

Background Study on Employment in the Agriculture and Agro-processing Sectors In Ghana



Submitted by:
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LIST OF ACRONYMS

ADB	Agricultural Development Bank
ADC	Agricultural Development Corporation
AFD	Agence Française de Développement
AGI	Association of Ghana Industries
AGRA	Alliance for Green Revolution in Africa
BoG	Bank of Ghana
BOPP	Benso Oil Palm Plantations
CAADP	Comprehensive African Agricultural Development Programme
CGE	Computerised General Equilibrium
CPO	Crude Palm Oil
DRIC	Directorate of Research, Innovation and Consultancy
EDAIF	Export Development and Agricultural Investment Fund
EDIF	Export Development and Investment Fund
EFAAC	Total Public Expenditure in Support of the Food and Agriculture Sector, including Administrative Costs
EU	European Union
FAO	Food and Agricultural Organisation
FASDEP	Food and Agriculture Sector Development Policy
FFB	Fresh Fruit Bunches
FMO	Financierings-Maatschappij voor Ontwikkelingslanden
GAIP	Ghana Agricultural Insurance Programme
GAPS	Ghana Agricultural Production Survey
GASIP	Ghana Agricultural Sector Investment Programme
GDP	Gross Domestic Product
GEPA	Ghana Export Promotion Authority
GEPC	Ghana Export Promotion Council
GETIC	Ghana Export Trade Information Centre
GLSS	Ghana Living Standards Survey
GNA	Ghana News Agency
GoG	Government of Ghana
GOPDC	Ghana Oil Palm Development Company
GSFC	Ghana State Fishing Corporation
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GSSP	Ghana Strategy Support Programme

GTP	Ghana Trade Policy
IBES	Integrated Business Enterprise Survey
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
IMF	International Monetary Fund
I-O	Input-Output
ISSER	Institute of Statistical and Social Science Research
KFW	Kreditanstalt für Wiederaufbau
MASLOC	Microfinance and Small Loans Centre
METASIP	Medium Term Agriculture Sector Investment Plan
MFI	Microfinance Institutions
MIDAS	Managed Inputs Delivery and Agricultural Services
MLGRD	Ministry of Local Governance and Rural Development
MoELR	Ministry of Employment and Labour Relations
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
MoTI	Ministry of Trade and Industry
MRACLS	Multi Round Annual Crops and Livestock Survey
MTADP	Medium Term Agricultural Development Programme
NBSSI	National Board for Small Scale Industries
NDPC	National Development Planning Commission
NGOs	Non-Governmental Organisations
NIB	National Investment Bank
NOPL	National Oil Palm Plantation
NORRIP	Northern Regional Rural Integrated Project
OFI	Operation Feed Your Industries
OFY	Operation Feed Yourself
OPEC	Organisation of Petroleum Exporting Countries
OPRI	Oil Palm Research Institute
PHC	Population and Housing Census
PKC	Palm Kernel Cake
PKO	Palm Kernel Oil
R&D	Research and Development
RAFip	Rural and Agricultural Finance Programme
RTIMP	Root and Tuber Improvement and Marketing Programme
SAM	Social Accounting Matrix

SFC	State Farms Corporation
SMEs	Small and Medium-scale Enterprises
SSNIT	Social Security and National Insurance Trust
SWOT	Strength, Weaknesses, Opportunities and Threats
TOPP	Twifo Oil Palm Plantation
TUC	Trade Union Congress
UCC	University of Cape Coast
UGFC	United Ghana Farmers' Council
UK	United Kingdom
URADEP	Upper Regional Agricultural Development Programme
USAID	United States Agency for International Development
VCTF	Venture Capital Trust Funds
VORADEP	Volta Regional Agricultural Development Programme

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EXECUTIVE SUMMARY

This background study is one of the projects under the International Labour Organisation (ILO), European Union (EU) and Government of Ghana (GoG) partnership in implementing the project "Strengthening the Impact of Sector and Trade Policies on Employment" (STRENGTHEN). The main purpose of the study was to provide a better sense of the overall employment situation in agricultural and agro-processing sectors. These included their potential, recent developments, growth and future prospects. In achieving the objectives, the study used secondary data, key informant interviews and consultation with professionals in institutions related to the study. Literature from related studies were accessed through internet and library searches and a review of available documents from state institutions. Some of the important remarks and conclusions from the study are summarised as follows:

- Modernised agriculture remains the overarching theme of Ghana's agricultural policy and development agenda.
- Plans and programmes within the agriculture and agro-processing sectors are coordinated through policy and strategic frameworks, including the Food and Agriculture Sector Development Policy (FASDEP II, 2008), the Medium Term Agriculture Sector Investment Plan (METASIP, 2011-2015) and the METASIP II which is the investment plan to implement in the medium-term (2014-2017) programmes of the policy.
- The current government's commitment in terms of leveraging the potential in the agricultural and agro-processing sector has been adequately articulated in the recent launch of the 'Planting for Food and Jobs' programme. The programme is designed to encourage all citizens (both rural and urban) to take up farming as a full or part-time activity. It also involves the production of maize, rice, soybean, sorghum and vegetables. The initiative is expected to create 750,000 jobs in both direct and indirect employment.
- Another clear commitment of the government to strengthen employment in agro-processing is enshrined in the one district-one factory policy, which is closely intertwined with the "National Industrial Revitalisation Programme". This is designed as a comprehensive programme for rural industrialisation, driven by the private sector and involving the setting up of at least one medium- to large-scale factory in each of the administrative districts of Ghana. The initiative is expected to create 350,000 direct and indirect jobs.
- Various credit schemes have been established by the government to support agricultural and agro-processing activities. They include the Export Development and Agricultural Investment Fund (EDAIF), the Venture Capital Trust Funds (VCTF), Microfinance and Small Loans Centre (MASLOC) and other financial products and services, including Ghana Agricultural Insurance Programme (GAIP).
- The Ghana Living Standard Survey (GLSS) report indicates that the major item processed in Ghana is maize. About 283,000 households are involved in processing of maize into flour. Tens of thousands of households are also involved in the processing of nuts and pulses into edible oil, fish processing and processing of cassava into flour, root beer, dough and gari. There is also the processing of other grains such as millet, sorghum and guinea corn into flour and into local drinks such as 'pito', 'brukutu' and 'asaana'. There is also the processing of groundnut into paste.
- On the average, the percentage of households involved in agro-processing has been falling since 1999. For instance, sixty-one per cent of households were involved in agro-processing

in 1999 (GSS, 2000), whilst 42.3 per cent were engaged in 2013 (GSS, 2014).

- The 2010 Population and Housing Census (PHC) report shows that employment in the agriculture and agro-processing sectors in absolute terms increased from 1,563,533 in the 1960 PHC to 4,302,260 in the 2010 PHC. The biggest increase was observed between 1970 and 1984 PHC. The number of persons employed in the agriculture and agro-processing sectors saw a slight increase in the 2000 to 2010 PHC.
- The available employment data indicates that a large proportion of Ghanaian working women earn a relatively low income in the private sector and are unable to sustain their livelihoods.
- Prospects of the oil palm industry for providing employment for millions of unskilled and semi-skilled people in the country are enormous. Various documentary reports estimate that the palm oil sector employs over 300,000 people in Ghana and need to be given the needed attention to exploit its full potential.
- Some of the strengths in the agro-processing sector are:
 - Alternate season production
 - Labour availability
 - Technology institutions / Research and Development (R&D) facilities
 - Potential for diverse production
 - Presence of multi-nationals
 - Sector-specific incentives
- Some of the weaknesses in the sector are:
 - Lack of export infrastructure for perishables
 - Transport in-land / port charges / long distances
 - Small domestic market
 - Production volumes small
 - Distances to global markets
 - Skills (management)
- The existing Social Accounting Matrix (SAM) for Ghana for the year 2005 identifies 56 productive sectors or activities (within a 135 SAM account) that combine primary factors with intermediate commodities to produce output. Agro-processing activities captured in the 2005 SAM include formal food processing, local food processing, cocoa processing, dairy production and meat processing. Except for the insights on the factor accounts, the SAM does not explicitly provide information on the levels of employment likely to be generated with increased investment in agriculture or agro-processing sector.
- The National Development Planning Commission (NDPC) is in the process of developing a model for macroeconomic forecasting, sectoral planning and policy analysis. The main aim for developing the model is to ensure that the country gets a very good macroeconomic forecasting framework that enhances the ability of the country to achieve the goals set in the forty-year development framework.

- This study suffers from a number of shortcomings which need to be addressed in future studies. Future studies should explore the linkages between the agricultural sector, the agro-processing informal sector and the agro-industrial sector, in order to understand and enhance the role of women. Issues related to quality and adherence to standards of agro-processing firms has not been covered in this study. The studies reviewed in this report contain almost no information on agro-processing training. Follow-up studies should be conducted on training availability. Much of the information required for the determination of employment within the various value chains in Ghana could be relatively easily provided via IBES data by the Ghana Statistical Service (GSS). Ready access to this information would be very helpful in the future. Very scanty information exists on the productivity and production of urban and peri-urban agriculture in the country. This is worth investigating in the future. Details in the GAPs report has not been analysed in this study and could be discussed in future.

SECTION 1: INTRODUCTION

This study is one of the projects under the International Labour Organisation (ILO), European Union (EU) and Government of Ghana (GoG) partnership in implementing the project "Strengthening the Impact of Sector and Trade Policies on Employment" (STRENGTHEN). The project, which is being implemented in close collaboration with the Ministry of Employment and Labour Relations (MoELR), the Ministry of Trade and Industry (MoTI), the social partners, and other national project stakeholders, aims to strengthen the employment dimension in policies and programmes related to international trade with better analysis, more coherent policy-making, and enhanced programmes that are designed to encourage employment creation and upgrading. The scope of this component of the project is to conduct a short background study on employment in the agricultural processing sector in Ghana with a specific focus on the agro-processing sub-sector. The purpose of the study based on the terms of reference includes:

- Provide a better sense of the overall employment situation in this sector, including potential, recent developments and growth, future prospects, quality, adherence to standards.
- Review of available data, reports, evaluations of this sector to extract employment figures for this sector to the extent possible and look at employment both in terms of quantity, but also in terms of productivity, earnings, working conditions, levels of informality, characteristics of workers (gender, age, etc.).
- As far as possible, disaggregate the data from sectors into sub-sectors based on available information; it could be split on the basis of crops and their value chains (Cacao, Yams, etc.) or size of enterprises (small, medium, etc.)
- Review the availability and level for details of macro-economic tools like Input-Output tables and Social Accounting matrices.

This report is organised into nine sections as follows. We begin with a background of the study with highlights of the context and objectives in Section Two. Section Three of the study presents the methodological approach and sources of data. A performance review of the agricultural and agro-processing sub-sectors is discussed in Section Four. This is followed in Section Five with an additional discussion of government policies and strategies related to the agricultural and agro-processing sub-sectors. In Section Six, existing data drawn from the various rounds of the GLSS, IBES and Agribusiness Unit of the Ministry of Food and Agriculture (MoFA) are used to provide a situational analysis of employment creation in the agricultural and agro-processing sub-sectors. In the next section of the study, available macroeconomic tools that can be used to provide insights on employment creation in the agricultural and agro-processing sub-sectors are discussed. Section Eight focuses on the oil palm sub-sector and provides a comprehensive overview of the structure, functions and actors within the oil palm value chain. In order to gain further insights on employment characteristics and existing strengths, challenges and opportunities in the sector, an in-depth analysis of an interview with the Human Resource Manager of the Twifo Oil Palm Plantation (TOPP) is included in the discussion. The report ends with conclusions, recommendations and areas for further research in Section Nine.

SECTION 2: BACKGROUND OF THE STUDY

In spite of the impressive economic growth rates chalked over the past two decades, Ghana continues to be confronted with some economic challenges, notable amongst them being her inability to tackle the growing unemployment in the country. Economic growth in Ghana has not been accompanied by the appropriate levels of job creation and decent work. It is estimated that close to 300,000 graduates from various universities and polytechnics enter the labour market in search for jobs each year. According to an International Monetary Fund (IMF) Country Report No. 13/187, September 2013, “Ghana will need to add 6-7 million jobs by 2030” (pp.24).

