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Ghana Case Study

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Country trend observation: forest condition, agriculture and food security

Country Location: The Republic of Ghana is located on the West Coast of Africa, situated between latitudes 4° and 11.5° north of the equator. It has a total area of 23,854,000 ha and is bordered by Togo on the east, La Côte D'Ivoire on the west, Burkina Faso on the north and the Atlantic Ocean on the south.

Climate: Ghana has a tropical climate and the annual rainfall decreases as the altitude increases to the north, where a savannah climate becomes dominant. The annual mean temperature ranges between 25°C and 27°C. It has an annual rainfall of 2,000 mm in the south western part but decreases towards the northeast, dropping to 1,000 mm at the northern border area.

Landuse: The traditional land uses in Ghana are small and large scale farming, forestry, wood fuel, cattle grazing, urbanization, tree plantations of exotic and indigenous species (cocoa, rubber, timber), and game/park reserves. The most predominant land use in Ghana is small scale agriculture. Commercial tree crop plantations include mango, citrus, kola nuts, oil palm, cashew and pawpaw.

Vegetation: Ghana's vegetation is classified as closed forest, northern savannah, coastal savannah and the coastal strand and mangrove formation. The country is roughly divided into the High Forest zone in the south, accounting for a third of the land area and the Savannah Zone in the north, accounting for two-thirds.

Forest Resources: 1.76 million ha (21% of High Forest Zone)¹ are permanently protected forest areas including game and wildlife sanctuaries and parks. Very little intact forest remain outside the protected areas. Community dedicated forest and sacred groves are mainly the protected forest in the off reserves. Timber logging operations take place within timber utilization contract areas in both on reserve and off Forest Reserves. Off reserved timber trees mostly stand on farmlands and fallow land areas. Timber allocation in the off reserve is mostly through salvage permit. Ghana is endowed with bamboo which grows naturally in the wild. The most prevalent is the Vulgaris species. The Western region of Ghana holds the highest stock of natural bamboo reserves estimated at over 60%².

Rural Livelihoods and Income: Most of the rural population depends on the forests for their livelihood as forestry plays a significant role in the provision of food, clothing, shelter, furniture, potable water supply sources and bushmeat, thus providing livelihood for over 2.5 million people³. Small and Medium Forest Enterprises depend on forest to stay in business and supply wood and wood products to the domestic market.

¹ Forest Resource Assessment, Ghana Profile, 2015

² Earth Institute, Columbia University, August 2013: Investment Opportunity in Kumasi, Bamboo Cultivation and Processing

³ Forest Resource Assessment, Ghana Profile, 2015

Contribution of Forest to National Income: Agriculture⁴, including forestry, is the backbone of the Ghanaian economy. As at 2014, it provided 22% of the Gross Domestic Product, 50% of export earnings and 45.5% and 50.9% of total employment in agricultural production and processing respectively⁵. The export of timber and other forest products accounted for 11% of Ghana's export earnings and 6% of the GDP in 2000. The formal sector is responsible for providing livelihood to around 100,000 people, but many more earn some form of income from the forests. In the recent years timber export has fallen, with 2010 seeing a fall of 5.4%. However, while there was a decline in the export, the country still saw an increase in revenue for the same period. In 2010, Ghana earned 137.9 million Euros through timber export, when compared to 128.2 million Euros in 2009. Forest value added to GDP in 2011 was recorded at \$929,400 (GhC 1,549,000) and \$650,513 (GhC 2,537,000) in 2014⁶.

Changes in Forest Area: Ghana has had growth in forest area⁷ of 8.6% from 1990 to 2015 representing a total of 710,000ha in 25years. Forest area increased by 282,000ha representing 3.3% from 1990 to 2000 which is the highest in 25years. The growth in forest area then remained averagely at 1.5% representing an average of 143,000ha in every 5years from 2000-2005, 2005-2010 and 2010-2015⁸. Thus Ghana land area under forest is increasing through plantation development even though degradation in the closed forest is on the rise.

Forest degradation rate: Ghana total forest area of 8,627,402 ha in 1990 and 9,195,137 in 2010 went through varying rates of degradation over the 25 years between closed⁹ and open¹⁰ forest. From 1990 - 2000 Ghana closed forest degraded by 387,256 ha and 531,364 ha from 2000 - 2010. Between 2000 and 2010, the closed forest reduced from 2,317,166 ha to 1,785,802. ha. Closed forest is depreciating at the rate of 192,648ha per 5 years¹¹. Ghana's open forest on the other hand expanded by 668,462ha from 1990 - 2000 and 817,894ha from 2000 - 2010. Since 1990, the forest degradation rate is 45,931.ha per annum¹². Thus while there is an expansion in forest area as a result of plantations development in forest and non-forest lands, the density of forest cover is reducing giving way to a reducing close forest cover and an increasing open forest cover. This could be attributed to logging in forest reserves¹³ and conversion of forest in the off reserves¹⁴ for agricultural purposes. The net effect is that Ghana could end up with an expanded forest land area but the forest would have low density in terms of canopy formation.

Forest establishment: Forest expansion was a total of 28,000ha in 2005 and 28,000ha in 2010 totaling 56,000ha. Out of this total natural expansion through natural regeneration was 8,000ha in

⁴ Agriculture includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

⁵ Ghana Statistical Service, Revised 2014 Annual Gross Domestic Product, June 2015 Edition

⁶ Ghana Statistical Service, Revised 2014 Annual Gross Domestic Product, June 2015 Edition

⁷ Growth in forest area refers to the increase in land size under forest cover and/or increase in forest density

⁸ Forest Resource Assessment, Ghana Country Profile, 2015

⁹ Closed (Dense) Forest where the forest canopy cover is greater than 60%

¹⁰ Open Forest where the forest canopy cover is between 15% and 60%

¹¹ Forest Resource Assessment, Ghana Country Profile, 2015

¹² Forest Resource Assessment, Ghana Country Profile, 2015

¹³ Forest reserves are areas statutorily demarcated government reserves and managed by the FC

¹⁴ Off reserves refers to land areas outside the government reserves which are mainly community land

2005 and 8,000ha in 2010; reforestation was 20,000ha in 2005 and 20,000ha in 2010; and artificial expansion¹⁵ was 20,000ha in 2005 and 20,000ha in 2010¹⁶. The total in forest expansion in last 25years is 235,039ha with the highest of 168,910ha between 2002 and 2012 under the national plantation development programme¹⁷. This largely has contributed to the increase in area under forest cover over the period. While forest degradation is estimated at 45,931ha per annum, forest expansion is estimated at 20,000ha per annum under the Ghana Forest Plantation Strategy. **Thus the net value of forest cover changes in Ghana is 24.37 over the period (calculated as deforestation+reforestation/afforestation = 918,620+56,000/40,000).**

Agriculture: Agricultural crops, including yams, grains, cocoa, oil palms, kola nuts, and timber, form the base of agriculture in Ghana's economy. Cocoa is Ghana's principal agricultural export. In 2010, Ghana's cocoa bean exports were valued at \$2,219.5 million. Ghana gross agricultural production value in 1991 was \$9.57billion constituting \$9,558.83billion for food products and \$1,383,000 for non-food products. Agricultural production values subsequently have been reducing and was \$3,046.68billion constituting \$3,041.27billion for food products and \$5,410,000 for non-food products in 2000. It then started to rise in value again reaching \$6,349.28billion constituting \$6,340.92billion food products and \$8,360,000 non-food products in 2005. The value hit a record high over the 25year period in 2011 at \$ 12,677.66billion constituting \$12,664.35billion for food products and \$1,331,000 for non-food products¹⁸.

Food Security: Ghana per capita food supply¹⁹ was recorded at 2,377 kcal/capita/day in 1996 and has been increasing over the period. It was recorded at 2,534 kcal/capita/day in 2001, 2,750 kcal/capita/day in 2006 and 3,003 kcal/capita/day in 2011. The increasing per capita food supply corresponds to a declining percentage prevalence of undernourishment. From 1999 – 2001, Ghana recorded 17% prevalence of undernourishment, 10% from 2004 – 2006, 6% from 2007 – 2009 and -5% from 2010 – 2012²⁰.

Agroforestry: Farming is the predominant occupation in the forest zone of Ghana where many types of farming practices have evolved over the years. These farming practices involve the use of trees either simultaneously or sequentially with agricultural crops as observed in agroforestry. This notwithstanding, conscious practice of agroforestry is not widespread in the forest zone of Ghana and has therefore prevented farmers over the years from exploring the full potential of this land use system following tree tenure issues which deny ownership rights of naturally regenerated trees to farmers. With the introduction of the Timber Resource Management Act that gives ownership of planted trees to famers, Community Resource Management Areas (CREMA) and cocoa certification, a number of cocoa farmers are integrating economic trees on their farms in the high forest zones.

¹⁵ Artificial expansion of forest refers to increase in forest cover under areas that were originally not forest land

¹⁶ Forest Resource Assessment, Ghana Country Profile, 2015

¹⁷ Ghana Forest Plantation Strategy 2015 - 2040

¹⁸ FAO Stats, Ghana Book

¹⁹ Calorie supply per capita is amount of food available for consumption, measured in kilocalories per capita per day. This figure is reached by dividing the total available food supply for human consumption by the population.

²⁰ FAO Stats, Ghana Book

In-depth country assessment

A. Context Assessment

2.1. Economic development

Country's structure of economy and income:

Government efforts to restore the productivity of the Ghanaian economy since 1990 have been directed toward boosting the country's exports. Ghana's GDP has registered steady growth, most of it is attributable to the export sector, including cocoa and minerals, timber and recently oil.

GDP Trend: Agriculture continues to be the bedrock of Ghana's economy, accounting for more than 48% of GDP in 1991. In general Ghana's GDP has been increasing since 1990. It increased from \$9,982.62billion in 1990 to \$11,223.80billion in 1991 but declined below the 1990 figure at \$8,728.39billion in 1994. GDP increased again steadily from 1995 and recorded \$12,368.70billion in 1999. Ghana's lowest GDP over the 25years was recorded at \$7,985.32billion in 2000. GDP then recorded consistent increase from 2001 (\$8,517.41billion) to 2013 (\$47,829.60billion). Ghana's GDP has always been increasing except in 1993, 1994, 1997, 2000 and 2009 when it recorded declines²¹.

Driving Forces of Ghana's Economy: The forces that have been driving Ghana's economy in the last 25years include political stability, policy interventions and the economic composition. Ghana's GDP has largely depended on exports mainly in the agricultural sector since 1990. Ghana's economic composition now adds oil after Ghana joined the league of oil producing countries in 2010.

