthening the institutional and regulatory structures for GE transition in the country and enhancing the awareness level of GE in the country. This could cover a period of, at most 2 years. The second and third phases could focus on the actual transition and sustainability stages, which could have implementation period of 5 and 3 years respectively.

APPENDIX 1: List of Institutions from which Stakeholder Outputs were obtained for Policies Evaluations and questions used

Institution	Name of Policy	Total No. of Policy
National Development Planning Commission (NDPC)	GSGDA, Public Private Partnerships (PPPs) policy	2
Private Enterprise Federation (PEF)	Public Private Partnerships (PPPs) policy, Private Sector Development Strategy (PSDS II)	2
Association of Ghana Industries (AGI)	Private Sector Development Strategy (PSDS II), National Employment Policy, Industrial Policy	3
Ministry of Trade and Industries (MOTI)	Private Sector Development Strategy (PSDS II), Industrial Policy, National Export Strategy for the Non-traditional Sector (NES), Ghana Investment Promotion Center Act	4
Environmental Protection Agency (EPA)	National Climate Change Policy, National Environmental Policy, Sanitation Policy	3
Ministry of Environment Science, Technology and Innovative (MESTI)	National Climate Change Policy, National Environmental Policy	2
Ghana Employers Association (GEA)	Industrial Policy, National Employment Policy	2
Ghana Energy Commission (EC)	National Energy Policy	1
Ministry of Energy and Petroleum (MoEP)	National Energy Policy	1
Ministry of Finance (MoF)	Fiscal Policy, Environmental Fiscal Reform Policy	1
Ghana Investment Promotion Centre (GIPC)	Ghana Investment Promotion Center Act	1
Ghana Revenue Authority (GRA)	Fiscal Policy, Environmental Fiscal Reform Policy	1
Ministry of Employment and Labour Relation (MoELR)	National Employment Policy	1
Trade Union Congress (TUC)	National Employment Policy	1
LABOUR COMMISSION	National Employment Policy	1
Ghana Export Promotion Council (GEPC)	National Export Strategy for the Non-traditional Sector (NES)	1
Center for Scientific Research (CSIR)	National Water Policy	1
Ghana Water Company Limited (GWCL)	National Water Policy	1
Ministy of Local Government and Rural Development (MoLGRD)	Sanitation Policy	1
Ghana Statistical Service (GSS)		
Ministry of Water Resources Works and Housing (MoWRWH)	National Water Policy	1
Institute for Environmental and Sanitation Studies (IESS)	Sanitation Policy	1

Questionnaire used for evaluation of all policies

1. Since the enactment of the policy what are the successes achieved with regards to achieving the policy objectives?

2. What are the challenges facing the implementation of the policy?

Questionnaire used at the Ghana Statistical Service for eliciting information on availability of National Green Economy Data

1. Does your Institution have readily available data for Green Economy Assessment for Ghana most especially on agricultural, industry/manufacturing, energy, waste, forestry, biodiversity, and transport sectors? and how sufficient are they? Please elaborate on your response per the sectors.

2. What survey plans does your Institution currently have with regards to collecting or updating data for Green Economy Assessment for Ghana?

3. What challenges is your Institution currently facing with regards to either collecting new sets of data or updating existing data for Green Economy Assessment for Ghana?

APPENDIX 2: Summary of all identified Projects and Programmes, Implementing Agency, Duration and Amount

Programmes	Agency	Duration	Amount of funds
Switch Africa Green	UNDP/UNEP	January 2014 to December 2017	EUROS 20,500000
Solar Export Potential Study	UNEP	2013 - 2015	US$50,000
Improving Sustainable Value Chains for Exports From Ghana	UNIDO	2013-2017	Not Available
Biogas technology and business for sustainable growth	UNIDO	September 2013 to August 2016	Not Available
Green Economy in Biosphere Reserve	UNESCO	3 Years	US$1,804,029.18
Sustaining Competitive and Responsible Enterprises	ILO-SCORE	2009-2013	Not Available
China Ghana South-South Cooperation on Renewable Energy Technology Transfer	UNDP	July 2014 to June 2018	US$2,720,000
Environmental Sustainability and Policy for Cocoa Production in Ghana	UNDP and Government of Ghana	3 year (January 2012 to December 2015)	US$1,701,600
Support for Development and Operation of COCOBOD's Ghana Cocoa Platform	UNDP	January 2013 to December 2015	US$1.2m
Low Emission Capacity Building Programme	UNDP	January 2011 (Commencing date in Ghana was in 2012)	US$40m
Promoting Energy Efficiency and transformation of the Refrigerating Appliances Market in Ghana	UNDP	May 2011 to June 2014 To December 2016	US$2m.
Capacity building for the elimination of Polychlorinated Biphenyls	UNDP/UNITAR	Dec. 2008 to Dec. 2013	Not Available
Collaborative Actions for Sustainable Tourism Project	UNIDO and UNEP		Not Available
Sustainable Public Procurement	SECO	Sept. 2014 to 2017	US$2.7m
Sustainable business forum	PWC		Not Available
Natural Resources and Environmental Governance Programme	World Bank	3 Years	US$40m.
Ozone project	UNDP	January 2013 to December 2014	US$139,100
Sustainable energy for all action plan	Government of Ghana		Not Available
Institutional support to integrate climate change into national development plans	UNDP	January to December 2012	US$350,000
Green Climate Fund (GCF) readiness project	UNEP and UNDP	2015 to 2016	US$2m

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PAGE PARTNERSHIP FOR ACTION ON GREEN ECONOMY

Ghana has achieved strong economic growth over the past two decades, prompted by strong cocoa production, construction and transport, a more robust service sector, continued increased gold output and the commercialization of oil, and has out-performed regional peers at reducing poverty and improving social indicators. However, a triple crisis from 2006 to 2009, centering on food, fuel and finance, stimulated the Government of Ghana to begin a transition to a more sustainable approach. Starting with the 2010 publication of Ghana Goes for Green Growth, the government recognized the importance of a shift to a green economy and drafted a National Energy Policy, including a strategy for renewable energies. Prior to joining PAGE, the Government of Ghana demonstrated further commitment to promoting environmental issues in policy design and passed a medium term development strategy, the Ghana Shared Growth and Development Agenda (GSGDA) II, and the National Climate Change Policy Framework to ensure a climate-resilient and climate-compatible economy while achieving sustainable development and equitable low-carbon economic growth.

This report provides an analysis of ongoing green economy related activities in Ghana and provides the basis for further actions leading to the eventual adoption of policy options, especially in the frame of the development plans and policies in the country. Actions identified, with the right potentials for greening Ghana's economy, can, with the right measures of monitoring, evaluation and implementation, propel Ghana into becoming a green economy nation.

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