Moving forward, Ghana's growth agenda needs to be centred on structural transformation of the economy through industrialisation, especially manufacturing, based on modernised agriculture and sustainable exploitation of Ghana's natural resources. In Ghana, agriculture and agro-processing has long been an important sector of the economy. It remains the sector which employs a majority of the labour force at the rate 53.6 per cent in 2013 (Food and Agricultural Organisation [FAO], 2015). It contributes about a fifth of the Gross Domestic Product (GDP) of Ghana (Ghana Statistical Service [GSS], 2015). The sector posted a consistently increasing growth since the marginal growth of 0.8 per cent in 2011 as it grew by 1.3 per cent in 2012 and 3.4 per cent in 2013 (Ministry of Finance [MoF], 2013). Further, foreign exchange earnings from agriculture recorded increases over the past decade. The foreign exchange earnings from agriculture between 2000 and 2009 rose from USD 687 million to USD 2.197 billion (Bank of Ghana [BoG], 2010).

In spite of all these strides after 2010, indicators of Ghana's food import regime and the general picture in the agricultural sector show a bleak picture. First, imports of food are up to the tune of USD 1.5 billion (GoG, 2014). This represented a share of 3.35% of GDP. This was actually a double of the average figure for Africa's food import bill which stood at USD 750 million per country. Besides, Ghana's import bill per person was USD 55.97 which was also higher than the average import bill for Africa which stood at USD 36.36. Secondly, the agricultural sector's contribution to GDP has been reducing since 2004. In 2004, the agricultural sector contributed 40.3 per cent to GDP, but declined to 33.9 per cent in 2008 with a further reduction to 22.9 per cent in 2012. Furthermore, in 2015, it contributed 19.7 per cent to GDP (GSS, 2010; 2015).

In 2010, GoG developed a new and comprehensive development programme known as the Ghana Shared Growth and Development Agenda (GSGDA) with eight (8) broad policy objectives that are relevant to MoFA. The agenda reflected traces of state-market fusion where both government and private actors work in partnership to play active roles in the pursuit of agricultural development (see GoG, 2013). Generally, these programmes were designed to achieve, among others, the following objectives:

- I. Increase agricultural competitiveness and enhance integration into domestic and international market;
- ii. Reduce production and distribution risks/bottlenecks in agriculture and industry;
- iii. Promote the development of selected crop for food security, export and industry; and
- iv. Promote the application of Science, Technology and Innovation in all sectors of the economy.

Some of these policy objectives reflect the importance of agro-processing in Ghana's economy. With a large proportion of its products undergoing some form of processing, the crop sub-sector contributes about 66.2 per cent to the agricultural sector in general in Ghana (MoFA, 2010). In the crop sub-sector, maize is the most processed item. Other commodities which equally undergo processing include nuts and oils, fish, millet, sorghum and guinea corn.

The agriculture and agro-processing sector have received some attention from government through the formulation of policies and programmes. These policies and programmes are directly or indirectly aimed at promoting the activities in the agriculture and agro-processing sectors. Among these policies and programmes are the following:

- i. Trade Policy Guidelines, 2004
- ii. National Export Development Programme, 2013
- iii. Ghana Export Trade Information Centre (GETIC), established in 2005
- iv. Rice imports ban through the country borders, since 2013
- v. Customs and Excise Act amendment, 2008: tariffs on rice, wheat, yellow maize and vegetable oil temporarily lifted (reintroduced in 2010)
- vi. Ghana Agricultural Sector Investment Programme (GASIP) introduced in 2014

However, the full potential of agriculture and agro-processing as an engine for employment creation towards economic development has not yet been realised in Ghana. Agriculture's labour absorption capacity has been declining over the years. In 2007, it employed 55.2 per cent of the labour force, this figure reduced to 54.6 per cent in 2009. The sector experienced a further reduction of one (1) per cent to 53.6 per cent in 2013 (FAO, 2015). Furthermore, the agricultural sector recorded the least number (1,756) of jobs created in 2014 representing one (1) per cent of total number (207,492) of jobs created (GSS, 2015).

The inability to increase agriculture's labour absorption capacity, in the midst of Ghana's agricultural sector not being fully modernised (FAO, 2015), raises some policy gaps. This can be addressed by obtaining adequate information that will enable us to better understand the employment generation capacity of the agriculture and agro-processing sub-sectors. The study seeks to shed light on the characteristics of employment in these sub-sectors. In addition, the usefulness and limitations of existing macroeconomic tools such as the input/output tools and the social accounting matrices used to ascertain data on employment in the agricultural and agro-processing sub-sectors will be examined.

2.1 Aim and Objectives

Broadly, this background study seeks to give account of the existing body of knowledge on employment in the agriculture and agro-processing sectors. The specific objectives are as follows:

- i. Undertake a situational analysis of the agricultural and agro-processing sectors in Ghana, in terms of its profile, contribution, constraints and opportunities, including a review of current strategies on employment creation in agriculture value chains;
- ii. Harmonise data and key findings from the studies that have been done on employment in the agriculture and agro-processing sectors in Ghana;

- iii. Disaggregate the main existing agricultural and agro-processing employment data into sub-sectors, size, gender and skills profile, in order to understand the frequency and trends in employment in these units and their relative importance;
- iv. Review the availability and depth of macroeconomic tools in order to ascertain their effectiveness and potential for policy analysis in the agro-processing sector; and
- v. Provide in-depth analysis based on selected agro-processing units in Ghana aimed at assessing their relative strengths, weaknesses, opportunities and threats vis-à-vis their capability to create employment.

2.2 Research Questions

To achieve the above objectives, the following questions are raised:

- i. What are the distinctive characteristics of employment in the agriculture and agro-processing sectors?
- ii. What are the current strategies and their prospects in enhancing employment in these sectors and how do they align or contradict with other policy objectives?
- iii. To what extent do existing data and reports address issues on the heterogeneity employment data (measured in terms of skills quality, productivity, earnings, working conditions, level of informality and other characteristics) among different groups within Ghana?
- iv. What are the existing macroeconomic tools used in the analysis of agriculture and agro-processing employment data?
- v. What are the macroeconomic tools currently available in analysing employment data in agriculture and agro-processing sectors?
- vi. How effective are these tools in analysing employment data?
- vii. What are the strengths, weakness, opportunities and threats of selected key sectors in the agro-processing sector?

SECTION 3: METHODOLOGY FOR IMPLEMENTING THE BACKGROUND STUDY

The background study was implemented using a three-phase sequential approach as follows: Phase 1: Inception meeting, selection of key stakeholders and documentary review; Phase 2: Data collection and analysis; and Phase 3: Report writing and dissemination of findings.

3.1 Phase One: Inception Meetings, Selection of Key Stakeholders and Documentary Review

The activities described below were implemented at this phase of the project implementation process.

3.1.1 Kick-off meeting and preparation of work plan

The Consultant (Directorate of Research, Innovation and Consultancy of the University of Cape Coast [DRIC-UCC]) held a kick-off meeting with the Client (ILO) after the award of contract to discuss the project implementation strategies and plan. At this meeting, a number of inputs were made which have subsequently been incorporated into this study.

3.1.2 Selection of key stakeholders

Key stakeholders in related governmental and non-state institutions were selected and contacted for data on the issues under study. The following institutions were identified for interviews: GSS, Trades Union Congress (TUC), MoFA, FAO, International Food Policy Research Institute (IFPRI), Alliance for Green Revolution in Africa (AGRA), National Development Planning Commission (NDPC), ILO, Ministry of Employment and Labour Relations (MoELR), MoTI, National Board for Small Scale Industries (NBSSI), Ghana Export Promotion Authority (GEPA) and any other relevant stakeholders.

As at now, all of the institutions were contacted with the exception of AGRA, NDPC, IFPRI, GEPA due to time constraint. In addition to the above, new institutions were identified and contacted. They are: AGI, TOPP, Ameen Sangari Limited and Graceland Artisanal Mill. The full list of the key informants interviewed has been provided in the Appendix C.

3.1.3 Design of research instruments

The objectives and research questions were generally formulated to assist the Consultant (DRIC-UCC) in the development of in-depth interview instruments which was used to solicit data from the key stakeholders. The instruments were subjected to review by the Client.

3.2 Phase Two: Data Collection and Analysis

This phase was devoted to activities that covered recruitment and training of research assistants and data collection. The specific details of the process are described below:

3.2.1 Recruitment and training of research assistants

Two research assistants of UCC were hired to support the research team in the implementation of the study. These assistants helped in the recording and transcription of qualitative data from interviews with key stakeholders as well as generation of relevant tables from the various datasets. A two-day training was organised for the research assistants by the research team on issues that relate to the objectives of the study, ethics in research, roles of the various research staff, anticipated challenges and how to resolve them.

3.2.2 Reconnaissance survey to key stakeholders' institutions

The actual interviews with the stakeholders were preceded by reconnaissance visits to prepare the terrain for a smooth data collection. During these visits, key respondents were informed about the study objectives, and their expected involvement. The visits were used to make arrangements with them regarding the convenient time for the interviews. These activities were implemented by the lead consultant and a member of the team.

3.2.3 Data gathering (stakeholder interviews and desk reviews)

The research was carried out using data drawn from primary and secondary sources. Primary data were drawn from key stakeholders. The consultant constituted three teams each of which comprised two members and research assistants to collect data. Each team was led by a member of the research team with the lead consultant playing the role of a monitor. Members of the research team were tasked to conduct the interviews, while the assistants recorded and transcribed the responses. The entire field data collection, including mop-ups lasted 10 man-days, including days for travels.

Secondary data were obtained from data sets such as the GLSS 1-6, Ghana PHC 2010, Enterprise Survey and Integrated Business Establishment Survey. In addition, technical reports from GSS, MoFA, FAO, NDPC, MoTI, TUC, GEPA and published academic research papers (such as books and peer-reviewed articles) were reviewed. This was complemented with other online information sources.

3.2.4 Data analysis

Data collected were cleaned. Subsequently, data were analysed using both qualitative and quantitative approaches to provide evidence-based (quantitative and qualitative) descriptions of current employment situation in Ghana relative to the agricultural and agro-processing sectors. Data obtained from the secondary sources were also analysed using content analysis through which employment data from the agriculture and agro-processing sectors were mapped out according to defined features. The analysis sorted out the various levels of employment creation potentials of the various policy strategies introduced in the agricultural and agro-processing sectors.

Qualitative data obtained were analysed using the comparative analytic strategy which unearthed the basic social process that characterise the formulation and implementation of employment creation strategies coupled with the opportunities in the agriculture and agro-processing sectors. Quantitative data were analysed using cross-tabulations, frequency distribution and content analyses with the assistance of STATA software.

SECTION 4: PERFORMANCE REVIEW OF THE AGRICULTURE AND AGRO- PROCESSING SECTORS IN GHANA

4.1 Introduction

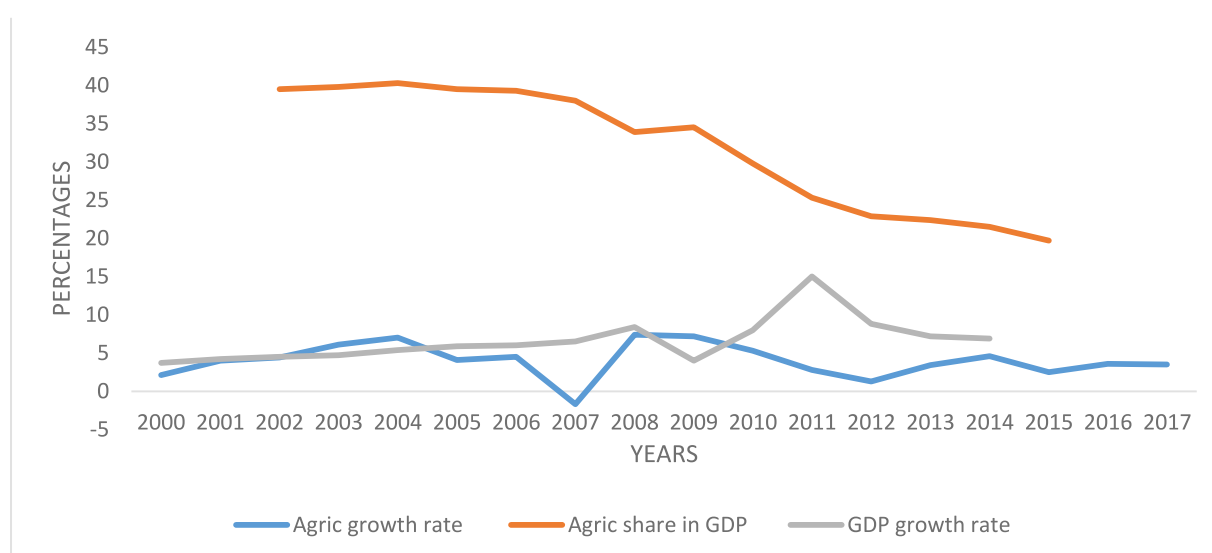
This section introduces the situational analysis in the agriculture and agro-processing sectors. It discusses the current trends and general overview of the sector. Public investments and credit financing situation in the agriculture and agro-processing sectors are also discussed.