Sectors Contributing to GDP: The sectors contributing to GDP in Ghana are mainly Agriculture at 21.5%, Industry at 26.6% and Services at 51.9% in 2014. Agriculture has been a key contributor to GDP since 1990 – 2010 mainly relying on cocoa exports but has recorded a consistent decline from 31.8% in 2009 to 21.5% in 2014²². Following the discovery of oil in Ghana, oil exports became a major contributor to GDP in Ghana. Agriculture has been the mainstay of Ghana's economy and a major GDP contributor since 1990. The contribution of the services sector has been rising while the agriculture sector records a decline over the period.

Trend of Gross National Income: Ghana has maintained an ever increasing GNI per capita from 1990 to 2015. Ghana recorded GNI per capita of \$1,220billion in 1990, \$1,480billion in 1995, \$1,700billion in 2000, \$2,250billion in 2005 and \$2,980billion in 2010. Ghana attained the highest GNI per capita over the period at \$3,960billion in 2015²³.

Public Investment in Agriculture: Government investment in the agriculture sector over the last 25years has been directed at agricultural research and development. Government investment was recorded at \$40,000,000 in 1990, \$41,000,000 in 2000 and \$95,000,000 in 2007. Thus from 1990,

²¹ FAO Stats, Ghana Book

²² Ghana Statistical Service, Revised 2014 Annual Gross Domestic Product, June 2015 Edition

²³ FAO Stats, Ghana Book

government investment in the sector has been increasing significantly. The agriculture share of government expenditures was 0.40% in 1990, 0.70% in 2000 and 0.40% in 2007²⁴.

Official development assistance in the agriculture sector was \$60million in 1990, \$146million in 2000 and 126million in 2010. Thus official development assistance in the sector increased more than double of the value in 1990 by 2000 and decreased by \$20million in 2010²⁵.

Agriculture Value Added in Total GDP: The Ghana agriculture value added to GDP has been fluctuating but ranged between 40-45% from 1990 to 1998 and again in 2003 to 2005. The period of 1990 to 2005 has seen the highest agriculture value added to GDP. It dropped to between 29-30% from 2006 to 2010 and declined further to between 20-26% from 2011 to 2014. 2014 has recorded the lowest agriculture value added to GDP since 1990. This represents a decline in agriculture contribution to GDP since 2005²⁶.

Forestry Sector Value Added in Total GDP: Forestry added value to GDP has also been fluctuating between 4-14% with the highest in 2003 at 13.8%. The lowest was in 1991 at 4.6%. The periods from 1994-1998 and 2000-2005 has recorded the highest forest value added to GDP ranging between 9-14%. Forest value added to GDP ranged between 4 – 7% 2006 - 2014²⁷.

Remittance Inflow Trend: Remittance inflow has shown remarkable increase since 1990 with the least being \$6million in 1990 and attained \$17.21million in 1995. It recorded \$32.39 in 2000 and increased to \$99.18million in 2005. Remittance inflow recorded over \$100million from 2006 to 2014. 2011 recorded the highest at \$151.60million since 1990. Ghana's remittance as share of GDP was recorded at 0.25% in 2013²⁸.

2.2. Demography

2.2.1. General demographic information

Changes in Population Size: Ghana's population has generally increased consistently since 1990. In 1990 Ghana's population which was 14,628,693, increased to 16,760,926 in 1995 and reached 18,825,034 in 2000. Ghana's population hit 20million and above in 2003 and reached 24,262,901 in 2010 and by 2014 Ghana's population was recorded as 26,442,178. From 1990 to 2000, Ghana's population growth rate was averagely 2.7%. The growth rate was 2.4% from 2000 – 2010 and estimated at 2.5% from 2010²⁹.

Migration in Rural and Urban Population: Ghana has experienced increasing trends in rural to urban migration since 1990 resulting in increase in urban population. National statistics of urban population growth which stood at 36.4% in 1990 rose to 44% in 2000. By 2005 urban population

²⁴ FAO Stats, Ghana Book

²⁵ FAO Stats, Ghana Book

²⁶ FAO Stats, Ghana Book

²⁷ FAO Stats, Ghana Book

²⁸ FAO Stats, Ghana Book

²⁹ Ghana Population and Housing Census, 2010 and FAO Stats

had soared to 47.7%, in 2010 51.2% and reached 53.2% in 2013. Ghana's urban population from 1990 – 2000 increased by 8.4% but increased from 2000 – 2010 by 14.8%³⁰.

Annual rural population growth in Ghana was last measured at 0.71% in 2013. Annual rural population growth was measured at 1.7% in 1990, 1.0% in 2000 and 0.8% in 2010. Percentage rural population in Ghana has consistently been decreasing year by year with a corresponding increase in urban population. In 1990 Ghana rural population was 63.6%, reduced to 56.0% in 2000 and 48.5% in 2010. Thus from 1990 – 2000, rural population in Ghana reduced by 7.6% and recorded a further reduction of 7.5% from 2000 – 2010. An estimated 2.5 million of rural people live and depend on forest in Ghana³¹.

2.3. Agricultural tenure, investment, production, productivity and trade

2.3.1. Agricultural Tenure

Since the past 25 years, land holding patterns in the agriculture sector has changed over time along arable land, land under permanent crops and forest cover. Arable land has been increasing indicating an expansion in farmland holdings. Statistics of annual growth rate of arable land was recorded at 3.03% from 1997 – 2002 as the highest over the 25 year period. From 2002 – 2007 annual growth rate of arable land increased marginally at 0.57% and increased again to 1.79% from 2007 – 2012. The increase in arable land also corresponds to an increase in land under permanent crops recording averagely half of the total arable land over the period. Following the trend in conversion of forest cover to arable lands, forest cover has reduced over the period. Averagely, annual reduction in forest cover from 1997 to 2012 is about 2%³². While Ghana has an expanding area of forest, forest cover changes from closed forest to open forest has been reducing mainly due to conversion of forest area to arable land.

This period also corresponds to increase investment in agriculture. The number of machines per 1000ha of arable land under permanent crops was recorded at 0.04 in 1990 and 0.01 in 1995 but that of agricultural tractors was recorded 0.46 in 1990, 0.40 in 1995, 0.32 in 2000 and 0.27 in 2005. The period has also recorded an increase in the area equipped for irrigation from 10,000ha in 1997 to 31,000ha in 2002, 34,000ha in 2007 and 34,000ha also in 2012. In 2002, agriculture recorded the highest utilization of freshwater (66.4%) in Ghana ahead of industrial (9.6%) and domestic uses (23.93%)³³.

2.3.2. Investment

Public spending in the agriculture sector from 1990 directed at agricultural research and development was recorded at \$40,000,000 in 1990, \$41,000,000 in 2000 and \$95,000,000 in 2007.

³⁰ FAO Stats, Ghana

³¹ Ghana Population and Housing Census, 2010

³² Ghana FAO Stats Country Profile

³³ Ghana FAO Stats Country Profile

At the same time government investment in the agriculture sector was \$6million in 1990, increased to \$39million dollars in 2000 and hit \$54million in 2007. Thus since 1990, government investment in the sector has been increasing significantly. The agriculture share of government expenditures over the period was 0.40% in 1990, 0.70% in 2000 and 0.40% in 2007³⁴. This implies that government spends more on agriculture research and development than direct agriculture investment. Ghana agriculture sector is made up of mainly smallholder farmers as government does not engage in state owned agriculture production systems. For example, even though Ghana is among the leading producers of cocoa, the Government does not have cocoa plantations on its own. It rather invest in cocoa research and development programmes and create the needed policy environment for increase cocoa production by smallholder cocoa farmers.

2.3.3. Land productivity

Trend of Agriculture Production: Total agriculture production values in Ghana have been increasing in figures from 1990 to date. In 1997, it was recorded at \$3.715million increasing to \$4.805million in 2002, \$5.349million in 2007 and \$7.220million in 2012 representing an annual growth rate of 5.28% from 1997 – 2002, 2.17% from 2002 – 2007 and 6.18% from 2007 –2012. Thus the highest agriculture productivity value from 1990 was recorded at 6.18% from 2002 – 2012³⁵.

Change in Main Type of Agricultural Production³⁶: Crop production per ha of landuse in Ghana experienced varying values from 1990. It hit \$641 in 1997, \$704 in 2002, \$697 in 2007 and \$908 in 2012 representing an annual rate of 1.89% from 1997 – 2002, -0.2% from 2001 – 2007 and 5.43% from 2007 – 2012. Thus over the last 25years, crop production lowest was in 1997 and the highest in 2012.

Food production, however, increased steadily over the period recording \$3.674million in 1997, \$4.783million in 2002, \$5.320million in 2007 and \$7.175million in 2012. This represent an annual growth rate of 5.42% from 1997 – 2002, 2.15% from 2002 – 2007 and 6.17% from 2007 – 2012.

Quantities of production in the main types of agriculture in Ghana show different trends. The production in cereals was 1770million tons in 1996 but reduced to 1627million tons by 2001 representing -1.67% growth rate. It however increased to 1919million tons in 2006 and 2619million tons in 2011 representing 6.42% annual growth rate. Between 2001 and 2006, it recorded an annual growth rate of 3.36%.

Production in oil crops had steadily increased from 202million tons in 1996 to 261million tons in 2001, 356million tons in 2006 and 349million tons in 2011 representing an annual growth rate of 5.26% from 1996 – 2001, 6.4% from 2001 – 2006 and -0.92% from 2006 – 2011. Thus from 1990, various agriculture production levels were realized in terms of quantities. From 1996 – 2001, oilcrops registered the highest annual growth rate (5.26%), followed by paddy rice (4.95%) and meat (3.21%). The lowest was coffee at -26.26%, followed by coarse grain at -2.75%, cereals at -1.67% and cocoa beans at -0.65%. From 2001 – 2006 cocoa beans recorded the highest annual

³⁴ FAO Stats, Ghana Book

³⁵ Ghana FAO Stats Country Profile

³⁶ Ghana FAO Stats Country Profile

growth rate of 13.48%, followed by oilcrop at 3.36% and coffee at 4.75%. From 2006 – 2011, paddy rice recorded the highest annual growth rate of 13.17%, followed by cereals at 6.42%, coarsp grain at 5.24% and meat at 4.5%. Coffee recorded the lowest at -6.4%, cocoa beans recording -0.94% and oilcrop -0.92%.

Agriculture Productivity³⁷: Agriculture productivity of cereals recorded its lowest in 1990 at 9,892hg/ha and the highest in 2010 at 18,143hg/ha. From 1990 – 2010, it recorded the highest in 1996 at 13,892 hg/ha but from 2000 – 2010, the least recorded was 11,861 hg/ha in 2001.

Agriculture productivity of roots and tubers recorded its lowest in 1990 at 75,522 hg/ha and has been increasing on the average recording the highest in 2013 at 156,324 hg/ha. The highest from 1990 – 2000 was 108,598 hg/ha in 1995. From 2000 – 2010, it recorded the highest at 136,083 hg/ha in 2010 but has been increasing consistently from 2005 to 2013.

Agriculture productivity of pulse recorded the lowest at 941 hg/ha in 2000 but recorded 1,000 hg/ha consistently from 1991 – 1997 and in 1999. From 2000 – 2010 the highest recorded was 5,328 hg/ha in 2009. The highest recorded over the 25year period was 6,033 hg/ha in 2011.

Agriculture productivity of tree nuts recorded the lowest in the period at 2,158 hg/ha in 1991. The highest from 1990 – 2000 was 4,590 hg/ha and from 2000 – 2010 was 5,920 hg/ha in 2007. That of oilcrops recorded the lowest in 2004 at 3,539 hg/ha while the highest is 5,626 hg/ha in 1991. Fibre crops recorded the highest at 4,400 hg/ha in 2007 while the lowest is 2,486 hg/ha in 2001.

Agriculture productivity of vegetables and melons recorded the highest at 91,256 hg/ha in 2013 with the lowest at 3,866hg/ha in 2000. It recorded a rise consistently from 2003 to 2013. Fruit production (except melons) has increased steadily since 1990 recording the lowest at 59,047 hg/ha in 1990 and the highest in 2013 at 130,602 hg/ha. Citrus fruits recorded its lowest at 54,024 hg/ha in 1990 and has been increasing on the average with the highest at 292,145 hg/ha in 2013. Agriculture productivity of coarse grain recorded the lowest in 1990 at 9,489 hg/ha and the highest at 16,997 hg/ha in 2010. Oilcakes recorded its lowest at 2,310 hg/ha in 2007 and the highest at 3,853 hg/ha in 2002.

2.3.4. Trade³⁸

In 1990, import volume of wheat was 170,300 tons, increased to 250,302tonnes in 2000 and reached 400,316tonnes in 2012. This represents an increase of 80,002tonnes from 1990 – 2000 and 150,014tonnes from 2000 to 2012.

113,000tons of rice was imported in 1990 which increased to import volume of 166,828tonnes in 2000 and 195,290 in 2012. This represents an increase in export of rice of 82,290tons from 1990 to 2012. It increased by 53,828tonnes from 1990 to 2000 and 28,462tonnes from 2000 to 2012. Refined sugar import value was 79,000tonnes in 1990, increased to 106,608 in 2000 and reached 190,109tonnes in 2012.

³⁷ FAO Stats, Ghana Book

³⁸ FAO Stats, Ghana Book

In 1990, Ghana imported more wheat (179,300tonnes) than other products in terms of quantity followed by rice, sugar, flour and maize recorded the lowest at 8,000tonnes. In 2000, wheat again recorded the highest import quantity of 250,302tonnes followed by rice, sugar, flour and maize recorded the lowest at 19,602tonnes. In 2012, rice recorded the highest import quantity at 400,316 tonnes, followed by sugar, wheat, meat and maize the lowest at 113,213tonnes.

In 1990, Ghana incurred the highest expenditure on sugar import at \$39,000 followed by rice at \$35,000, wheat at \$27,000, cotton at \$16,000 and meat at \$7,200. In 2000 rice imports was the highest at \$51,765 followed by wheat at \$40,469. Rice again ranked the highest import in 2012 at \$274,724 followed by meat at 185,996, sugar, oil palm and tomatoes at \$90,282.

Cocoa beans recorded the highest export quantities in 1990 (248,970tonnes), 2000 (360,250tonnes) and 2012 (585,929tonnes). The export quantities of cocoa beans generally increased over the period making cocoa the leading export crop from Ghana. In 1990, pineapples ranked second after cocoa beans at 9,440tonnes, followed by cocoa butter, cola nuts and cocoa powder & cake. In 2000, pineapples again ranked second after cocoa beans at 26,173tonnes, followed by cocoa powder & cake, cocoa butter and oil palm. In 2012, cashew nuts ranked second after cocoa beans at 102,352tonnes followed by oil palm & kernel and oilseeds.

Cocoa beans recorded the highest values in export in 1990 (\$357,000), 2000 (\$404,200) and 2012 (\$1,973,913). This represents a rapid increase rising as much as \$1,569,713 from 2000 to 2012. Cocoa butter ranked second in 1990 at \$24,556 and in 2000 at \$31,104. Cashew nuts ranked second in 2012 at \$207,918. Rubber was the lowest in 1990 at \$2,400, cigarettes the lowest in 2000 at \$9,000 and cotton the lowest in 2012 at \$56,894.

Import Dependency Ratio: Ghana food import dependency ratio has generally been increasing steadily from 39% in 1996 and 39% 2001 to 64% in 2006.

Trends in Cereal Import Dependency Ratio: Ghana's cereal import dependency ratio was 26.4 in 1990 and reduced to 11.8% in 1996. It then began to rise from 1997 at 13.2% hitting a record high at 36.6% in 2004. It started to decline again in 2005 at 36.3% till 2010 when it recorded 21.6%.

Share of Food in Total Trade: Ghana share of food in total trade imports recorded the lowest in 1996 at 3.49% increasing to 6.27% in 2001 and recording the highest at 7.66% in 2006 but declined slightly to 4.84% in 2011. In terms of food exports it recorded the highest in 1996 at 17.26% followed by 13.28% in 2006, 8.75% in 2011 and the least in 2001 at 8.21%.

2.3.5. Food Assistance:

Food Aid: The forms of food aid Ghana received over the period are: blended and mix, bulgur, wheat, butter oil, cereals, coarse grains, dried fruits, edible fat, fish & fish products, meat & meat products, milk, non-cereals, other dairy products, other non-cereal products, pulse, sugar, vegetable oils and wheat & wheat flour. Ghana received food aid of blended mix, rice, vegetable oils, pulses, non-cereals and cereals in different quantities since 1990 to 2013. Ghana does not have a policy on food assistance. Cereals constituted the highest quantity supplied in 1990 at 76,842 tons, followed by rice at 34,998 tons and wheat (+wheat flour) at 33,593. Dairy products

recorded the lowest at 9tons in 1990. Cereals has always recorded the highest over the period reaching 61,794tons in 1995, 96,898tons in 2000 but reduced to 39,524tons in 2005 and 2,760 in 2010. The highest supply of cereals over the period was in 2000 and the least 2010. Wheat and wheat flour recorded the second highest quantities of supply from 1995 to 2005. From 44,377tons in 1995, it rose to 67,244tons in 2000 and declined to 22,200tons in 2005. Rice highest supply figures over the period were recorded in 1993 at 58,666tons, 1990 at 34,998tons and decline to 12,454tons in 1995. Blended mix supplies was the second highest in 2010 at 1,770tons. As at 2014 only 199tons of non-cereals and 199tons of vegetable have been recorded.

2.4. Forest tenure, productivity and trends

2.4.1 Forest tenure

The 1962 Concessions Act vest naturally regenerated trees in the president. All trees that are naturally regenerated in both forest reserves and off forest reserves are vested in the president on behalf of the people of Ghana. The Forestry Commission (FC) is mandated to manage and regulate the sustainable use of forest resources on behalf of the president.

Under diverse statutory arrangements, the government can establish or replant trees and timber crops in forest reserves as model plantations or with the help of hired labour and supervision as Government Plantation Development Project or with the help of local farmers as Modified Taungya System. Similarly, the government can also allocate parts of degraded forest reserves to private companies for plantation development as prescribed by State allocated degraded lands.³⁹

Model plantation: are research oriented small plantations established by FC plantation managers to undertake mixed species trials and experiment with various planting designs, tree spacing and tending regimes. For such plantations, nothing is specified with respect to ownership, control, management and use of the timber proceeds from these model plantations, which therefore lie with the state who planted them.

Government Plantation Development Plan/Project: Using available funding through Highly Indebted Poor Countries (HIPC) initiative, the state established industrial plantations on degraded forest reserve lands. Plantation workers and supervisors were hired and paid. However responsibility for management of these plantations lies with the Forestry Commission. According to the annual report of the National Plantation Development Program the plantations established under this scheme are owned by the state and the respective landowners who are entitled to royalties⁴⁰.

State allocated degraded land: The state has allocated proportions of degraded reserves to private entities for the establishment of forest plantations. This is encouraged by offering the majority of the revenue from the harvest of timber to the private entity who receives 90%. The remaining 10%

³⁹ Forestry Commission Act, 1999 (Act 571), section 2 (2)(c)(iii)

⁴⁰ National Forest Plantation Development Program, Annual report 2011, Ministry of Lands and Natural Resources

has to be paid to the state. The private entities therefore have ownership, control, management and use rights over the planted timber, they just need to share a (small part) of the benefits with the state. This arrangement does not allow a conversion of the land from forest.

Modified Taungya System: farmers are allocated shares of land in degraded parts of forest reserves and are given seedlings to reforest the area. They are also permitted to plant food crops on the same land during the first 1 - 3 years of plantation establishment until the forest cover closes (intercropping). In some cases the terms and conditions have been laid down in signed agreements. Ownership, management and control reside in the Forestry Commission. Benefits from the trees are shared at 40% to the farmer, 40% to the FC, 15% to the landowners/traditional authority and 5% to the community. The farmer retains 100% benefits from the crops cultivated. This is covered by the Forest and Wildlife Policy 2012 and the Forest Commission Act. The farmer is required to work with the allocated area and tender the trees to grow. The farmer has no right to convert land under this arrangement.

Ghana forest laws entitle 100% ownership and benefits of planted timber or forest in the off reserves to the planter subject to other such laws applicable. The planter could be an individual, community, group, organization, private or government.

Expanded plantation development program: Recently the National Forest Plantation Development Program has started to also support off-reserve plantation development through the Expanded Plantation Development Program to ensure that Districts/Municipals without degraded forest reserves would also benefit from job opportunities being created through the Plantation Development Program⁴¹. Ownership, control, management (with the help of hired plantation workers and supervisors) and use rights lie with the state and the respective landowners who are entitled to royalties⁴².

Private off reserve plantations: These are plantations that have been established without any intervention from the state. Ownership, control, management and use rights therefore lie absolutely with the landowner if he was also the planter. If the trees were not planted by the landowner the agreement between him and the planter will determine who owns, controls and manages the timber resources and the use rights that lie on them.