4.2 Performance of the Agricultural Sector

After 1983, agriculture grew at an average annual rate of 5.1 per cent one of the five fastest growth rates anywhere in the world. The sector grew on most fronts. Staple crop production has also increased – cassava, yam, cocoyam and sweet potato, in particular. With rising yields and a more than doubled harvested area since 1983, cassava production has grown by over 7.2 per cent a year during the past 25 years as non-traditional exports have also taken off (Wiggins & Leturque, 2010).

In spite of these achievements, agriculture's contribution to GDP has been on the decline since 2002 up till 2002. The figure shows the trend for some selected years.

Figure 1: GDP growth rate, Agricultural sector growth rate, and Agricultural share of GDP



Sources: Ministry of Agriculture, 1991; CEPA, 2004; GSS, 2010, 2012, 2015; IMF, 2004; NDPC, 2013

Figure 1 suggests that agriculture's contribution to GDP declined at the rate of 24 per cent. Indeed, it will be instructive to observe that the contribution of the agriculture's sector operates in a 'trilectical' relationship between the manufacturing and the service sectors. In this sense, the drop or increase of the agriculture's contribution to GDP is either a function of the relative contribution of the manufacturing or the service sectors to GDP for a given

period. In other words, if agriculture is declining, then the service and manufacturing sectors may be purported to be increasing their contributions to GDP. Theoretically, one may consider the declining contributions of agriculture as a sign of economic growth and could represent a precondition for an economic take-off (see Rostow, 1956). However, from a more realistic point of view, this assertion is valid only if three conditions are satisfied:

- a. When the GDP growth rate is increasing in absolute terms
- b. If agriculture's performance for a particular year constitutes an improvement upon previous periods' performances
- c. If the growth rate of agriculture is increasing at either the same rate as the GDP growth rate or above the GDP growth

Therefore, the mere drop in agriculture's contribution to GDP may not constitute a real picture about whether or not inherent challenges exist in that sector. In this regard, a more reliable way of determining the performance of agriculture in the entire economy is to ascertain the rate of growth in the agricultural sector and compare it with the overall GDP growth rate, which is measured as the average of the growth rates of all the sectors of the economy.

Figure 1 shows that the agricultural sector's performance in terms of growth rate has been lower than the GDP growth rates. Perhaps the period between 1970 and 1983 which saw the agricultural sector performing better (-0.5) than the GDP growth rate (-0.8), the performance was still abysmal, in absolute terms (IMF, 2004).

Following these developments, the agricultural sector which experienced a declining growth in 2010 and 2011 began to show signs of strides and recovery in 2013. The sector posted a consistently increasing growth since the marginal growth of 0.8 per cent in 2011 as it grew by 1.3 per cent in 2012 and 3.4 per cent in 2013 (MoF, 2013).

Further, foreign exchange earnings from agriculture recorded increases over the past decades. The foreign exchange earnings from agriculture between 2000 and 2009 rose from USD 687 million to USD 2.197 billion (BoG, 2010). The increase in foreign exchange earnings was due to a number of factors ranging from the introduction of fertilizer subsidies, price setting, trade liberalisation, credit to SMEs and income tax deductions and exemptions. Yet less than 15 per cent of farm businesses produce approximately half of total cash crops, exported agricultural commodities and livestock (Tandoh-Offin, Owusu-Ansah, Amewu, Afful & Boakye, 2013). This represents a potential, albeit a challenge, which can be addressed through agricultural mechanisation.

In spite of all these strides after 2010, indicators of Ghana's food import regime and the general picture in the agricultural sector show a bleak picture. First, imports of food are up to the tune of USD 1.5 billion (GoG, 2014). This was actually a double the average figure for Africa's food import bill which stood at USD 750 million per country. Secondly, the agricultural sector's contribution to GDP has been reducing since 2003 as indicated in the Figure 1.

As indicated in the figure, agriculture's contribution to GDP declined from 39.8 in 2003 to 19.7 in 2015 representing a drop of 20.1 percentage points in twelve years. In addition, the performance of agriculture, in terms of growth rates, vis-à-vis the economic growth rate has been largely unimpressive as indicated in the figure.

Figure 1 indicates that the performance for the agricultural sector for the period between 2003 and 2013 was below the expected benchmark pegged at 6 per cent per annum, in line with the Maputo CAADP. Besides, its performance was below the overall GDP growth rate. Average growth rate was 4.16 per cent, while the GDP growth rate averaged 7.23 per cent. Granted that this is an indication of the service and industrial sectors performed better than agriculture within the 2003-2014 period, it is, more importantly, noticeable from the table that the performance of the agricultural sector between 2003 and 2014 grew cumulatively by -1.7, while the GDP grew by -1.2 per cent.

4.3 A Review of the Agro-processing Sector

Agro-processing firms are those which process agricultural products in their raw state either for the purpose of re-processing or final consumption. In other words, agro-processing firms in this context refer to those firms which rely on primary agricultural producers as their source of raw material supply. Agro-processing may vary from simple preservation operations such as drying products in the sun to more complex capital-intensive processes. Agro-processing industries are typically comprised upstream and downstream industries (Owoo & Lambon-Quayefio, 2017). Upstream industries are those engaged in the initial processing of agricultural commodities, such as rice and flour milling, leather tanning, cotton ginning and fish canning. Downstream industries are involved in more complex processing of intermediate products made from agricultural materials such as the making of bread, biscuits, textiles, paper, clothing, and footwear (FAO, 1997).

The FAO (1997) put in plain words that agro-processing is the subset of manufacturing involved in the transformation of raw materials and intermediate products obtained from agriculture (in Ghana, these may include products from forestry and fisheries cocoa, food crops and livestock). While agro-processing may involve three main patterns which are the global-to-local patterns (processing of imported agricultural commodities to be sold on the local market) and local-to-global patterns (processing of locally produced commodities for export) and the local-to-local patterns (production of locally produced commodities for domestic consumption), Owoo and Lambon-Quayefio (2017) indicate that the agro-processing industry in Ghana is mainly local-to-local patterns and appears to be mostly concentrated on and dominated by informal-sector activities. Agro-processing thus, refers the process of converting agricultural products into either semi-processed or into final products.

Agro-processing firms are characterised by crucial backward and forward linkages. Backward linkages arise when local producers are able to satisfy their demand for raw materials and services from local suppliers. This may refer to the supply of credit, inputs, and other production-generating services. Backward linkages may be established by the procurement of capital goods and equipment from other industries, or by the purchase of agricultural inputs from farmers. Forward linkages, on the other hand, involve the creation of additional opportunities in other parts of the economy from the activity of agro-processors through to the sale of processed products (FAO, 1997; Mittal, 2007). Due its high degree of interdependence with forward and backward activities, agro-industry can play a very important role in accelerating economic activity (FAO, 1997). This includes the marketing of these products and the generation of employment opportunities through value-addition processes (Owoo & Lambon-Quayefio, 2017).

Forward linkages may be established through the sale of processed goods to final consumers, or the sale of processed goods to other firms who use them as inputs into their own production processes (Owoo & Lambon-Quayefio, 2017) and would have positive implications for increased export earnings, employment generation, and greater food security (Babu, 2000).

The role of agro-processing in Ghana's development could be vital, given its ability to generate increased demand for the products of other industries through backward or forward linkages. Agro-processing, an integrated form of agricultural development, may also be expected to have the strongest effect on agricultural production, given the increased demand for locally produced primary products from this sector.

The raw materials that are processed include maize, cocoa, cashew, coconut, sunflower, oil palm, groundnut, millet, sorghum, guinea corn, rice, soybean, cotton, cassava, sweet potato, yam, fruits and vegetables. In Ghana, some specific agriculture value chain crops have been identified as priority crops. For the sake of this presentation, the raw materials will be categorised into fruits (banana, pineapple, mango, orange and pawpaw), vegetables (Pepper, tomatoes, carrots, lettuce, cabbage, green pepper and shallots), cereals & grains (maize, soya, rice and sorghum), and tubers (Yam and Cassava).

4.3.1 Processing of fruits

The main fruits processed in Ghana include pineapples, papaya, mangoes, coconuts and fruit. The final products are mainly in the form of fruit salad and juice (Owoo & Lambon-Quayefio, 2017). Some few medium-scale companies have dominated the processing of fruits for exports though there are several micro firms processing fruits for local consumption. There are a number of large-scale fruit agro-processing firms in Ghana. A notable one is Blue Skies of the United Kingdom which processes some 15,000 tonnes of pineapples at Nsawam for export (Afful-Koomson, Fonta, Frimpong & Amoh, 2014). Pinora, a German-Ghanaian firm based in Asamankese also buys pineapples and oranges from about 25,000 farmers and processes them into frozen juice concentrates for exports. There are firms, which are also involved in these commercial crops such as are Koranco Farms, Combined Farms, Greentex and Green Span (Ministry of Local Governance and Rural Development [MLGRD], 2013 as cited in Afful-Koomson et al., 2014) and they serve as key suppliers to the agro-processing firms. This implies that lots of opportunities for export earnings are available for investors in the fruit processing sub-sector. Once the value chain in the fruit agro-processing sector has been established, it also creates grounds for employable force to be harnessed.

4.3.2 Processing of vegetables

In Ghana, processing of vegetables such as okra, tomatoes, pepper, onions, cabbage, lettuce, green beans and mushrooms are very limited. Very few firms go into the processing of vegetables processed. On the supply side, greater percentage of farmers and firms involved in vegetable farming sell their produce as “fresh” to customers. Although almost all farmers cultivate these crops in their farms, they are usually on subsistence basis. Few sell vegetables from their farms. There are some small-scale vegetable farmers, usually at the urban centres, who supply customers looking for fresh vegetables. The few farmers who

produce on commercial basis lose greater percentage through spoilage because there is no ready local market to absorb the vegetable produce. On the demand side, the desirability of fresh vegetables renders demand for processed vegetable very low in Ghana (Owoo & Lambon-Quayefio, 2017).

However, the case of tomato processing presents a unique picture for further analysis into the vegetable agro-processing industry. Even though consumers generally prefer fresh vegetables, there is an equally high demand for processed tomatoes. Yet, processing of tomatoes, which is one of the major vegetables grown at useful scale, has not been successful in Ghana. For example, the Pwalugu Tomato Factory has been unsuccessful in processing tomatoes in the northern part of Ghana due to poor corporate governance. The factory's inability to process tomatoes was due to low supply of tomatoes from farmers who find the producer price as determined by the factory management as not quite incentivising. Consequently, the level of production of processed tomatoes has been low, so the consumers of processed tomatoes usually buy imported products which are mostly cheap.

These issues outlined concern the vegetable agro-processing sub-sector poor value chain linkages. The poor linkages are symptomatic of one of the general agricultural challenges facing the country, particularly weak infrastructure, including the lack of storage facilities. Hence the lack of storage facilities underlies the high post-harvest losses of vegetables in the country. This does serve as a form of attraction for firms processing vegetables at appropriate scale. These challenges suppress the potential for growth in the vegetable agro-processing sector and its capacity to generate employment.

4.3.3 Processing of cereal

In Ghana, the mostly processed cereals are maize, rice, sorghum and millet. Maize is usually milled into flour and used for porridge, beverages such as 'asana' and other foods (Owoo & Lambon-Quayefio, 2017). Premium Foods is one of the leading processors of maize and soya beans in Ghana, with an annual production volume of about 10,000 metric tons. In 2012, Ghana exported 1,465 metric tonnes of cereals which increased to 5,050 metric tonnes in 2013 representing a change of 244.7 per cent. The amounts accrued from these exports were USD 325,080 in 2012 to USD 756,000 in 2013 representing a change of 132.6 per cent (NDPC, 2014). Rice processing in Ghana is normally done in the Volta, Eastern and Northern regions understandably because the ecological conditions in these regions are favourable for rice production. Processing of rice in Ghana takes place at all levels of agro-processing, including household level, small-medium scale level, custom milling level and large-scale market oriented rice processing based on the scale of operation (Afful-Koomson et al., 2014). Farmers in Ghana usually thresh the paddy immediately after harvest and store it in bags or on the panicle in special storage facilities. For all villages in Ghana engaged in rice processing, de-husking rice grain is by pounding with a pestle and mortar. In the Northern region of Ghana, where the climate is much drier, the rice grown in this environment is subjected to the process of parboiling to prevent breakage during milling. The parboiled rice is milled and then sold to the nearby markets. It is, thus, obvious that the processing of rice is not sophisticated and it renders it low in terms of aesthetic quality. This reduces the demand for local rice and generates preference to foreign produced rice. This limits the potential for job creation in the rice processing industry.

4.3.4 Processing of roots and tubers

Roots and tubers contribute about 46 per cent to Ghana's agricultural GDP (Stumpf, 1998). Cassava, the most processed crop among the roots and tubers in Ghana, has many firms involved in it. Processing of cassava into shelf-stable products and making it fortified with high protein food such as soy, helps overcome the high perishability and low level of proteins in cassava (Afful-Koomson et al., 2014). Cassava is processed into a variety of products such as 'gari', 'kokonte', starch, dough, 'tapioca', chips and flour. The Root and Tuber Improvement and Marketing Programme (RTIMP) is the programme that coordinates the processing of roots and tubers in Ghana. Its task is to identify and promote more efficient processing technologies for roots and tubers.

4.3.5 Processing of nuts and oil

Palm oil constitutes the single most important source of edible oil for most West African countries especially those in the coastal and forest zones. It is usually used for margarines, cooking fats and soap production (Afful-Koomson et al., 2014). In 2012, Ghana exported 314.639 metric tonnes of oil seeds and nuts which increased to 443.09 metric tonnes in 2013 representing a change of 40.8 per cent. The amount accrued from these exports were USD147,228,760 in 2012 to USD226,248,430 in 2013 representing a change of 53.7 per cent (NDPC, 2014). Ghana processes oil palm into two forms, namely the 'Dzomi' and 'Amidze'. In order to make the Dzomi, the fresh palm fruit is washed, boiled and pounded in large mortars using pestles to ease the mesocarp from the nuts (Ata, 1974). The nuts are then removed and the fibrous mash is kneaded to extract the oil. Cold water is then poured into the mash and after some period the oil phase settles on top of the water phase containing the extract from the mesocarp. After the settling period, the oil is skimmed off and retained for further boiling and a little amount of salt is added. The boiling is continued until effervescence ceases. The oil is then left to stand until the roasted fibrous portion of the palm fruit settles at the bottom and separated from the Dzomi.

In the case of Amidze, the only difference between its processing and that of Dzomi is that, there is no boiling of the palm fruit. The palm fruits used are usually fermented. The palm kernel that is derived from the processing of Dzomi and Amidze is used for coaltar, glass, and ceramics. Currently, Ghana Nuts Company Limited is one of the leading agro-processing firms involved in the production and export of a range of edible oils, animal feed input materials and shea butter. TOPP is another leading palm oil processing company in Ghana with Unilever Company Limited as its main consumer¹.

Despite the promising state of Ghana's agricultural sector, the linkage between agriculture and industry appears weak, and value additions by the manufacturing sector remain low (Owoo & Lambon-Quayefio, 2017). Besides, agribusiness developments have been erratic and hesitant, given the lack of comprehensive transport, research and high quality seed infrastructures, along with difficulties in acquiring large tracts of land (Amanor, 2013). Therefore, governmental intervention as Mittal (2007) recommends is required to create a policy environment that will ensure a mutually beneficial relationship between the farmers and organised sector. Along with investment in infrastructure, development of extension activities and linkages with farmers are also important areas where government

¹ Other processing activities such as fish processing, livestock processing, and processing of forest product are also important but have been left out in the discussion for the time being.

can play influential roles. There is also a need to improve post-harvest operations related to handling, storage and marketing of fresh and processed agro-produce. Volumes saved in post-harvest losses are actually the surpluses generated, without additional cost.

4.3 Public Investments in the agriculture and agro-processing enterprises

The challenges in the production systems are directly linked with the challenge of agricultural financing. It is so because, as Jebuni, Asuming-Brempong and Fosu (1990) rightly point out, public financial support is a functional prerequisite for infrastructural development which can stimulate private investment in the agricultural sector. The table shows the share of agriculture in development expenditure with funds drawn from internal and external (donors and capital markets) sources.

Period	Share of Expenditure (%)
1961-1965	8.9
1980-1989	5.62
1990-2003	4.37
2004	1.36
2005	1.65
2006	1.43
2007	1.29
2008	1.58
2009	1.98
2010	n/a
2011	n/a
2012	2.6
2013	n/a
2014	n/a
2015	1
2016	3

Sources: Jebuni et al., 1990; ISSER, 2013; Benin et al., 2014; MoF, 2015

Agriculture's share of development expenditure declined from the 1960s to the early years of the new millennium by more than half. It, however, increased to a rate close to that of the 1960s in 2004 following government's ratification of the Maputo Declaration in 2003. Since then, there have been few instances when Ghana's expenditure on agriculture has reached or gone beyond the 10 per cent mark. However, a correlational analysis between the agriculture's share of development expenditure and growth rate in the agricultural sector suggests that increase in budgetary allocation for the agriculture's sector did not essentially increase agriculture's growth rate for that same period. This was because some hitches accompanied the increased allocation, while some age-old hitches also persisted. First, it

was apparent that consumable inputs were given much premium than intangible inputs. A public expenditure analysis of Ghana's agricultural policies for the period 2006-2012 show that, whereas the share of agriculture-specific expenditure on payments to producers in the form of fertilizer subsidies increased substantially, the share of agriculture-specific expenditure allocated to agricultural research and knowledge- transfer activities (such as training, technical assistance and extension) decreased sharply (FAO, 2014). Second, the share of total public expenditure in support of the food and agriculture sector, including administrative costs dedicated to agricultural and rural infrastructures declined across the period (FAO, 2015). Third, the administrative costs seem to absorb a large portion of agricultural public expenditure in Ghana, as they represented about 35 per cent of EFAAC, on average, between 2006 and 2012 (FAO, 2015).

Moving ahead into 2015, government's budgeted expenditure on the agricultural sector was GH¢395.19 million, while for 2016, GH¢355.14 million was budgeted, indicating a 10.1 per cent decrease. This situation is not different from the general trend in sub-Saharan Africa which saw a decline by 25 per cent. However, it represents a marked difference from the East Asia and Pacific region which saw its real per capita agricultural expenditures increase seven-fold from 1980 to 2010, and South Asia nearly four-fold (see IFPRI, 2016). This indicates that the agricultural sector still faces constant neglect under recent political regimes. This trend represents clear political deficiencies in the agricultural sector. The deficiency moves beyond a mere lack of will. This is because the willingness has already been expressed in the agreement to spend 10 per cent of total public expenditure on agriculture at the Maputo Declaration. Rather, it demonstrates the lack of translating willingness into action among political leaders to embark on agricultural development.

4.4 Credit Financing

The current challenge in the agricultural sector is inextricably linked with access to credit. The state's recognition of this reality resulted in the formulation of a policy to formalise credit to small-scale farmers and for agricultural development, all of which culminated into the establishment of the Agricultural Development Bank in the 1960s. The bank was obliged to lend not less than 25 per cent of loanable funds to the agricultural sector at a subsidised interest rate (Nyanteng & Dapaah, 1993).

However, as they observed, the policy was scrapped in the 1990s due to neo-liberal policies which called for reduced state intervention in economic endeavours. Consequently, small-scale farmers endured the double jeopardy of financial credit. Not only has the interest rate on agricultural loans been raised to the same level as non-agricultural loans, but there has been a sturdy decline in the access to credit by farmers. Evidently, between 2001 and 2010, agriculture's share of credit dropped from 16.8 per cent to 5.5 per cent (MoFA, 2010) and the interest rates were as high as 27.63-32.75 per cent being the same as the interest rates for the export and manufacturing sector (BoG, 2007). Even though 2011 recorded a marginal increase over the 2010 figure to 5.9 per cent, the share of agricultural credit declined to 4.70 in 2012 and further to 3.16 per cent in 2013 (BoG, 2013).

As a result, the agricultural sector ranks 9th (on a scale of 1-11) among sectors which receive financial credit from Deposit Money Banks (NDPC, 2013). The reasons are not far-fetched. The commercial banks indicate that the default rate among farmers is high and the administrative cost of processing loans to small scale farmers both of which act as

disincentives to offer loans to small-scale farmers (Nyanteng & Dapaah, 1993). Consequently, small-scale farmers are disposed to rely on informal sources of financial credit usually from friends, relatives, private money lenders and private credit schemes. The money is not only meagre, it also attracts high interest rates (Nyanteng & Dapaah, 1993). The decline in the access to credit to the agriculture is happening, ironically at a time when GDP has been growing. It demonstrates that agriculture seem marginalised as the economy expands.

The challenge associated with access to credit reflects some inherent deficiencies associated with state-led financial credit regime which is riddled with inefficiencies in the recovery regime. This was what accounted for a scrap of the policy in the 1990s. However, the introduction of neo-liberal orientations did not address the challenges either. The challenge associated with access to credit in the agricultural sector, after the 1990s, also reflects some of the shortfalls inherent in economic liberalism, especially when it is carried without regard to the structure of the economy where it is introduced. The agricultural sector is challenged because the state has allowed market forces to determine farmers' accessibility to credit when farmers lack the financial wherewithal to actively participate in the economy where rationality seem to guide the actions of economic actors. It is clear that none of the systems (i.e. state-led agricultural financial credit and neo-liberal financial credit) essentially addresses the challenging issues with agricultural. It is, therefore, useful to interrogate the contexts within which the credit is given.

The trends that characterise the formal access to credit show that the whole idea of loans to farmers by commercial banks has not been placed within the right contexts. Giving out loans without the right infrastructure and extension services to enhance production and distribution may not effectively enhance higher productivity. Inevitably, the high default rate, which acts as a disincentive to banks, becomes an outcome. Reversing the high default rate may then require strong linkages between the access to credit and infrastructural development and improved agricultural extension services.

SECTION 5: REVIEW OF POLICIES AND STRATEGIES IN THE AGRICULTURAL AND AGRO-PROCESSING SECTORS

5.1 Introduction

In this section we discuss the various policies and strategies that has shaped the performance in the agriculture and agro-processing sectors of Ghana.

5.2 Evolution of Agricultural Policies in Ghana's

Ghana's agricultural regime has moved on many policy-formulation and implementation trajectories. The varied policies have occasioned specific periods of Ghana's politico-economic history. Seini (2002), identifies five distinct periods among which one could find notable policy variations.

It starts with the pre-independence era with strong drive for export crop production. This was followed by the immediate post-independence era characterized by massive government participation. This was also followed by neo-liberal economic policies which saw the introduction of the capitalist means and modes of production. As Seini (2002), observed, each of these periods was interspersed with periods of economic down turns preceding eras of “stabilisation and adjustment”.