Dedicated Community forest and sacred groves: Community dedicated forest and sacred groves⁴³ are the only protected forest area in the off reserve constituting about 623,694ha. Currently, the only notable legislation which appears to enforce the rights of dedicated forest owners is Act 617, the Timber Resources Management Act 617 (Amendment) Act, 2002, which states under Section 1 (3) (b) that "No timber rights shall be granted in respect of land with any timber grown or owned by any individual or group of individuals". This provision at least gives some respite since

⁴¹ National Forest Plantation Development Program, 2011 Annual Report, Ministry of Lands and Natural Resources

⁴² National Forest Plantation Development Program, 2011 Annual Report, Ministry of Lands and Natural Resources

⁴³ Community dedicated forest and sacred groves are a community forest land that is protected by the community for communal interest. These are mainly of social importance such as shrine, burial grounds, etc.

government shall not arbitrary grant timber rights over recognized dedicated forests and sacred groves.

Community Forestry: Ghana does not have community forestry experience in its true sense where community forest land is owned, managed and controlled by communities with all the benefits accruing to community members. Even with dedicated forest and sacred groves that are managed by communities, they do not have control of the utilization of trees within these areas. Thus community managed is limited to the social and environmental benefits they derive from these areas.

Shifts in Forest Tenure in Relation to Ownership and Management: Forest tenure in Ghana has not undergone any major change since 1990. Naturally regenerated trees are vested in the president and management and control has been the Forestry Commission and its designated divisions. Legislation however recognized the right to a planted tree by individuals or groups in the off reserve but requires one to register with the Forestry Commission. This has resulted in the promotion of cocoa agroforestry and cocoa certification programmes that encourage farmers to integrate economic trees on their farms for biodiversity, ecological services and economic benefits. This is considered one contributory factor to the increases in forest expansion by private individuals in the off reserves. Private off reserve plantations constituted about 44,198ha by 2002. Out of a total of 168,910ha of plantation developed under the National Plantation Development Programme by 2012, 29,459ha were private⁴⁴. It however remains to be inventoried, the number of trees integrated on cocoa farms by farmers as a result of ownership rights to planted trees, the promotion of cocoa agroforestry and CREMA.

Government introduced the modified taungya systems as a way of reforesting degraded forest reserve areas where the Forestry Commission manages and control. The modified taungya system was an improvement of the taungya system with benefits sharing arrangement for the planted trees that included the beneficiary farmers (the planters). Community Resource Management Areas (CREMA) have been established as a collaborative approach for supporting the establishment of wildlife corridors and the adaptation of supportive farming practices for wildlife conservation and economic benefits to communities. CREMAs are outside the reserves and along key wildlife reserves and ownership, management and control resides in the communities.

The district quota system for off-reserve logging is no longer practised by the FSD as much of the off reserve forest has been depleted leaving small fragmented areas. Majority of the timber harvesting in the off reserve is done through salvage permit which is not subject to competitive bidding as opposed to the Timber Utilization Contract (TUC). The Salvage Permit is a legal permit under the laws of Ghana and the Ghana VPA mainly issues for the salvaging of economic trees that will be affected by development projects such as road construction, urbanization, agricultural cultivation, etc.

Forest Cover Changes and Tenure Types: In 1990 there was no area designated as convalescence⁴⁵ forest. In 1995, large portions off-reserve were officially designated as timber

⁴⁴ Ghana Forest Plantation Strategy, 2015 - 2040

⁴⁵ Convalescence Protection Area is a timber production area that has been temporarily designated as protected area to allow the area to recover after extensive logging or wildfires.

production areas under the district felling quota regime for off-reserve as a way of regulating timber exploitation in off-reserve areas. All Forest Reserves, National Parks, Game Production Reserves and Wildlife Sanctuaries are permanent government protected areas backed by law and are supposed to be maintained, managed for their various purposes that established it and preserved at all times. The total forest land (both on reserve and off reserve) stands at 9,195,137 as at 2010.

Forest area under Forest Stewardship Council (FSC) certification in Ghana covered 150,510ha in 2002. An additional 1,780ha of forest also achieved FSC certification in 2003 and 1,570ha in 2012. The highest forest area to achieve certification was 242,420ha in 2004. Thus a total of 396,280ha of forest in Ghana is currently under FSC certification⁴⁶.

2.4.2 Investment in the forest sector

Volume and Trend in Investment in the Forest Sector: Since 1990, there have been several efforts from development partners to assist the sector improve on its contribution to national socio-economic development. An amount of over US\$ 643 million has been spent in the forest sector at an annual average of US\$ 32 million between 1989 – 2009. These were mainly funding for the following programmes: the Forest Resource Management Programme (FRMP 1989-1997); the Natural Resources Management Programme (NRMP 1999-2008); and the Natural Resource and Environmental Governance (NREG 2008- date). These funding have been channelled for forest management and resource development (including reforestation programmes), institutional capacity building, governance (including policy and institutional reforms), livelihoods support, and biodiversity conservation. Ghana embarked on an Economic Recovery Programme (ERP) with the support of bilateral and multilateral donors to revitalise the traditional export sectors, including gold, cocoa and timber. The logging and sawmilling industry absorbed about 89% of the facility. There was a sevenfold rise in export earnings to USD 80 million a year.

2.4.3 Forest production and management

Main Forest Products: The main forest products in the country includes both non-timber forest products (eg bushmeat) and timber products. Some of the key timber products include: wood charcoal, sawn logs, veneer logs, wood fuel, sawn wood, veneer sheets, particle board and round wood. Ghana main forest product exports in the last 25years has been sawnwood, industrial round wood, veneer sheets and plywood but by 2014 chips and particles as well as wood residue exports were recorded. Wood Charcoal production has been increasing from 1990 to 2014 recording 533,000tons in 1990 above 1million tons from 2000 with the highest in 2014 at 1,771,080tons in 2014. Sawn logs (+veneer) recorded 1,290,000tons in 1990 but declined to 998,000tons in 2000 and hit 1,587,000tons in 2014. Other industrial wood however record 150,000tons in 1990 and 700,000tons in 2014. Wood fuel has been recording an increase in production from 1990 (12,870,000tons) with the highest in 2014 at 41,448,188tons in 2014. Sawnwood which was 472,000tons in 1990 reduced to 55,800tons in 1995 and recorded 520,000tons in 2005 but reduced to 497,000tons in 2014. Veneer sheets have been recording increasing production values over the period. From 46,000tons in 1990, it recorded 274,000tons in 2010 and reduced to 269,000tons in 2014. In 1990, plywood production was 29,000tons and reached 120,000tons in 2005 with the

⁴⁶ Forest Resource Assessment, Ghana Country Report, 2015

highest at 178,000tons in 2014. Particle board recorded 5,000tons in 1990, 3,000tons in 1995 and recorded 8,000tons consistently in 2000, 2005, 2010 and 2014. Wood fuel production has been the highest among the products over the period followed by sawnlogs (+veneer), sawnwood and veneer sheets. Particle board has seen the lowest production values over the period.

Trends in Forest Products Consumption in Ghana: It is estimated that there are about 5,000 to 6,000 people engaged in regular hunting, with an average income from hunting of around \$1,000 per year. Even though they are of very high importance to the national economy, the extent of the contribution of non-timber forest products (NTFPs) is not formally recorded, and remains inadequately represented in policy analysis. Wild animal and wild plant exports were valued at US\$ 18.0 million in 2003⁴⁷. Bush-meat is of high dietary importance as a protein source in Ghana, but there is no consistency in national statistics on the annual trade in bush meat. The primary indigenous energy sources in Ghana are from the forestry sector comprising of 94.5% woodfuel⁴⁸. Biomass in the form of firewood and charcoal dominates the total energy consumed in the country (averaging 67 per cent in 2008).

Prevailing Forest Management Types: These include natural forest mainly within forest reserves and national parks managed by the FC. Semi-natural forest are mainly found in the off reserves and mainly fallow lands waiting to be converted for agricultural purposes and timber production regulated by the FC. The FC practices participator forest management planning and implementation involving stakeholders. Plantations outside forest reserves are mainly managed by the owners and registered with the FC for regulatory purposes. Agroforestry research farms are managed by the responsible research institution. Farmers who integrate trees on their farms remain the managers of their agroforestry practices.

2.4.4 Forest products import and export

Trends in Forest Products Import and Export: Ghana main forest product imports include printing and writing paper, paper board, newsprint and package paper in 1990 and by 2000 Ghana was also importing case materials and uncoated wood. The main forest products imported over the period include: printing and writing paper, paper and paper board, newsprint, case materials, etc. The highest forest product import in 1990 was 7,300tonnes of printing and writing paper which increased to 13,400tonnes in 2000 and reached 39,528 in 2014.

The main wood products exported over the period include: sawn wood, industrial round wood, Veneer sheets, plywood, chips and particles and wood residue. In 1990, Ghana exported 200,500tons of sawn wood which increased to 243,000tons in 2000 and reached 171,000tons in 2014. Sawn wood was the highest export in 1990 and 2000 while industrial round wood was the highest in 2014 at 448,000tons

⁴⁷ Forest and Wildlife Policy of Ghana, 2012

⁴⁸ Strategic National Energy Plan, 2006

2.5. Other factors

Frequency of Natural Disasters: National data on disasters are not comprehensively documented over the period. The main national disaster in Ghana has been perennial flooding which occurs in some parts of the country. Flooding occurs every year in Accra and communities along the Odo river. Accra annual flooding has been seen as a result of national action on proper planning and establishment of appropriate storm drains as well as the establishment of structures along waterways. Communities along the white volta mainly in the Upper East and Northern Regions of Ghana also experience perennial flooding during the raining seasons and during spillage of the Bagre dam in Burkina Faso. Agricultural activities which include farming along the white volta by communities over the years is a key contributory factor to the increasing siltation of the river and affect its water carrying capacity. The farming activities have also resulted in the clearing of vegetation along the river banks. Ghana law prohibits farming activities within 50meters radius to riverbodies but this law is hardly enforced resulting in highly level of vegetable and fruit crops cultivation along the white volta especially in the Upper East and Northern Regions of Ghana.

Policies and institutions

Policies and legal aspects

List of Policies and Legislations attached as Annex to the report

Priority in National Policies and Strategies: The ASRP (1987-90) was the first integrated intervention in the agricultural sector. The objectives were to (i) strengthen the institutional capacity and services of the Ministry of Food and Agriculture, and (ii) to support policy reforms involving the privatization of certain services (including fertilizer marketing, tractor services, and veterinary drugs). The following projects were initiated: Cocoa Rehabilitation Project (CRP) (1988-99) to boost cocoa production; Forestry Resource Management Project (FRMP) (1989-92) to improve management of industrial forestry production and promote conservation and tree planting; and Rural Finance Project (RFP) (1989-92) to implement a financial restructuring programme for rural banks and build local capacity for rural finance policy.

The GPRS identifies the following priorities for the agricultural sector: reform to land acquisition and property rights; accelerating the provision of irrigation infrastructure; enhancing access to credit and inputs for agriculture; promoting selective crop development; modernising livestock development; improving access to mechanised agriculture; increasing access to extension services; provision of infrastructure for aquaculture; restoration of degraded land and environment; and ensuring that businesses behave as good corporate entities which uphold the tenets of human rights, social responsibility and environmental sustainability.

The main focus of agricultural development policy, over the medium-term as stated in the GSGDA, is to accelerate the modernisation of agriculture and ensure its linkage with industry through the application of science, technology and innovation. The modernised agriculture sector is expected to underpin the transformation of the economy through job creation, increased export

earnings, food security, and supply of raw materials for value addition and rural development as well as significant reduction in the incidence of poverty.

Forest Policy/Strategies Targets for Forest Cover Increase: Development policies have long term objectives of increasing the area covered by forest but do not prohibit forest cover change. The 2012 Forest and Wildlife Policy aims among others to promote the rehabilitation and restoration of degraded landscapes through plantations development and community forestry informed by appropriate land-use practices to enhance environmental quality and sustain the supply of raw materials for domestic and industrial consumption and for environmental protection. A Plantation Development Fund was established in 1999 to provide funding to the private sector to invest in commercial plantation establishment. The fund was sourced from the levies imposed on the export of air-dried lumber. In 2001, the government launched a National Forest Plantation Development Programme (NFPDP) which was re-launched in 2010 with the aim of planting 30,000 ha of trees per year across all the administrative districts of the country.

The Ghana Poverty Reduction Strategy (GPRS) outlines the need for the forestry sector to: *Achieve sustainable forest management* by reducing deforestation and forest degradation and so developing a sustainable forest resource for Ghana's future; *Increase value addition* in the timber processing industry, to create jobs; *Increase rural employment and livelihoods* through local management of off-reserve forests, through mechanisms such as dedicated forests or Community Resource Management Areas (CREMAs); *Support investments in plantation development, tertiary processing, eco-tourism, and wildlife facilities*; *Fully capture economic and financial rents* to ensure an effective regulator and a broader tax base; and *Capture the full range of values of forests including biodiversity conservation, ecosystems services and related values*.

Agricultural Policies/Strategies Targets for Increasing Areas for Crop Production: Agriculture and land use policies puts emphasis on increase agricultural productivity through agriculture intensification and sustainable land use practices with no targets for expanding land area for crop production. The national vision for the food and agriculture sector is a modernised agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty. The strategies for sustainable management of land and environment in the FASDEP include; mainstream sustainable land and environmental management practices in agricultural sector planning and implementation; create awareness about environmental issues among all stakeholders and develop an effective and efficient framework for collaboration with appropriate agencies to ensure environmental compliance; improve incentive and compulsion measures to encourage users of the environment to adopt less exploitative and non-degrading practices in agriculture; promote joint planning and implementation of programmes with relevant institutions to address environmental issues in food and agriculture; promote the development of community land use plans and enforce their use, particularly in urban and peri-urban agriculture; improve access of operators in urban agriculture to sustainable land and environmental management practices; stimulate, support and facilitate adaptation and widespread adoption of farming and land use practices which, while in harmony with natural resource resilience, also underpin viable and sustainable production levels.

Forestry & Agricultural Priorities in Land Policies: Ghana's key land use policies and laws incorporate forestry and agricultural considerations. The Economic Plant Protection Act and the

tree crop policy highlights strong forest and agricultural considerations. The Environmental Assessment Regulations cuts across different type of projects and protects agricultural and forest resources. Land use policies require a minimum effect on the environment including the destruction of forest resources and agricultural land. Where the land use project cannot avoid the destruction of forest resources then mitigation is enforced and where the activity affects agricultural land or products, the affected people must be compensated. As a matter of policy, the FC is supposed to cooperate with all other state agencies on matters pertaining to land use with the view to promoting the overall sustainable development of the country.

Approach Applied to Define Land/Forest Policy: Ghana land and forestry sector currently have scattered laws and policies that makes it difficult for application without the services of a lawyer. The Ghana Land Administration Project has been implementing various interventions over the years to reform the sector. Institution reforms have been completed and land sector law consolidation committee was inaugurated in 2015. The LAP processes have been very open, transparent and consultative. Ghana forest policy 2012 was developed through a transparent and a highly consultative process and the policy itself is widely accepted by all stakeholders. The challenge has been the slow implementation. The FC plans to embark on forest law review and consolidation into a single forest code. A Ghana Wildlife code has been developed which is currently before parliament.

Consistency of Forest Law with Forest Policy: The current forest sector laws are scattered, contradictory and one needs to read several dossiers of laws in order to understand the forest legal environment. One of the key factors that contributed to the high deforestation in the 1990s in spite of the merits of the 1994 Forest and Wildlife Policy, was the non-implementation of the policy. In retrospect, the implementation of the 1994 Forest and Wildlife policy focused mostly on generation of tax revenue from timber production without ensuring that other aspects or the policy related to the protection of the forest receive due attention for enforcement. Up to date, the 2012 Forest and Wildlife Policy which identified areas for enactment of laws, had not yet been done .Even though, the FC regulates and enforces forest sector laws, it has become evident that without community involvement in forest law enforcement, it will be challenging for the FC alone to ensure effective legal compliance with its inadequate institutional capacity. This is strongly highlighted in the 2012 forest and wildlife policy as collaborative forest management and led by the Collaborative Forest Management Unit of the RMSC of the FC.

Consistency of Land Law with Land, Forest and Agricultural Policies: Land laws in Ghana mainly cover areas of land transfer, documentation and land title registration. The key elements of consistency is the protection of the right to property and compensation for losses incurred by others. The 1992 Constitution recognizes customary law as part of the laws of Ghana and this is protected in the land laws as well. Mainly in the farming communities, customary law guides local level land tenure agreements which are mainly verbal and not documented. Focus of these local land tenure arrangements has always been the crops planted and not forestry. The transfer of land from one generation to the other is governed by customary law through inheritance. The inheritance system however has been seen to marginalize women ownership to land and also affects women access and control over productive agricultural land in Ghana.

Climate Change Mitigation in Forest, Land us and Agriculture Policies: The Forest and Wildlife Policy 2012 highlights the current global economic trends, climate change, a growing population, and high rate of urbanization that threaten access to food, water, and forests. It also

addresses issues under the Climate Change Convention (e.g. Carbon Trading, Reduced Emissions from Deforestation and forest Degradation (REDD+), Clean Development Mechanism (CDM, Climate Change Adaptation and mitigation). New regulatory standards are emerging which accommodates indigenous people's rights and local/community/ commons participation in natural resource management. It proceeds to introduce strategies for climate change mitigation.

Ghana has developed a Climate Change Adaptation Policy that strengthens institutional coordination among line ministries to integrate climate change issues into national development priorities.

Institutional frameworks for land use change governance

Laws and Regulations on Land use: Laws exist in Ghana that require stakeholder engagement in land use planning. The Local Government Act, empowers the District Assemblies to develop local development plans and by-laws for their jurisdiction but this has largely not been applied for planning forest and agricultural production which affect land use.

Authorization of Land use Change: To convert a forest to agricultural land in Ghana within the off reserve areas varies in approach. A land owner who wants to convert his forest land in the off reserve for agriculture purposes does not require any permission or authorization in so far as s/he will not use the timber products for economic gains. This is the same for any farmer who has a forest land he intends to use for agriculture purposes. This is because the current forest laws allow one to cut down timber as part of farmland preparation. On the other hand, if an investor acquires a parcel of forest land s/he intends to develop for agriculture purposes, depending on the size and the type of investment, an EIA might be required. The Environmental Impact Assessment Regulations requires one to obtain an Environmental Permit for the following: land development for agriculture purposes not less than 40 hectares; agricultural programmes necessitating the resettlement of 20 families or more; conversion of hill forest land to other land use; logging or conversion of forest land to other land use within catchment area of reservoirs used for water supply, irrigation or hydro-power generation or in areas adjacent to forest and wildlife reserves; and conversion of wetlands for industrial, housing or agricultural use. The EPA has the competency to authorize decisions under such circumstances.

To convert an agricultural land to forestry, one will need to register with the FC as a private plantation developer. The forest laws grants full ownership of planted timber to the planter subject to such other laws as may apply. Depending on the size of the land and the scale of operation involved, such an investment might require environmental permit to be issued by the EPA through EIA. Small scale plantation development however does not require an EIA but it must be registered by the FC.

Level of Decision Making on Land Use Change: The FSD of Forestry Commission operate District offices that process decisions for approval by the Regional offices and the headquarters. The EPA however do not have district offices even though a few are been piloted. One will have

to and obtain the necessary forms and authorization by visiting the regional EPA offices for processing of decisions for approval by the headquarters.

Formal Criteria for Land Use Change Decision Making: A person or investor intending to undertake a land use change investment will need to acquire a land. The procedure for land acquisition in Ghana is based on negotiations between the land owner and the investor. An investor who is not a Ghanaian cannot lease a land beyond 50 years. Land ownership in Ghana is vested in the president for public land and stool/skin lands are vested in the chiefs on behalf of the stool land and its people. Thus such a negotiation will be between the chief & family heads and the investor for stool/skin lands or the investor and government for public land.

According to the Lands Commission, there is no standard procedure in acquiring land in Ghana. This raises the risk of buying a disputed piece of land. The onus is therefore on the investor to undertake checks at the Lands Commission. The investor will then need to obtain a cadastral or site plan prepared by a licensed surveyor which shows the precise location and coordinates of the land. Prospective buyers need to note that buying land in Ghana can only be done as a lease-hold and not a freehold agreement. In Ghana, the maximum ownership duration for non-ghanaians is 50 years while for locals, it is 99 years. An investor who acquires a land need to sign an agreement with the land owner (s) and register with Lands Commission who will provide a title certificate and cadastral plan.

Land use change investment: An investor will have to engage the FC and MoFA if the land use change will result in the conversion of agricultural land to forestry or forestry to agriculture land. The investor will also have to apply to the EPA for an environmental permit which will require an EIA. The FC might need to salvage economic trees on the land before the conversion of a forest land to agriculture. Likewise, the FC will require the investor to complete registration and assessment processes for the conversion of agriculture land to forest. The Environmental Impact Assessment Regulations requires one to obtain an Environmental Permit for the following: land development for agriculture purposes not less than 40 hectares; agricultural programmes necessitating the resettlement of 20 families or more; conversion of hill forest land to other land use; logging or conversion of forest land to other land use within catchment area of reservoirs used for water supply, irrigation or hydro-power generation or in areas adjacent to forest and wildlife reserves; and conversion of wetlands for industrial, housing or agricultural use.