Since the country became politically independent in March 1957, the policies have been marked by some general national goals and objectives which have not changed in substance, albeit some varying emphasis (Nyanteng & Dapaah, 1993). The major goals have been the following:

- i. produce enough food to feed the population
- ii. produce enough raw materials for the existing and contemplated agro based industries
- iii. earn foreign exchange through cocoa and non-traditional export crops

Other goals explicitly or implicitly stated include:

- i. increasing employment opportunities through agriculture
- ii. reducing underemployment by raising labour productivity
- iii. increasing incomes of small scale farmers
- iv. ensuring food prices at reasonable levels
- v. releasing and generating resources (labour, capital, etc.) for industrial and general economic development and
- vi. ensuring food availability to meet nutritional requirements and at affordable prices (food security)

Following is an outlay of the various regimes and the unique policy strategies which were developed by the political actors of each regime and the associated deficiency thereof.

5.3 State-driven Agricultural Development

The immediate post-independence era was marked by the desire for rapid industrialisation and social development among the teeming youth in the urban areas. At this point, there was a widespread belief that development is coterminous with industrialisation (Killick, 2010). This development trajectory influenced the content of agriculture-related policies and the direction of the agricultural industry. This period was, therefore, an era of massive state participation in agriculture during which attempts were made to develop large scale farming through mechanised agriculture. This was a period which, to Seini (2002), was necessitated by having an agricultural policy that would avoid dependence on small-scale farmers, while it created job opportunities. Frimpong-Ansah (1991), notices that at this same point, agriculture was supposed to be used to enhance rapid industrialisation real strategy to tax agriculture through both direct and indirect means to finance the rapid import based industrialisation.

This was a system which believed that centralising power can help achieve the aims of agricultural policies of the time. Thus, in a first Five-Year Development Plan (1951-56) developed by the government, the view was expressed that agriculture could be modernised and adapted to the needs of an expanding economy solely through progressive improvement of the traditional subsistence system of production. Accordingly, large-scale farms under public auspices were to be established leading to the establishment of the Agricultural Development Corporation (ADC).

The government's agricultural effort was shifted almost completely to a new sector of state and co-operative agriculture. This was expressed in the formation of the United Ghana Farmers' Council (UGFC) with the responsibility of organising the small farmers for mechanised agriculture through cooperative efforts and the provision of extension services.

In addition, the State Farms Corporation (SFC) was formed to undertake large scale mechanised farming which rapidly expanded its farms and total land holdings. The Ghana State Fishing Corporation (GSFC) was formed and organised with a fleet of fishing trawlers and cold storage facilities to undertake the fishing and distribution of fish throughout the country. The Workers' Brigade and the Young Farmers' League were also established to run farms.

After a careful evaluation of large-scale agriculture involving public ownership the general conclusion by many analysts is that it was a failure. Low levels of productivity leading to inflationary prices of food stuffs were symptomatic of this failure (Killick, 2010). The reasons are reviewed as follows.

First, Dapaah (1995) bemoaned an apparently relative neglect of the agricultural sector. He argues that the overall policies pursued in the post-independence era did not favour agriculture in general and food production in particular. This was evident in that only between 4.3 per cent and 13.5 per cent of annual development expenditure was allocated to agriculture between 1961 and 1965. Meanwhile, the bulk of the money going to the socialised sectors even though its net contribution to aggregate production was less than one (1) per cent (Seini, 2002). This failure in the agricultural sector was also attributable to the fact that the policies failed to recognise the implication of rapid population growth for the agricultural sector (Seini, 2002). This does not only demonstrate a clear case of leadership deficiency evident in a lack of vision but signifying a misplaced agenda for economic development. Furthermore, Killick (2010), points out that there were high scales of

inefficiency in the distributive system. This was due to the centralisation of the system which led to the abuse of control of the few distributive channels by actors in the agricultural value chain at the time.

Asamoah (2001), corroborated by Seini (2002) and Killick (2010), pointed out the peasant sub-sector as the worst hit by the relative agricultural neglect. Not only were they totally excluded from the strategies for economic development (Asamoah, 2001), there was a cut down of paltry investment in small-scale farming (Seini, 2002) leading to a discouragement of the rise of the indigenous class of private industrialists (Killick, 2010). This is closely linked with a clear case of poor governance which characterised the administration of the agricultural policy. For example, Killick (2010), intimates that the UGFC lacked the technical expertise, administrative capacity and motivation to operate an extension service. Further, the officials used their positions to cheat farmers who became increasingly hostile to the organisation which was supposed to help them.

Apart from the neglect of peasant farmers, Seini (2002), makes an observation which suggests that the overall objective which drove the agricultural development planning process was misplaced. He reckons that agricultural policies in the early years of independence were designed to deal primarily with urban unemployment and not to deal with rural poverty. The policies were equally designed to avoid dependence on the small-scale independent private farmers whose political philosophy was inconsistent with that of the ruling party. Hence the state-led agricultural policy had to be accompanied with a centralised method of control characteristic of most state-led development programmes.

From a political economy point of view, the state-led agricultural policies failed because the individual economic liberties of the peasants which could have enhanced some degrees of creativity and rationality were subsumed under an overly centralised control of agricultural activities by state institutions. These failures which occasioned the state-led agricultural approach confirm the views of critics of socialism such as Hayek, Friedman and Schumpeter that central planning is significantly inefficient in terms of development and resource allocation.

However, some forms political deficiencies associated with the implementation of the state-led agricultural policy were independent of the centralisation of control. For example, the issues of neglect could not have been a function of the state-led approach to agricultural development but demonstration of a poor appreciation of the role of the peasant in the agricultural sector (Asamoah, 2001). It was also a demonstration of the lack of knowledge about the actual character of socialist agricultural planning which, in essence, responsibly organises small scale farmers into cooperatives into the mainstream mechanised farming to promote higher agricultural productivity as was the case in soviet countries (Frimpong-Ansah, 1991). Hence the failure of agricultural development was a product of a system which did not encourage and expand opportunities to small-scale farmers to use their ingenuity and creativity and rationality to guide economic actions. Agriculture also failed around this period the political system was riddled with political actors who paid lip service to the real directions needed for agricultural development and misapplied the strategies in the system they purported to be practicing.

5.4 The Agricultural Sector Policies in the 1970s

During this period, agricultural development, specifically rural farm production, was integrated into a large-scale development plan occasioned by considerable investments in rural development projects in roads, water and electricity. In addition, irrigation was promoted with the commissioning of the Dawhenya Irrigation Project. Other irrigation projects were dotted within the Northern, Upper East and West Regions.

Between 1972 and 1974, the agricultural sector also gained a significant boost with the introduction of 'Operation Feed Yourself' (OFY) and 'Operation Feed Your Industries' (OFI) where individuals were encouraged to take up agricultural activities. 'Operation Feed Your Industries' was particularly important as it encouraged the supply of needed raw materials for industries. The OFY was marked with a state-controlled pricing regime where guaranteed minimum prices were set for major agricultural products such as cocoa, maize and rice with the specific purpose of stimulating production. In addition, government provided enhanced access to credit facilities coupled with duty-free importation of agricultural machinery (Owoo & Lambon-Quayefio, 2017). Broadly, these strategies embedded in the programme were to “make Ghana self-sufficient in food supply in order to break with the colonial past and correct the image of a beggar nation” (Lemmenmeier, 2011: 1).

The OFY programme was largely successful since agriculture's contribution to GDP was over 40%. In the first three years of OFY, Ghana, for the first time, officially became self-sufficient in rice production. Rice production rose from 11,000 tons in 1971 to 61,000 tons in 1973. At this point, rice was exported. In addition, production levels of all key food and industrial crops rose (Seini, 2007; Lemmenmeier, 2011). For example, maize production from 53,000 in 1971 to 430,000 tons in 1973 (see Reynolds, 2015).

The success of the OFY programme cannot be attributable merely to the active ownership and management of the state in the activities in the agricultural sector. The success was also rooted in the strong sense of inspiration and leadership drive by political actors who through widespread propaganda in newspapers, radio and television, urged Ghanaians to engage in agriculture and contribute to the country's food production. In Lemmenmeier's (2011) analysis, the uniqueness of the OFY compared with previous food programmes was found in its initial enthusiasm it created in the country where thousands of Ghanaians took part in clearing land or helping harvest crops.

In 1975, however, the success of the programme could not be sustained when the government was confronted with harsh international economic conditions in the orbit of global capitalism such as a drop in the export of cocoa, gold, timber, and diamonds compounded by the rise of oil prices, and local ecological conditions such as droughts and bush fires (Reynolds, 2015). Despite the role of the severe international conditions which exposed Ghana's economic fragility due to high dependency on primary commodities such as internal political conditions as political corruption as well as fiscal indiscipline (Addo, Korboe, Williams & Mensah, 2010) equally worked to derail the prospects of the programme. With all the international economic conditions and internal political conditions acting together, the government revenues, which amounted to 21 per cent of GDP in 1970, dropped to nine (9) per cent in 1976 (Aryeetey & Kanbur, 2005) thus, rendering the government unable to finance the OFY programme.

Towards the end of 1970s, small-scale development programmes were initiated to provide opportunities for small farmers. One such project was the World Bank Scheme

geared towards raising incomes of the rural small farmers of the Upper Regions of Ghana - the Upper Regional Agricultural Development Programme (URADEP). The period was also marked by special investments in commercial rice farming. Further, the commercial rice farming strategy succeeded by creating varied forms of employment opportunities to small farmers and their families. The irrigation projects benefitted tomato farmers in Navrongo and Bolgatanga enormously. However, it must be stressed that it benefitted the few urban-based bureaucrats, professionals, military men and the top stratum of rural people. Besides the entire agricultural sector was unable to significantly respond to the World Bank's regional agricultural plans on a sustained basis as output declined at a rate of 0.3 per cent per annum throughout the 1970s (Seini, 2007).

5.5 Agricultural Policies from the 1980s to 2002

The 1980s ushered Ghana into the era of neo-liberalism occasioned by the introduction of market-led policies in all sectors of the economy. It is an economic system which discourages centralised state planning of economic activities and encourages individual economic liberties by granting private economic actors 'decentralised power'. Discouraging state planning nevertheless, Hayek submits that government could play a role in the regulation of work and monetary policy as well as the transmission of information. This was the framework within which Ghana's agricultural policies in the 1980s were to be formulated and implemented.

Putting the economic policies of the 1980s in context, it was natural to observe agricultural sector being the target of policy intervention in the 1980s because it remained the largest sector of the economy. It might have needed such interventions since agriculture was going through enormous problems: the most notable were inadequate and untimely supply of inputs such as fertilizer, insecticides, cutlasses, etc.; inadequate research and extension services; a contracting cocoa industry; severe bottlenecks in transportation and storage of farm produce and inadequate producer price structure for major crops (Nyanteng & Dapaah, 1993). Animal production also suffered from erratic supply of animal feed and concentrates, while fish declined in supply in the domestic market due to shortage of marine engines and fishing gear. Agriculture's declining growth of 0.3 per cent per annum throughout the 1970s was worsened by severe drought and widespread fire damage in 1982 and 1983 which accounted for an output decline of over 6 per cent for each year with an equivalent fall in GDP (Seini, 2002).

To address these challenges in the sector, there were notable programmes including the Volta Regional Agricultural Development Programme (VORADEP), the Northern Regional Rural Integrated Project (NORRIP) and the Managed Inputs Delivery and Agricultural Services (MIDAS) which were all established in the early 1980s with the aim of increasing agricultural production, particularly of small-scale farmers by providing agricultural inputs and services on time and on regular basis (Seini, 2002).

The second phase of economic reforms emphasised increased productivity and internal price stability in the agricultural sector. At this time, state-led development policies continued through various regimes despite the neo-liberal rhetoric. As such, the government actively promoted cereal production in pursuit of food security objectives. For example, every year the government raised the guaranteed minimum price for maize and rice, which had been in operation since the late 1960s, and subsidies of essential farm inputs such as

fertilizers, machinery, and other agricultural chemicals continued, though on a reduced sale (Seini, 2002).

However, under the third phase of the adjustment process (liberalisation and growth phase), which started in 1989, the major goals included deregulation of commodity and service markets to reduce domestic price distortions, as well as liberalisation of export and import markets. The food and agricultural development strategy of the government was set out in the “Medium Term Agricultural Development Programme (MTADP)” (Seini, 2002).

As part of the liberalisation programme, the guaranteed minimum price for maize and rice were abolished and all subsidies removed, including subsidies for agricultural inputs, notably fertilizers and insecticides. Consequently, the average prices of most agricultural chemicals used in cereal productions increased in excess of 40 per cent per annum between 1986 and 1992 (Assuming-Brempong, 1994).

An analysis of the agricultural policies pursued in this period indicate that in spite of attempts to assist small-scale farmers in the early years of this era, they all tended to favour large scale capital intensive mode of production over small-scale production units and gave little consideration for industrialisation based on agricultural surpluses. Practically, agribusiness was given little attention in Ghana's political economy. These agricultural related programmes coupled with other neo-liberal economic decisions resulted in the deterioration and stagnation in the quality of lives of the majority of peasant farmers in Ghana (Asamoah, 2001). The effect on the agricultural sector's performance will be seen in the subsequent sections.

Shifting attention to the 1990s and the early years of 2000, Ghana's agricultural policy directives were still guided by strong neo-liberal orientations. At this point, the focus of agricultural development contained in the MTADP included the following listed without any order of importance:

- i. pursuing a strong domestic and foreign demand-driven production goals,
- ii. enhancing productivity partly to reduce underemployment in agricultural production activities,
- iii. improving production competitiveness which is currently limited to the farm gate,
- iv. promoting an effective linkage between agriculture and industry in order to ensure that they supply the inputs needed by each other,
- v. promoting agricultural growth based on regional comparative advantage and resource endowment,
- vi. enhancing food security by way of adequate, nutritionally balanced diets at affordable prices,
- vii. increasing the foreign exchange earnings base by diversifying into non-traditional export crops,
- viii. increasing the production of import substitutes,
- ix. ensuring sustainable growth and development,
- x. ensuring sound ecological management (environmental protection), and
- xi. Alleviating rural poverty.

To achieve these objectives, some strategies were outlined. The featured ones include the privatisation of the importation and sales of fertilizer, which hitherto had been under a government programme. The effects of the strategies were debilitating, just like the 1980s, since domestic prices of fertilizers doubled or tripled between 1990 and 1992. Moreover, the private sector response to the privatisation policy has been judged by Jebuni and Seini (1992) to be sluggish with negative distributional consequences. This period was also marked by the liberalised importation of commodities making imported rice, in particular, compete strongly with domestic rice. In all, the removal of guaranteed prices on agricultural products and subsidies on agricultural inputs did not just increase the costs of production in the sector the collapse of a number of agricultural industries due to their inability to compete on the international market (Owoo & Lambon-Quayefio, 2017).

Politically, the negative economic effect demonstrates a lack of consistency between the policy objectives and the strategies. The inconsistency was symptomatic of the fact that the MTADP was not a well thought out programme. It also begs the question whether or not political leadership learnt key lessons from the 1980 experiences. From political economy perspectives, the aftermaths of the neo-liberal agricultural policies demonstrate, to an extent, the other side of neo-liberalism riddled with low productivity and deteriorating living conditions which reflects some of the risks of neo-liberalism at the global levels. In addition, there have been some other fundamental aberrations to the character neo-liberalism as Ghana sought to apply it in the agricultural sector. First, even though the state was positioned to play a secondary economic role as part of neo-liberal policies the state still gained some considerable degree of control in the economy. This was done by introducing high direct and indirect taxation and the under-pricing of agricultural commodities for the benefit of the urban population and the concentration of infrastructure and social amenities in the large cities (Seini, 2002).

Second, the neo-liberal agricultural policy was narrowly crystallised in the pricing regime through the removal of subsidies and deregulation of prices of agricultural inputs. It is clear in the ideas of Hayek that the solution to the problem of abuse of power associated with central planning was decentralisation. This was to serve as a political trade-off between government and individual liberty. However, the agricultural policy lacked the decentralisation finesse. This was largely exemplified in the imposition of top-down government schemes and the unwillingness to transfer the administration of marketing, storage, input distribution and credit programme to the private sector. Fundamentally then, the agricultural policies in the 1980s did not really involve the peasant farmers in the neo-liberal strategies which occasioned the agricultural policies. Explaining the state's difficulty in involving the peasant farmers, it will be critical to note that the content of these policies were World Bank and IMF donor conditionalities which political leadership at the time had less control over.

Therefore, as instructed by the external donors to pursue a neo-liberal agricultural policy the then government had to deploy state control and a centralised decision making approach to implement the policy. In effect, the government's dependency on these external actors created for decisions which were not favourable to the peasant farmers and the country's agriculture sector in general. This gives a clue that when external actors are involved in neo-liberalism of a developing country it undermines the decentralisation component of neo-liberalism and the results may contradict the expectations as will be shown in subsequent sections.

5.5.1 2003 and beyond

The year 2003 is used as a benchmark because it was marked by the period when African leaders agreed on the Comprehensive African Agricultural Development Programme (CAADP) which enjoined all African leaders to allocate at least 10 per cent of their national expenditure to agriculture with an expected growth rate of 6 per cent. Key strategies developed to after 2003 included:

- i. Fertilizer Subsidy Programme – 2007
- ii. Agricultural Mechanisation Services Enterprises Centres Programme – 2007
- iii. Block Farming, as part of the youth employment programme – 2009

Moving further on to 2010 the Government of Ghana developed a new and comprehensive development programme known as the GSGDA with eight (8) broad policy objectives that are relevant to the MoFA. As a political economy approach, Ghana seemed to have moved from extreme ideological persuasions to a more pragmatic and realistic technique towards agricultural development. After years of experiencing the debilitating effects of over liberalisation of the agricultural sector, the state has been drawn into the sector but in a more strategic way. Thus, there are traces of state-market fusion where both government and private actor work in partnership to play active roles in the pursuit of agricultural development. Generally, these programmes were designed to achieve these objectives:

- i. Improve agricultural productivity
- ii. Increase agricultural competitiveness and enhance integration into domestic and international market
- iii. Reduce production and distribution risks/bottlenecks in agriculture and industry
- iv. Promote selected crop development for food security, export and industry
- v. Promote livestock and poultry development for food security and income
- vi. Promote fisheries development for food security and income
- vii. Improve institutional coordination for agriculture development
- viii. Promote the application of Science, Technology and Innovation in all sectors of the economy (see GoG, 2013)

Ghana's acknowledgement of the importance of the programme was translated into some producer-oriented efforts clearly expressed in the construction and rehabilitation of irrigation works. Consequently, the irrigated portion of the cultivated area has expanded from 7,500 ha in 1990 to 30,589 ha in 2013. Besides these, the area for cultivation expanded from 33.3 per cent of cultivatable area in 1990 to 57.6 per cent in 2010. The area of cultivation thus increased from 0.2 per cent of cultivatable area in 1990 to 1.04 per cent in 2013 (Nyanteng & Dapaah, 1993; NDPC, 2013). Other programmes organised in line with the policy objectives included:

2010 - National buffer stocks and minimum guaranteed prices for farmers

2011 - AGRA Loan Guarantee Programme

2011 - GAIP

2011 - Ghana Broiler Revitalisation Project

These programmes were interspersed with some trade-oriented programmes such as the National Export Development Programme and the Rice imports ban through borders in 2013 as well as the Ghana Export Trade Information Centre in 2015.

5.6 Strategies in Employment Creation in the Sectors

The agro-processing subsector shows great potential as a major contributor to in Ghana's quest for a fast-paced economy growth. Beyond its ability to promote economic growth, the agro-processing industry has the potential to generate and sustain employment. The recognition of the agro-processing sector's potential contributions to the economy of Ghana has translated into the mapping out of strategies which will enhance its productive and labour-absorptive capacity. The discussions which will contain an outlay of strategies, their respective objectives, action plans and targets will equally elucidate the strategies' potential to create employment in the fledging agro-processing sub-sector. Generally, the strategies, by content and action plans may be described as tax-related, finance (credit)-related, insurance-related, training and advisory-related and infrastructure-related. While some strategies may concentrate on a specific activity others may represent a complex and dynamic interplay of mixed action plans.

5.6.1 Tax-related incentives for agro-processing industries

Custom duty exemptions for agricultural and industrial plants, machinery imported for investment purposes. Companies that are listed enjoy corporate tax for the first three years. In an attempt to encourage agro-processing firms to use locally produced raw materials the current tax laws allow agro-processing enterprises that use local agricultural raw materials as the main input enjoy the following corporate tax rates based on their locations:

Table 2: Corporate tax rates for locations in Ghana

Location	Tax Rates
Accra-Tema	20 per cent
Other Regional Capitals	10 per cent
Outside Regional Capitals	0 per cent
3 Northern Regions	0 per cent

Source: GRA (2014)

In addition, foreign agro-processing businesses established in Ghana enjoy a five-year tax holiday from the date of commencement of business This is designed to suit different types of

agricultural activities, e.g. cash crops, tree crops, aquaculture, fish and livestock processing. In addition is a zero-rated tax regime for agro inputs, plant and machinery; exemptions of import duties on imported plant, machinery and equipment to be used in agro-processing industries, among others. This is a strategy aimed at attracting FDI. However, Ansah (2012) notes that this strategy generates incentive disparities between foreign investors and local investors and may not promote local investment for increased provision of employment. Ansah (2012) further argues that the use of incentives alone to promote investment is inadequate hence some strategic trade protectionist measures may have to be considered.

5.7 Projects and Institutions for Boosting the Agro-processing Subsector in Ghana

After year 2000, Ghana has been on the path toward boosting agro-processing sub-sector. This is evident in a number of projects and programme with varied activities. There are some credit schemes that may be relevant to food crops agro-processing firms to receive financial resources for their business operations. Various credit schemes have been established by the government such as the EDAIF, the Venture Capital Trust Funds (VCTF), Microfinance and Small Loans Centre (MASLOC) and other financial products and services, including GAIP.

There are some other financial products and services from private financial institutions such as banks (including rural banks), microfinance institutions, insurance and leasing companies.

5.7.1 Export Development and Agricultural Investment Funds (EDIF/EDIAF)

As part of the programme to improve upon the development of the export sector of the country, the government of Ghana established the Export and Development Fund in October 2000 under Act 582. This fund is predominantly meant to provide financial resources for the development and promotion of the export trade of Ghana. In order to expand the coverage of the fund to provide financial resources for the development and promotion of agro-processing in the country (EDIF, 2009) the EDIF Act was amended in October 2011 under Act 823 of Export Development and Agricultural Investment Fund (EDIAF). EDIAF has two main accounts (a credit facility account and the export development and promotion account) out of which over 50 per cent was used to support some agricultural activities like the cultivation and processing of mangoes, pineapples and shea nuts (EDIF, 2009; 2011). These activities include provision of credit guarantee through designated financial institutions to persons in agriculture and agro-processing sectors and appraisals and studies necessary to determine areas of the agriculture and agro-processing sectors that need intervention (EDIF, 2011).

To be eligible for the fund, applicants should be either in the public or private sector who are engaged in agriculture and agro-processing development activities and show proof of being financially under-resourced yet capable of promoting agriculture or agro-processing activities. In addition, cooperatives and associations engaged in agriculture can also apply. The following categories of actors in the agricultural sector qualify for support from EDIAF:

- i. Farmers of agricultural produce involved in agro-processing
- ii. Marketers of agriculture produce involved in agro-processing

- iii. Traders of locally processed agricultural produce for the domestic market and investors undertaking infrastructural projects to provide services for agriculture and agro-processing entities.

Among the current challenges with the fund include lack of awareness, under-utilisation of funds and the laxity in monitoring participating banks to ensure that they are lending to agro-processing firms at the approved rate (GBN, 2013).

5.7.2 Rural and Agricultural Finance Programme (RAFiP)

The RAFiP was an initiative by the International Fund for Agricultural Development (IFAD), the Government of Italy and the Government of Ghana implemented by the Ministry of Finance and Economic Planning. Together with rural microfinance institutions (MFIs) in Ghana, RAFiP aimed at enhancing institutional performance, public outreach and client orientation in rural Ghana (IFAD, 2017). This was aimed at providing improved access to financial services, technical assistance and risk management instruments to rural population, especially, smallholder farmers and micro entrepreneurs. RAFiP adopted innovative ways in enhancing livelihoods on a sustainable basis. RAFiP plays a facilitating role by linking vulnerable groups in rural Ghana, mainly, women and young people with rural finance institutions (IFAD, 2017).