Existence of Land Tenure Information: When an individual acquires the site plan for a parcel of land, he/she needs to head straight to the Lands Commission. With the site plan, one can acquire information about the ownership of the land as far as the Lands Commission is concerned. The Lands Commission is the only agency mandated by law to keep records on lands. The Lands Commission is able to reveal all encumbrances on all lands in Ghana. Before purchasing a land, an individual is required to work with the planning authorities to know the actual land use and the district the land falls. Working hand in hand with the Lands Commission allows individuals to obtain accurate information on the legal status of the land as well as its intended purpose in local land use planning (eg if a particular land is mapped out for a road or a school or a park). The Lands Commission keeps records of registered lands in Ghana and such information is applied in authorizing land acquisitions. The Office of the Administrator of Stool Lands also keeps update

records of all stool/skin land in Ghana and uses such information for endorsing stool/skin land acquisitions.

Institutions in charge of forests.

Type and Structure of Forest Institutions: The Ministry of Lands and Natural Resources is the overall policy formulator on forest in Ghana. The Forestry Commission of Ghana is responsible for the regulation of utilization of forest and wildlife resources, the conservation and management of those resources. The Commission embodies the various public bodies and agencies that were individually implementing the functions of protection, management, the regulation of forest and wildlife resources. These agencies currently form the divisions of the Commission: The Forest Services Division (FSD) is responsible for the preservation and management of forest reserves in Ghana. The Wildlife Division is responsible for conserving wildlife in Ghana in general and manage wildlife protected areas in particular within representative ecological zones of the country. The Timber Industry Development Division (TIDD) provides specialized services in promoting efficiency in product quality assurance and value-addition in the Timber Industry and Trade consistent with best environmental practices. The Forestry Commission Training Center is concerned with the efficient and sustainable utilization of timber resources and committed to the development and upgrading of the professional knowledge and skills of personnel in the wood-based industry, through high quality technical and managerial training courses, extension and consultancy services in a cost effective manner. Resource Management Support Centre (RMSC) is responsible for the exploration, development, facilitation, institutionalization and implementation and monitoring of effective and affordable forest management systems in Ghana. The RMSC under its Collaborative Forest Management Units established Community Forest Management Committees (CFC) who collaborate with the Forest Services Division to protect forest areas and participate in forest law enforcement monitoring.

The various divisions under the FC worked as separate bodies and agencies under the Ministry of Forestry until the Forest Commission Act 571, 1999 enjoined all the main public bodies and agencies implementing the functions of protection, development, management and regulation of forests and wildlife resources to be accountable to the new Forestry Commission.

Trends of Employee Numbers Working for the Forest Administration: The Forestry Commission as at 2010 employed a total 3,552 people. This involves 91 at corporate headquarters, 2,316 at FSD, 923 at WD, and 223 at TIDD. In 1990, the FC employed a total of 2,500 reducing to 2,000 people in 2000. The number increased to 3,000 in 2005 and 3,552 in 2010.

Financial Strategies, Programmes and Instruments

Agriculture Subsidy Policies and their Features: Until recently, the production, imports and distribution of some essential agricultural inputs, notably, fertilizers, seeds, insecticides, poultry drugs and small hand tools among others were monopolised by the public agencies. Under the public sector management, input distribution grew increasingly inefficient. To establish a

competitive private market that would ensure availability and timely supply of farm inputs at the farm gate, the long term government intervention in input supply and distribution was abolished in 1990 giving way to privatization. Charging the real input price to farmers as a result of input subsidy withdrawal was expected to be matched by increased output price determined by market forces of supply and demand. However, the match has not been perfect, at least in the short run, as the input prices have increased faster than the output prices. Input prices especially shot up drastically since 1990 when the policy was implemented. However input supply is more efficient today than periods before the policy.

Average Amounts Spent on Agriculture Subsidy: In 2008, however, the government re-introduced fertilizer subsidies through a voucher-based system to promote fertilizer use and improve crop productivity of smallholder farmers. Implemented by the Directorate of Agricultural Extension Services of the Ministry of Food and Agriculture (MoFA), the vouchers were worth 50% of the price of fertilizers. Farmers were encouraged to use the fertilizers on mainly the key food crops – maize and rice. From 2008 - 2013 government has subsidized about 733,493MT of fertilizers amounting to GH¢ 280,402 million.

2.8.1. A brief assessment of forestry subsidy policies that resulted in arresting deforestation and or increased forest area

Over the last two decades, there have been several efforts from development partners to assist the sector to improve on its contribution to national socio-economic development. Consequently, the sector has consistently received millions of dollars of development assistance from various development partners. In the past two decades, an amount in excess of US\$ 643 million has been pumped into the sector. This gives an average, between 1989-2009, of US\$ 32 million a year.

The flow of monies through development assistance to the forest sector in Ghana has gone through three major programme phases: the Forest Resource Management Programme (FRMP 1989-1997); the Natural Resources Management Programme (NRMP 1999-2008); and the Natural Resource and Environmental Governance (NREG 2008- date) Overall, priority interventions in the forest sector can be categorized into five focal areas, namely, forest management and resource development (including reforestation programmes), institutional capacity building, governance (including policy and institutional reforms), livelihoods support, and biodiversity conservation.

Ghana has been involved in international negotiations for over a decade. Since ratifying the United Nations Convention on Climate Change (UNFCCC) in 1995 Ghana has been represented principally through the National Focal Point based within the Environmental Protection Agency. The FC has been involved through the Climate Change Unit, and the unit's position on the National Climate Change Steering Committee which is responsible for the development of Ghana's position on climate change issues prior to international negotiations.

The international agenda on climate change covers many different areas and initiatives that include mitigation activities (reducing GHG emissions and other activities that cause climate change) of which REDD is one, and adaptation activities (activities that help people to adapt to changes that are occurring in the climate) There is potential that REDD+ actions can in fact serve both

mitigation and adaptation goals, depending on their design. Under this, Ghana developed its R-Plan and currently implementing the Forest Investment Programme.

Analysis of positive trends: key contributing factors

Even though agriculture share of GDP has reduced it remains a key contributor to GDP as Ghana's economy is agriculture based. In general Ghana's GDP has been increasing since 1990. The export of timber and other forest products recorded the highest over the period to as much as 13.8% in 2003. The increase contribution of agriculture and forestry to GDP over the period can be attributed to a combination of factors including policy interventions and investments in the sector. Ghana introduced the Economic Recovery Programme in the 1990s which provided subsidies to timber industries resulting in increased wood production and high volumes of timber export. The FRMP which was also implemented over the period enabled the re-structuring and capacity strengthening of the regulatory institutions resulting in policies and laws that are promoting sustainable forest management and the resultant increase in forest area and improved agricultural production. Cocoa is Ghana's principal agricultural export has doubled within the period with a record high in 2010, Ghana gross agricultural production value recorded its highest over the period with a corresponding persistent increase per capita food supply and a declining percentage prevalence of undernourishment within a period of a rising population. Investment in the agriculture sector especially on research and development was highest over the period. The expanding arable land for agriculture recorded a consistent increase over the period with increased landholdings under permanent crops and increased agriculture investment. The period has also recorded the increase of agricultural research institutions (eg Savanna Agriculture Research Institute, Cocoa Research Institute, Crop Research Institute, etc) developing and promoting new scientific knowledge and technologies from research which contributed to improve agricultural cultivation and improved yields. This also resulted in increased food production and food availability contributing to the reduction in prevalence of undernourishment. The introduction of Accelerated Agricultural Development Strategy was the first major agriculture policy intervention in Ghana which resulted agriculture expansion. The subsequent introduction of FASDEP with the vision for a modernized agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty, influenced the trends in agriculture production over the period. It call along with several projects and increased development assistance for the agriculture sector.

Some of the key timber products over the period that have seen increase production in quantities and economic returns include: wood charcoal, sawn logs, veneer logs, wood fuel, sawn wood, veneer sheets, particle board and round wood. Wood Charcoal production has been increasing from 1990 with the highest in 2014 at 1,771,080tons in 2014. Wood fuel production has been the highest among the products over the period followed by sawnlogs (+veneer), sawnwood and veneer sheets. Particle board has seen the lowest production values over the period. This is attributed to an increase in wood processing especially wood fuel for export. The institutional reforms over the period have transformed the forestry industry from logs export into export of processed wood products. The Ghana Voluntary Partnership Agreement with the EU has also set

in motion a legal regime that will eliminate waste associated illegal logging mainly by small scale forest enterprise and the minimum standards set by the artisanal milling policy will improve wood production efficiency by artisanal millers. The timber procurement policy which aims to eliminated the patronization of illegal wood products in the domestic market is also seen as a very important step to promote legal wood and improve forest law enforcement and sustainable forest management in Ghana.

Ghana has experienced increasing trends in rural to urban migration since 1990 resulting in increase in urban population. Percentage rural population in Ghana has consistently been decreasing year by year with a corresponding increase in urban population. This drift increases the food demand in the urban centres while the food the small-holder farmers in the rural areas engage in agriculture to feed the nation. The improvement in agricultural infrastructure such as roads, irrigation facilities alongside improved crop varieties and accessible extension services has enhanced the accessibility of Ghana's urban population to food crops produced in the remote rural areas. Arable land size has increased tremendously over the period as a result of expansion in farmland holdings. Following the trend in conversion of forest to arable lands, forest density has reduced over the period. The most interesting development, however, is that while arable land is expanding with a corresponding reduction in forest density, the land area under forest cover has increased substantially over the period at 567,735ha. The increasing land area under forest cover is due to a combination of policy interventions. The promotion of agroforestry practices over the period resulted in the establishment of tree planting on farms and the introduction of plantation development which resulted in private individuals and organizations establishing their own plantations on land that were originally not forest land while reforestation was also achieved through natural regeneration and plantation on government forest reserves. The introduction of the legal reforms (Timber Resource Management Act and its amendment and regulations) that provide 100% ownership and benefits of a planted tree to the planter resulted in the promotion of cocoa agroforestry by development organizations and the Ministry of Food and Agriculture. Also, with the onset of cocoa certification, farmers are required to meet certain environmental benchmarks that include trees, agro-biodiversity, conservation of forest and water etc in order to obtain certification. Thus the promotion of cocoa certification in Ghana resulted in improved cocoa agroforestry and increased the land area under forest cover through afforestation and reforestation. The national plantation development programme introduced during the period was the precursor to growing forest area and with the launching of the Ghana Forest Plantation Strategy (2015 – 2040), expansion of land under forest cover is expected to increase rapidly. The agricultural policies and programmes introduced over the period highlights sustainable agricultural production and the reclamation of degraded land. Also the implementation of the CREMA concept encouraged tree planting and conservation along wildlife corridors while the modified taungya system resulted in increased food production and increase forest cover.