The usefulness of this initiative to employment generation is that it strengthens agricultural value chains by introducing more actors such as marketers and haulage service providers. The initiative also provides smallholder farmers with an opportunity to maximise the productive potential of their lands through their deployment of more labour and technology.

5.7.3 Microfinance and Small Loans Centre (MASLOC)

The GoG established MASLOC in 2005 with the aim of reducing poverty, creating jobs and generating wealth. In achieving this purpose, MASLOC mainly administers micro and small-scale credit programs and to provide, manage and regulate approved funds (GoG and development partners) for microfinance and small scale credit, loan schemes and programs (MASLOC, 2010 as cited in Afful-Koomson et al., 2014). MASLOC provides micro-credit or group loans, small loans, wholesale lending to microfinance institutions, Ministries, Departments and Agencies and rural banks for on-lending to the productive poor engaged in economic activities such as food crop production, agro-processing, poultry, and micro-enterprise. MASLOC offers 12-month unsecured loans at a relatively low interest rate of 24% per annum (or 2% per month) (Acquah, 2012).

In 2012, the Government of Ghana voted GH¢ 35 million for MASLOC in the budget to enable it to continue to support the value chain processes through the provision of loans. Even though MASLOC aims at creating jobs it does not directly create jobs. However, it creates the opportunities for businesses to expand after which the beneficiaries may absorb more workers. For example, in 2016 MASLOC hired out 20 new vehicles and 965 tricycles (MoF, 2017)

Despite the increasing growth in the microfinance sector, the advancement of loans and credit to farmers remains a challenge (Tenaw & Islam, 2009). This is because they are

unable to make their returns on their credits. For example, in 2010, MASLOC was faced with the difficulty in recouping loans owing to an extremely high default rate (90%), symptomatic of the challenges (Norman, Darko, Whitley, Bawakyillenuo & Nyamedor, 2016). It is because the agricultural sector is characterised by generally much lower returns on capital, higher risks and less understanding of finance and business (Miller, 2011).

5.7.4 Venture Capital Trust Fund (VCTF)

The GoG established the VCTF by Parliament (Act 680) in 2004. Its main objective is to provide credit and equity financing to eligible venture capital finance companies. With the exception of businesses engaged in the importation of tradeable, the Fund invests in all sectors of the economy. The maximum funding limit of the fund is pegged at 15 per cent of its total capitalisation with US \$25,000 as the threshold.

The VCTF Act 680 defines an SME as a business whose total asset base, excluding land and building, does not exceed the cedi equivalent of US \$1 million (VCTF, 2013). Here, monies are made available to investee companies through intermediary institutions called Venture Capital Finance Companies (VCFC), which are tax-exempted (VCTF, 2013). Since its establishment, the VCTF has provided its seed funding of GH¢22.4 million to create additional GH¢610.2 million from the private sector in a Public-Private Partnership (Sackey, 2013). VCTF has a total of GH¢83 million to be invested in the SME sector.

The Trust Fund has established five venture capital funds and invested the Ghana cedi equivalent of US \$17 million. Since 2006, the Trust Fund, in collaboration with partners has committed GH¢3.7 million in commodity value chain activities including sorghum and soybean. An estimated 12,600 metric tons of sorghum (valued at GH¢7.4 million) have been produced out of which 6,600 metric tons (valued at GH¢4.6 million) have been sold to industries for import substitution. To date, an estimated 8000 smallholder farmer has been integrated into the global supply chain of local industries with ready-made market for their produce (Sackey, 2013).

Significant achievements have been made, which have positively impacted on farmers and the economy in general. As part of its contributions to employment, the VCTF has created 2,500 direct jobs and 4,500 indirect jobs (Business & Financial Times, 2013). An estimated 1,400 jobs have been created in the participating communities and farmer-based organizations (FBOs) (Sackey, 2013).

These employment benefits notwithstanding, the capacity of VCTF'S ability to generate employment is being stifled because disbursements of money from VCTF have been limited due to a lack of understanding of the loan process and barriers to meet minimum collateral requirements. Moreover, smallholder farmers also lack assets and guarantors (Norman et al., 2016). In addition is the high loan repayment default rate among the beneficiary SMEs. As at 2016, about 96 per cent of the over two hundred Small and Medium Enterprises (SMEs) the VCTF had assisted with credit facility for about four years earlier, were yet to repay the monies which had amounted to about 28 million cedis.²

² This was mentioned in an interview with the CEO OF Venture Capital Trust Fund by Pius Amihere Eduku of Citi FM, an Accra based radio station. <http://citifmonline.com/2016/06/02/over-200-smes-owe-28-million-cedis-venture-capital-fund-ceo>.

5.7.5 Ghana Agricultural Insurance Programme (GAIP)

The Ghana Agricultural Insurance Programme (GAIP) was launched in 2011 in the three northern regions (Nunoo & Acheampong, 2014). This led to the development of the first agricultural insurance for Ghana as a tool for mitigating the adverse effects of climate change. It is made up of 19 Ghanaian insurances and the Swiss Re-insurance. This partnership is to ensure a solid financial foundation (GAIP, 2012 as cited in Afful-Koomson et al., 2014).

The aim of GAIP is to protect farmers and other players in Ghana's agricultural industry from the negative economic effects of climate change. In May 2011, GAIP sold the first weather Index Insurance for maize to three financial institutions and one research organisation in the Northern part of Ghana covering more than 300 smallholder farmers. As at 2012, the project focused on drought insurance for maize, soya and sorghum and was expanded to the middle belt (Ashanti, Eastern and Brong Ahafo regions) (Nunoo & Acheampong, 2014). GAIP requires consistent flow of funds to make it very effective since it has largely been driven by donor funds with support from the National Insurance Commission and Ghana Insurers Association (Nunoo & Acheampong, 2014). This programme, according to Afful-Koomson et al. (2014), "is a very innovative risk management scheme that will offer food crops agro-processing firms some form of hedging against incidence of crop failure and shortage of raw materials" (p.156). It is worth noting that, GAIP is faced with a challenge of some firms using mainstream insurance products that are not tailored to their unique needs. Recognising this challenge, Nunoo and Acheampong (2014), recommend that the capacity of stakeholder institutions in the area of providing different set of data that are consistent and reliable are generated to build viable insurance products for stakeholders in the agriculture industry in the country. Further, Afful-Koomson et al. (2014), identify the narrow-scoped nature of the programme and thus suggests the need to have specialised risk management schemes to cover production equipment, property and life of food crops agro-processing firms.

Another policy which is aimed at driving agro-based industrial development in Ghana is the Food and Agriculture Sector Development Policy (FASDEP II). FASDEP II contained the long-term policy objectives of government in relation to the development of the agriculture sector, with the means of implementation outlined in Ghana's 2011-2015 METASIP document, which included several strategies and activities for the promotion of agro-processing in Ghana.

Training and Advisory Services

The Government of Ghana has recognised that Agro-processing can also to be promoted through the extension of support to individual and group initiatives aimed at adding value to major food staples. In this regard, the Government of Ghana has given priority maize (milling and packaging), rice (milling and packaging), cassava (gari, flour, etc.), yam (flour), cowpea (grading and packaging) etc. The support includes targeted training in value addition and linkages with relevant service providers and markets. Use of appropriate grades and standards will be emphasised to improve quality, improve market penetration and reduce post-harvest losses (Owoo & Lambon-Quayefio, 2017).

The Government of Ghana has also recognised that agro-processing can be promoted

by ensuring that the activities are carried out in an environmentally safe and sustainable manner. Thus all agro-processing interventions will be required to put in place environmental mitigation measures.

Government also seeks to achieve gender equity in all activities along the value chain by ensuring that the disadvantaged, especially women and youth play a major role in all activities (MoFA, 2010). These include the provision of at least one (private sector led) mechanisation centre established in each district by 2015 to provide diversified services to all types of farmers and agro-processors (small, medium and large)

Government has also introduced an incentive system for agro-processing firms to adopt food grade processing technologies to increase rural processing of cassava, oil palm, shea nuts cashew nuts soyabeans and groundnuts with the goal of increasing production levels across the crops by about 30 per cent, averagely (Owoo & Lambon-Quayefio, 2017).

These goals are to be achieved through a number of activities such as the identification of successful lead firms/agro-industries and apply viable model(s) of linkage with smallholders; the promotion of off-farm activities with particular focus to supporting establishment of agro processing Micro and Small Enterprises (MSEs), and targeting women and the youth; facilitation of credit facilities; carry out an assessment of quality of agro-processing technologies used in food processing; the development of standards for agro-processing equipment for various types of food products and enhancing the importation of appropriate agro-processing equipment; among others.

Some of the institutions which offer credit also perform some training and advisory roles. A case in point is MASLOC which also provides business advisory services, training and capacity building for small and medium scale enterprises (SMEs) and collaborates with other institutions to provide relevant SMEs with the required skills and knowledge in managing their businesses efficiently and effectively (MASLOC, 2010).

MoFA has recently launched the Ghana Agricultural Sector Investment Programme (GASIP), which will facilitate investment into the agricultural sector through provision of agricultural infrastructure, such as feeder roads and pack houses.

A perusal of the policies shows that they are all aimed at boosting the agro-processing sub-sector. These policies are not being operationalized to increase production in the sub-sector alone, but to generate employment in varied forms. Some have demonstrated the capacity to create direct jobs, whereas others have proved to generate direct and indirect jobs. Although various agricultural policies over time have included sections that focus on the development of the agro-processing industry in Ghana, Ghana may benefit from an integrated and strategic national plan that takes into account specific characteristics and challenges faced by small and medium scale firms in the informal sector of the country, who are largely engaged in agro-processing activities. Such a national policy plan may also facilitate important linkages between the agro-processing industry and other relevant sectors (Owoo & Lambon-Quayefio, 2017). What is also important to be considered is the need to harmonise these policies through institutional collaboration. This is to be coupled with the creation of an apex institution which will coordinate all the policies. This is to avoid overlapping and duplication of responsibilities of the institutions responsible for the implementation of the policies.

SECTION 6: SITUATIONAL ANALYSIS ON EMPLOYMENT CREATION IN THE AGRICULTURE AND AGRO-PROCESSING SECTORS

6.1 Introduction

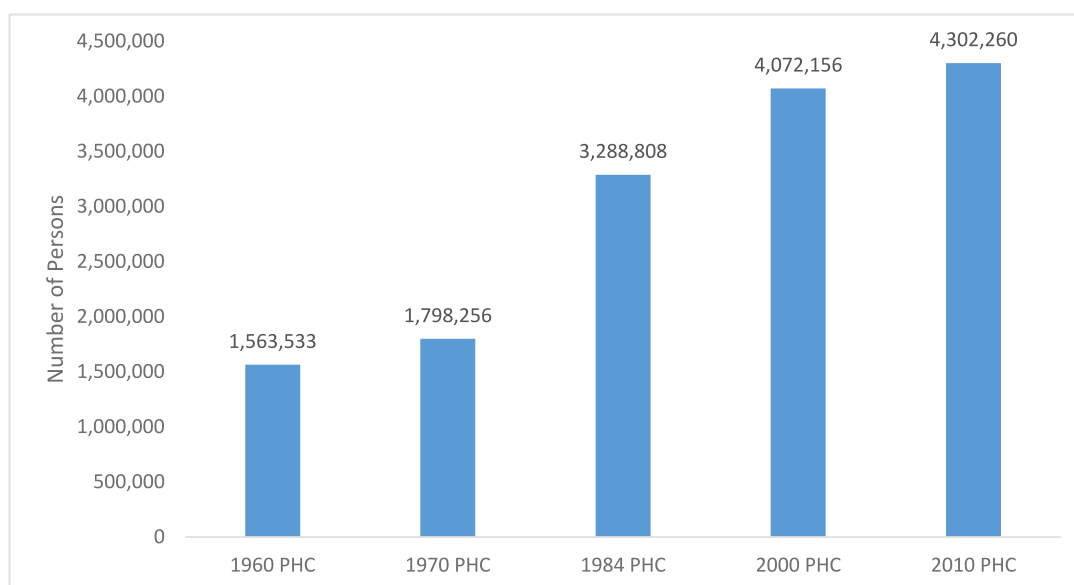
The section discusses the employment generation capacity in the agriculture and agro-processing sectors. This situational analysis is gleaned from various databases in the country. These include comes from the PHC, GLSS, and the IBES.