Agricultural expansion in the off reserves has resulted in a fragmented forest landscape resulting in the abandoning of the district quota system for off-reserve logging by the FSD. Majority of the timber harvesting in the off reserve is done through salvage permit. The Salvage Permit is a legal permit under the laws of Ghana and the Ghana VPA mainly issues for the salvaging of economic trees that will be affected by development projects such as road construction, urbanization, agricultural cultivation, etc. This intervention helps to make economic gains from timber that would have been destroyed through farmland preparation. The laws and policies introduced over

the period also safeguard land use changes and protect small holder farmers from them agricultural investments. The economic plant protection act prohibits logging activities on land with economic plants such as agricultural crops and requires the consent of the farmer as well as negotiation and compensation for losses in the event the farmer consents to the logging activity. This also applies for all other developments that will affect agricultural land. The environmental impact assessment regulations also safeguards the conversion of forest land to agricultural land and agricultural to forest land.

Summary/conclusion

Political stability in Ghana over the period has been the major trigger of economic transformation and development. This has provided some consistency in the implementation of various policies and programmes geared towards improved agricultural production and forest development. Ghana has achieved much of its food security targets over the period resulting in the reduction of prevalence of undernourishment. This achievement is mainly attributable to the national and sector policy interventions and investments in agriculture doubling agriculture productivity. The drive towards a modernized agriculture production and processing has improved the contribution of agricultural processing to the services sector. The sustainable agriculture interventions introduced has largely improved environmental sustainability and safeguarded small holder agricultural contribution to the national economy. The ERP and the Accelerated Agricultural Development Programme implemented over the period were the major earlier reforms that set the grounds for increased agricultural production. This has further made agriculture the bedrock of Ghana's economy. Agriculture has been the most important sector of Ghana's economy through exports in cocoa, food crops and timber among others.

The rising population of Ghana and associated rural to urban migration remain the key challenges to Ghana sustainability of its food security achievement and the threat posed by agricultural land expansion to forest sustainability. The derive towards sustainable agriculture which has seen the introduction of cocoa agroforestry and community forest investment has however resulted in forest expansion alongside agricultural land expansion. The Forest and Wildlife Policy 2012 seek to devolve forest management rights to communities in the off reserve areas with associated benefits. This will be an expansion of right of farmers to not only planted trees but also naturally regenerated trees in the hope that it will reduce the destruction of existing forest in fallow lands during farmland preparations. There is currently an ongoing tree tenure review which is hoped to guide the forest authorities to reform tree tenure in conformity with the forest policy provisions. This policy provision came from an extensive consultative approach adopted in the policy formulation and the policy is well accepted by all sections of forest stakeholders. Ghana Voluntary Partnership Agreement also seeks to safeguard communities and small and medium forest enterprises. Community forest benefits such as SRA, royalties and compensations are requirement for legality of wood. This has improved community access to forest benefits and safeguard community livelihoods and social systems. The estimated 2.5million of rural people live and depending on forest in Ghana are direct beneficiaries.

Ghana National Forest Plantation Programme and Ghana Forest Plantation strategy are key triggers to forest land expansion and forest investment by farmers, communities, organizations and private individuals. This coupled with the Timber Resources Management Act provisions granting the 100% right to benefits of a planted timber to the planter has resulted in forest plantation establishment by private people and the integration of timber trees on farmlands by farmers. This contributed to the 8.6% (710,000ha) growth in forest area with the period. The introduction of the modified taungya system which is a collaborative approach to reforestation and food production in degraded forest reserve areas principally led to increased food production over the period.

Over this period, Ghana has achieved reduced rate of prevalence of undernourishment, increased agricultural production and increased land area under forest cover. This feat is commendable but the reduction in forest density mainly resulting from timber logging and agricultural land expansion has implications on biodiversity in the high forest zones. To address this, Ghana designated some forest reserves as Globally Significant Biodiversity Areas (GSBAs) and other Wildlife Protected areas where logging is prohibited. The forest policy and laws also encourage community forest protection in the off reserves through the prohibition of logging in dedicated community forest and sacred groves which are managed by communities. The CREMAs established across the country mainly to serve as wildlife corridors and protect wildlife protected areas is another participatory and collaborative forest management approach introduced that encourage community forest conservation and investment in the off reserves managed by communities.

Forest governance has improved greatly over the period resulting from the institutional reforms that were introduced under the FRMP. The approach to forest governance took a collaborative form and stakeholder participation over the period resulting in the establishment of the collaborative forest management unit under the RMSC of the FC and the inclusion of Civil Society Representatives on the FC board, the Timber Validation Committee among others.

Annex: List of Policies and legal aspects

List of Policies, Strategies, Plans and Programmes

National Policies and Strategies:

The Ghana Economic Recovery Programme: 1989 – 1992: to improve management of industrial forestry production and promote conservation and tree planting. Agriculture was identified as the economic sector that could rescue Ghana from financial ruin. The government invested significant funds in the rehabilitation of agriculture. Primarily through the use of loans and grants, the government directed capital toward repairing and improving the transportation and distribution infrastructure serving export crops. In addition, specific projects aimed at increasing cocoa yields and at developing the timber industry were implemented. The government allowed the free market to promote higher producer prices and to increase efficiency.

The Ghana Vision 2020: 1995 - 2020: to improve the quality of life of all Ghanaians by reducing poverty, raising living standards through a sustained increase in national wealth and a more equitable distribution of the benefits therefrom.

Ghana Poverty Reduction Strategy: 2003 - 2009: Reform land acquisition to ensure easier access and more efficient land ownership and title processes; Serve as a catalyst to assist the private sector to increase the production of grains such as rice, maize and tubers so that we can achieve food security. This included extension and research services, irrigation facilities, and affordable credit to support the farmer. Encourage the production of cash crops such as cashew; Support the private sector to add value to traditional crops such as cocoa. The incidence of poverty incidence among food crop farmers was targeted to decrease from 59% to 46% by 2005.

<http://planipolis.iiep.unesco.org/upload/Ghana/PRSP/Ghana%20PRSP%20June%202006.pdf>

Ghana Shared Growth and Development Agenda. 2010 - 2017: The main focus of agricultural development policy, over the medium-term as stated in the GSGDA, is to accelerate the modernisation of agriculture and ensure its linkage with industry through the application of science, technology and innovation. The modernised agriculture sector is expected to underpin the transformation of the economy through job creation, increased export earnings, food security, and supply of raw materials for value addition and rural development as well as significant reduction in the incidence of poverty.

<https://www.imf.org/external/pubs/ft/scr/2012/cr12204.pdf>

Ghana Climate Change Adaptation Strategy, 2010 - 2020: 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.

http://www.undp-alm.org/sites/default/files/downloads/ghana_national_climate_change_adaptation_strategy_nccas.pdf

Forest Policies: <http://www.fcghana.org/index.php>

Ghana Forest and Wildlife Policy, 1948 - 1980: provided for the creation and management of permanent forest estates, research in all branches of scientific forestry, maximum utilization of areas not dedicated to permanent forestry, provision of technical advice and cooperation in schemes for the prevention of soil erosion and in land use plans

Ghana Forest and Wildlife Policy 1994: 1995 - 2011: aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society.

Ghana Forest and Wildlife Policy, 2012: 2012 – to date: aims at the conservation and sustainable development of forest and wildlife resources for the maintenance of environmental stability and continuous flow of optimum benefits from the socio-cultural and economic goods and services that the forest environment provides to the present and future generations whilst fulfilling Ghana's commitments under international agreements and conventions

Forest Programmes: <http://www.fcghana.org/index.php>

Forest Resource Management Programme (FRMP); 1990 – 1994: undertook a systematic evaluation of Forest and Wildlife resources and assessed the capacity of the sector departments to face the challenges of the time and those perceived for the future. The FRMP culminated in the formulation of the Forest and Wildlife Policy of 1994 that clearly recognised more strongly the role of local communities and indigenous knowledge in the conservation of Forest and Wildlife resources.

Natural Resources and Environmental Governance (NREG) Program, 2008 – to date: The programme focuses on a set of policies and reforms in the inter-related sectors of forestry and wildlife, mining and environmental protection.

Non-Legally Binding Instrument (NLBI), 2007 – to date: to boost the implementation of sustainable forest management (SFM) and thus to maintain and enhance the economic, social and environmental values of all types of forests for the benefit of present and future generations.

Voluntary Partnership Agreement (VPA) 2009 – to date: provides a legal framework aimed at ensuring that all imports into the EU from Ghana of timber products have been legally produced and in doing so to promote trade in timber products.

Protected Area Development Program, 1997 – 2010: Its main aim was to develop and implement resource reserve management plans that will enhance biological diversity conservation in two nationally and internationally important representative protected areas. The Nini-Suhien National Park and Ankasa Resource Reserve and Bia National Park (also an UNESCO Biosphere Reserve) and Resource Reserve are all located in the high-forest zone of the Western Region.

National Forestry Programme; 2004 – to date: The Forestry Commission has entered into a Partnership Agreement with the Food and Agriculture Organization (FAO) of the United Nations under the National Forest Programme Facility (NFP) which established the National Forestry Forum and for implementing series of activities aimed a safeguarding the benefits due to farmers participating in the Modified Taungya Plantation Scheme.

Reduced Emissions from Deforestation and forest Degradation (REDD+); As part of the Forestry Commission's commitment to ensuring the sustainable management of Ghana's forests we are leading efforts to prepare Ghana to engage with international mechanisms on REDD.

Forest Investment Programme (FIP), 2013 – to date: The medium to long term expectation of Ghana's FIP strategy is to strengthen institutional capacity in forest resources management, improve governance, strengthen the regulatory mechanisms, streamline tenure and tree rights, improve local livelihoods and enhance resilience to climate change

National Plantation Development Programme, 2002 - 2012: It aims at rehabilitating degraded forest reserves in suitable off-reserve areas, mangroves, watersheds, planting of amenity trees in urban areas and creating employment for the youth in the rural and urban communities.

Ghana Forest Plantation Strategy, 2015 – 2040: The purpose of the strategy is to optimize the productivity of planted forests by identifying suitable tree species and improving their propagation, management, utilization and marketing. The strategy has the following strategic objectives: to establish and manage 500,000 ha of forest plantations and undertake enrichment planting of 100,000 ha through the application of best practice principles, by year 2040 as well as maintain and rehabilitate an estimated 235,000 ha of existing forest plantations through the application of best practice principles; to promote large scale and small holder forest plantation investments; to create employment opportunities and sustainable livelihoods in rural communities through forest plantation development; to increase investments in research and development, extension, training and capacity building for forest plantation development and timber utilization; and to improve governance in the regulation and management of forest plantations.

<http://www.fcghana.org/userfiles/files/Plantation%20Annual%20Report/Ghana%20Forest%20Plantation%20Strategy%202015-%202040.pdf> .

Agriculture Policies:

The Food and Agriculture Sector Development Policy (FASDEP), 2002 – to date: This is the main agriculture sector policy of Ghana built on the GPRS priorities for Ghana. Several other policies, programmes and projects have been developed to respond to the provisions of this policy. The policy targets agricultural growth rate of 6-8% per annum, crops and livestock leading the growth at an average annual growth rate of 6%, Forestry and logging, and fisheries, each growing at 5% per annum, and cocoa remaining robust in support of other sectors.

Ghana Irrigation Development Policy, 2010 – to date: Ghana's irrigation policy (and the strategy for its implementation) is designed to open up the investment space for intensified and diversified irrigated crop production in Ghana where there is clear comparative advantage. The policy is designed to accomplish this by addressing four key 'problem' areas concerning the formal, informal and commercial irrigated sub-sectors that have been identified during an extensive consultative review. These problems are: (a) Low agricultural productivity and slow rates of growth (b) Constrained socio-economic engagement with land and water resources (c) Environmental degradation associated with irrigated production (d) Lack of irrigation support services.

<http://mofa.gov.gh/site/wp-content/uploads/2011/07/GHANA-IRRIGATION-DEVELOPMENT-POLICY1.pdf>

Ghana Tree Crop Policy 2011 – to date: Competitive and sustainable tree crop sub-sector with focus on value chain development and improved technologies to create job opportunities, ensure food security, enhance the environment and improve livelihoods.

http://mofa.gov.gh/site/?page_id=10246

Agriculture Programmes: <http://mofa.gov.gh/>

The Agricultural Sector Rehabilitation Programme (ASRP), 1987 - 1990: was the first integrated intervention in the agricultural sector. The objectives were to (i) strengthen the institutional capacity and services of the Ministry of Food and Agriculture, and (ii) to support policy reforms involving the privatization of certain services (including fertilizer marketing, tractor services, and veterinary drugs).

Ghana Agricultural Sector Investment Programme, 2013 - 2018: nationwide scaling up of a successful value chain investment approach; (iii) promoting and mainstreaming climate change resilience approaches in Ghana, in particular in the northern regions, financed through the Adaptation for Smallholder Agriculture Programme (ASAP); and (iv) knowledge management, harmonization of intervention approaches and policy support.

http://mofa.gov.gh/site/?page_id=13706

Medium Term Agriculture Sector Investment Plan, 2011 – 2015: The METASIP is the investment plan to implement the medium term (2011-2015) programmes of the policy. It has been developed to achieve a target agricultural GDP growth of at least 6% annually, halving poverty by 2015 in consonance with MDG 1 and based on government expenditure allocation in the national budget of at least 10% within the Plan's period (2011–2015).

Medium Term Agriculture Development Programme (1991- 2000); Medium Term Agricultural Development Program 1991-2000 was to attain food self-sufficiency and security by the year 2000. To this end, the government sought to improve extension services for farmers and to improve crop-disease research.

Northern Rural Growth Programme, 2009 – to date: The programme aims at developing agricultural value chains and increasing agricultural production. It will help vulnerable groups, including women and the youth, create profitable commodity and food chains, while improving market linkages for these agricultural products with the domestic and export markets

Ghana Cocoa Sector Support Programme, 2007 – date: The overall objective is to contribute to an improved livelihood of smallholder cocoa farmers and improved sustainability of cocoa production in Ghana.

Youth in Agriculture Programme, 2012 – to date: The Youth in Agriculture Programme (YIAP) is a Government of Ghana (GOG) agricultural sector initiative with an objective of motivating the youth to accept and appreciate farming/food production as a commercial venture, thereby taking up farming as a life time vocation.

Programme for Promotion of Perennial Crops, 2006 – 2013: The Programme for the Promotion of Perennial Crops in Ghana is implementing the strategies outlined by the FASDEP through the following actions: Linking of farmers to market, Creating and strengthening of farmer associations, Building of 77km of feeder roads and 210km of farm roads, and Designing two outgrower projects under the Programme.

Root and tubers improvement Programme, 2007 – 2014: The programme seeks to build a competitive market-based Root and Tuber Commodity Chain (RTCC) supported by relevant, effective and sustainable services that are available to the rural poor.

West Africa Agriculture Productivity Programme, 2006 – to date: WAAPP is a two-phase, 10year Adoptable Program, each of 5 year duration. The first of WAAPP involves three countries – Ghana, Mali and Senegal. The priority commodities for the WAAP which have International Food Policy Research Institute (IFPRI) and West and Central Africa Council for Agricultural Research and Development (WECARD/ CORAF) in 2006, identified roots and tubers, livestock, rice, cereals among others as the commodities that make the greatest contribution to the region's agricultural growth and productions' benefit, from research and development. The specific country commodities are as follows: root and tubers for Ghana; rice for Mali and drought – tolerant cereals for Senegal. The development objective of the program is to

contribute to agricultural productivity increase in the participating countries' top commodity sub-sectors that are aligned with regional priorities.

List of Laws

Constitutional Provisions on land in the 1992 Ghanaian Constitution

<http://www.politicsresources.net/docs/ghanaconst.pdf>

Article 258 Establishes a Lands Commission and prescribes the functions of the Commission.

Article 266 Imposes restrictions on the rights and interest in land that could be granted to a non-citizen of Ghana.

Article 267(1) Vests stool lands in the appropriate stools in trust for their subjects in accordance with customary law and usage.

Article 267(2) Establish the Office of Administrator of Stool Lands and prescribes its functions.

Article 267(6) Provides for the disbursement formula for stool land revenue.

Article 268 Requirement of Parliamentary ratification of agreements relation to the grant of a right or concession for the exploitation of any natural resources.

Article 269 Establish natural resources commissions [Forestry Commission] which “shall be responsible for the regulation and management of the utilization of the natural resources concerned and the co-ordination of policies in relation to them”

Article 295 Provides for the definition of Stool lands.

Legislation Relating to the Forest Sector:

FORESTS Ordinance (Cap 157) –This Act provided guidelines for constitution of forest reserves and the protection of forests and other related matters.

Forest Protection Decree, 1974 (N.R.C.D. 234) – This Act defined forest offences and prescribed sanctions and or penalties for such offences.

Trees and Timber Decree 1974 (N.R.C.D. 273) – This law prescribed guidelines for participation in the logging/ timber industry and provided for the payment of fees as well as sanctions for non-compliance with the guidelines for participation and also export of unprocessed timber.

Forest Protection (Amendment) Law, 1986 (P.N.D.C.L. 142) – This law reviewed upwards the penalties/ fines for forest offences.

Trees and Timber (Amendment) Act 1994 (Act 493) – This Act reviewed the fees and fines upwards and also introduced export levy for air-dried lumber and logs

Timber Resources Management Act 1997 (Act 547) – This repealed the Concessions Act, 1962 (Act. 124) and provided for the grant of timber rights in a manner that secures the sustainable management and utilization of timber resources.

Forestry Commission Act, 1999 (Act, 571) – This Act repealed ACT 453 and re-establish the Forestry Commission as a semi-autonomous corporate body and also brought under the Commission, the forestry sector agencies implementing the functions of protection, development, management and regulation of forest and wildlife resources.

Forest Plantation Development Fund Act, 2000 (Act 583) – This Act consolidate to it the Forest Improvement Fund and provide for the establishment of a Fund to provide financial assistance and the management of such funds for the development of private commercial forest plantations in the country.

The Forest Protection (Amendment) Act 2002 (Act 624) – This Act repealed the Forest Protection (Amendment) Law, 1986 (PNDCL. 142), reviewed forest offences fines upwards and introduced joint liability in the commitment and prosecution of forest offences.

The Forest Plantation Development Fund (Amendment) Act 2002 (Act 623) – This Act amended ACT 583 to enable plantation growers, both in the public and private sectors to participate in forest plantation development.

Timber Resources Management (Amendment) Act 2002 (Act 617) – This Act amended ACT 547 to exclude from its application, land with private forest plantation, to provide for maximum duration, and maximum limit area for timber rights and to provide for incentives and benefits for investors in the forestry and wildlife sector.

Economic Plants Protection Decree, 1979 (AFRC.D. 47) – Prohibits the grant of timber felling rights in cocoa farms.

LI. 1649 Timber Resources Management Regulations, 1988– This Regulation provided guidelines for the allocation and management of timber resources.

LI 1721 – Timber Resources Management (Amendment) Regulations, 2003. This Regulations established basis for competitive bidding in timber resource allocation.

LI. 2184 Timber Resources (Legality Licensing) Regulations, 2012: established the Timber Validation Division, Timber Validation Committee and Timber Legality Licensing scheme.

Legislation Relating to the Agriculture and Land Sector:

Cocoa Industry Regulation, 1968; Fruit Industry Act, 1969: This law provides the regulations for buying and selling of cocoa in Ghana. <http://mofa.gov.gh/>

Environmental Protection Agency Act, 1994; This act establishes the EPA and spell out its powers and responsibilities

Environmental Assessment Regulations, 1952; Outlines the regulations guiding various undertaken that require environmental screening, environmental impact assessment and environmental permit.

Fisheries Act, 2002; Animals (control of importation), 1952; establishes the fisheries commission and its structures as well as and its responsibilities. <http://mofa.gov.gh/>

Fruit Industry Act, 1969: provides for standards for packing and supply of fruits and related matters. <http://mofa.gov.gh/>

State Lands Act and its Regulations, 1962; provides for acquisition of land for national interest and related matters.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Land Title Registration Act and regulations, 1986; provides for the establishment of land title registry and the procedures for land title registration.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Public Conveyancing Act and Regulations, 1965; provide for the declaration of a selected area, the granting of land in such area, and matters connected therewith or incidental thereto.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Land Planning and Soil Conservation Act, 1963; provide for the better utilisation of land in designated areas by land planning and soil conservation and for the establishment of committees for purposes incidental to this.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Land Development (protection of purchasers) Act, 1960; protect purchasers of land, and their successors, whose titles are found to be defective after a building has been erected on the land.
<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Farmlands Protection Act, 1962; protect farmers whose titles to land are found to be defective, and to provide for related matters.
<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Administration of Lands Act and regulations, 1962; consolidate with amendments the enactments relating to the administration of Stool and other lands.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Conveyancing Act, 1973; amend, simplify and consolidate the law relating to conveyancing and to provide for related matters. This law provides the procedures and requirement for transfer of interest on land.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Office of the Administrator of Stool Lands Act, 1994; establish the Office of the Administrator of Stool Lands and provide for the administration of Stool Lands generally.

<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Lands Commission Act, 2008; establish the Lands Commission to integrate, subject to the Constitution, the operations of public service land institutions under the Commission in order to secure effective and efficient land administration and to provide for related matters.
<http://www.ghanalap.gov.gh/index.php/implementing-agencies/lands-commission>

Wetlands Management (RAMSAR) Regulations, 1999: provides for the definition of sustainable utilization of wetlands.

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