6.2 State of Employment in the Agriculture and Agro-processing

Employment creation in the agricultural and agro-processing sector comes with enormous dynamics which may have some political, economic and legal implications. Analysis of the state of employments in these sectors would offer a platform for interrogating past and current policies. In addition, the analysis would further provide deeper insight about how effective or otherwise the policies formulated in these sectors have been.

6.2.1 Socio-demographic dimension of employment in agricultural sector

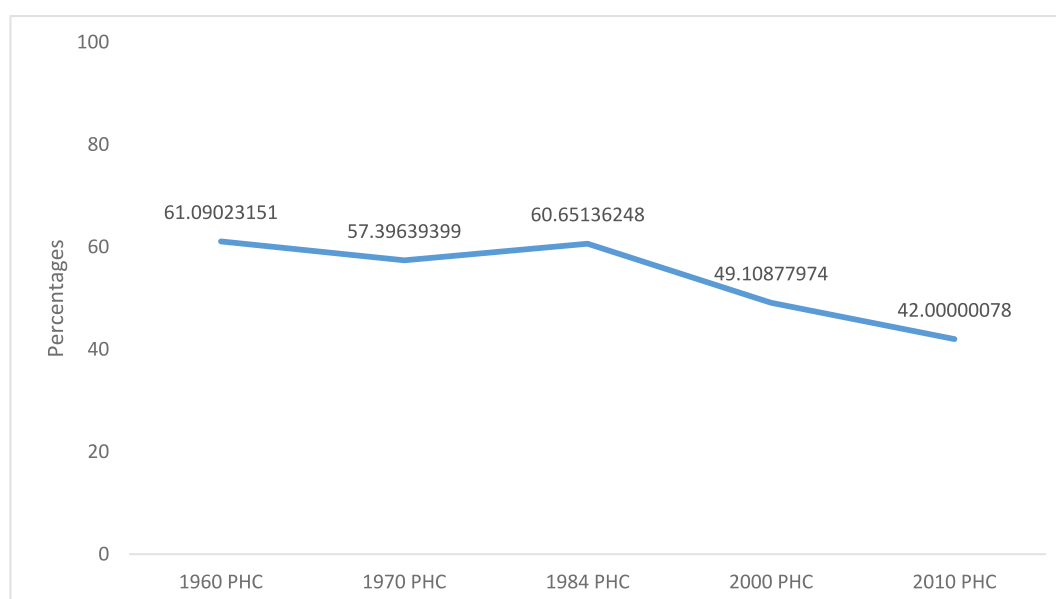
Figure 2: Number of persons employed in the agricultural sector



Source: GSS 2005, 2012

The PHC shows an increasing trend in the number of persons employed in agriculture and agro-processing sectors. From Figure 2 employment in the agriculture and agro-processing sectors in absolute terms has increased from 1,563,533 in the 1960 PHC to 4,302,260 in the 2010 PHC. The biggest increase is observed between 1970 and 1984 PHC. The number of persons employed in agriculture and agro-processing sectors saw a slight increase in the 2000 to 2010 PHC. This is an increase of about 230,104 persons.

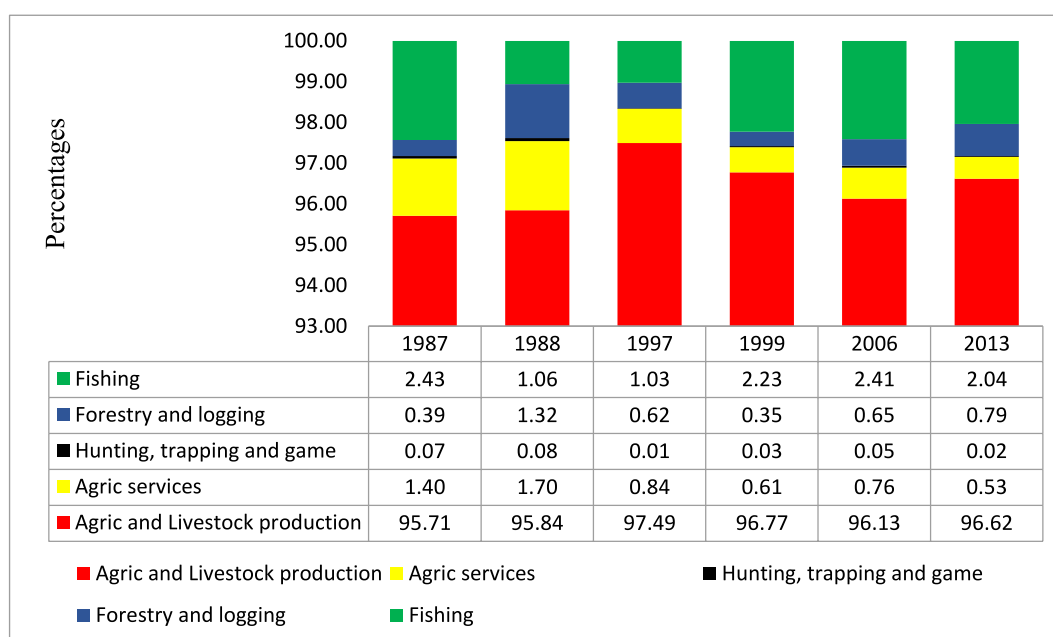
Figure 3: Rate of employment in the agricultural sector



Source: GSS 2005, 2012

Even though in absolute term, the numbers employed in agriculture and agro-processing sectors has seen an increase, the total share of agriculture and agro-processing sectors as a proportion of the total active labour force is declining. As shown in Figure 3, in 1960 agriculture and agro-processing sectors contributed about 61 per cent of employment in the country but as at 2010 this figure had dropped to about 42 per cent of the total labour force. This trend can be attributed to the sharp decline of agriculture and agro-processing sectors contribution to GDP and the fact that majority of Ghanaian are now found in the urban areas as opposed to rural areas.

Figure 4: Distribution of employment in the sub-sectors of agricultural sector



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

Analyses of the GLSS (1-6) data indicates that majority of the working force are engage in agriculture despite the declining contribution to Gross Domestic Products. More than half of the total population in Ghana is employed in the agricultural sector (TUC). From the GLSS 1, about 68 per cent were recorded being employed in the agriculture sector. The estimates in the GLSS 2, GLSS 3, GLSS 4, and GLSS 5 were not significant different from the base survey. They recorded about 64 per cent, 68 per cent, 60 per cent and 60 per cent respectively. There was a slight drop in the GLSS 6 which reported about 58 per cent of the population engage in agriculture. The agriculture sector was sub divided into five (5) categories; Agriculture and livestock production; agricultural services, Hunting, trapping and game; Forestry and logging; and Fishing. Within the agriculture sector, Agriculture and livestock production was the main sub-sector with most people employed. The GLSS 1 through to 6 all estimated an average of about 96 per cent of population in agriculture and livestock production, about two (2) per cent in Fishing and about 1 per cent in the agriculture services, hunting, trapping and game; Forestry and logging.

Table 3: Gender distribution of person 15 years and above employment in agricultural sector

Activity	1987		1988		1992		1999		2006		2013	
	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES
Agric and Livestock prod	92.23	98.51	92.66	98.11	94.30	99.61	93.97	99.49	94.18	98.03	94.57	98.45
Agric services	2.59	0.85	3.49	0.52	1.79	0.25	1.12	0.19	1.00	0.61	0.64	0.46
Hunting, trapping and game	0.16	0.00	0.09	0.00	0.00	0.03	0.00	0.07	0.10	0.00	0.03	0.03
Forestry and logging	0.81	0.17	1.52	1.32	1.57	0.03	0.66	0.10	0.90	0.52	0.77	0.83
Fishing	4.21	0.47	2.24	0.05	2.35	0.08	4.24	0.15	3.81	0.85	4.00	0.24
AGRIC AS % OF TOTAL EMPLOYMENT	66.52	61.64	63.21	58.41	68.49	59.39	64.13	54.97	62.13	54.17	58.38	49.40

Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

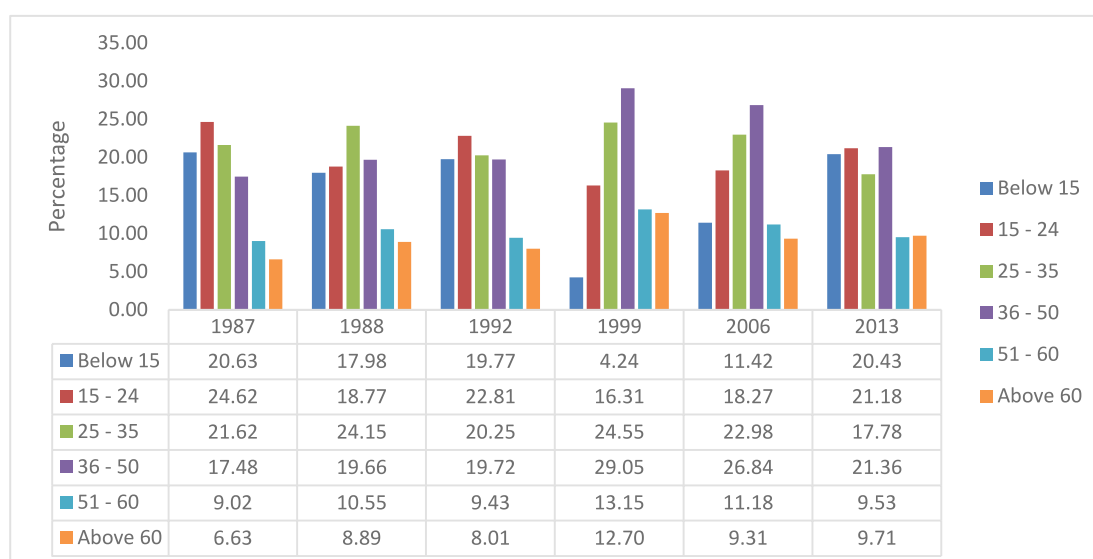
Table 3 reports on the workforce aged 15 years and above as well as gender distribution across the agriculture sub-sectors. Out of the 2,798 employed males sampled in 1987, about 67 per cent were in the agriculture sector, while out of the 2,866 employed females sampled in the same survey, 62 per cent were in the agriculture sector. Given the numbers engaged in the sector, the agriculture and livestock sub-sector employed 92 per cent and 99 per cent of males and females, respectively.

In 1988, 63 per cent males and 58 per cent females were estimated to be engaged in the agriculture sector. In that same year, the number of people (93% of agriculture sector workers) engaged in the agriculture and livestock sub-sector was about thirty times more among the males and about 98 per cent more among females than the number in the other sub-sectors.

In 1992, an average of 94 per cent males and 99.61 per cent females were employed in the agriculture and livestock production sub-sector with the other sub-sectors recording below 2 per cent. In 1999, agriculture and livestock sub-sector still ranked top with an average of 94 per cent males and 100 per cent females compared to other sub-sectors averaging below 4 per cent. The trend was followed in 2006 with males and females recording about 94 per cent and 98 per cent respectively, for the food and livestock production sub-sector. In 2013, the trend did not change significantly. The males and females working in the agriculture and livestock sub-sector remained very high with about 95 and 98 per cent, respectively. It can be observed from the table that there were more females in the agriculture and livestock sub-sector than males by 5 percentage points.

The fishing sub-sector was, however, male dominated. With regard to the employment trends in the sub-sector, there was a decline from 4.21 per cent in 1987 to 4.00 per cent in 2013 among the males, albeit inching a bit higher to 4.24 in 1999. The trend was not different among the females as the figure dropped from 0.47 per cent in 1987 to 0.24 per cent 2013.

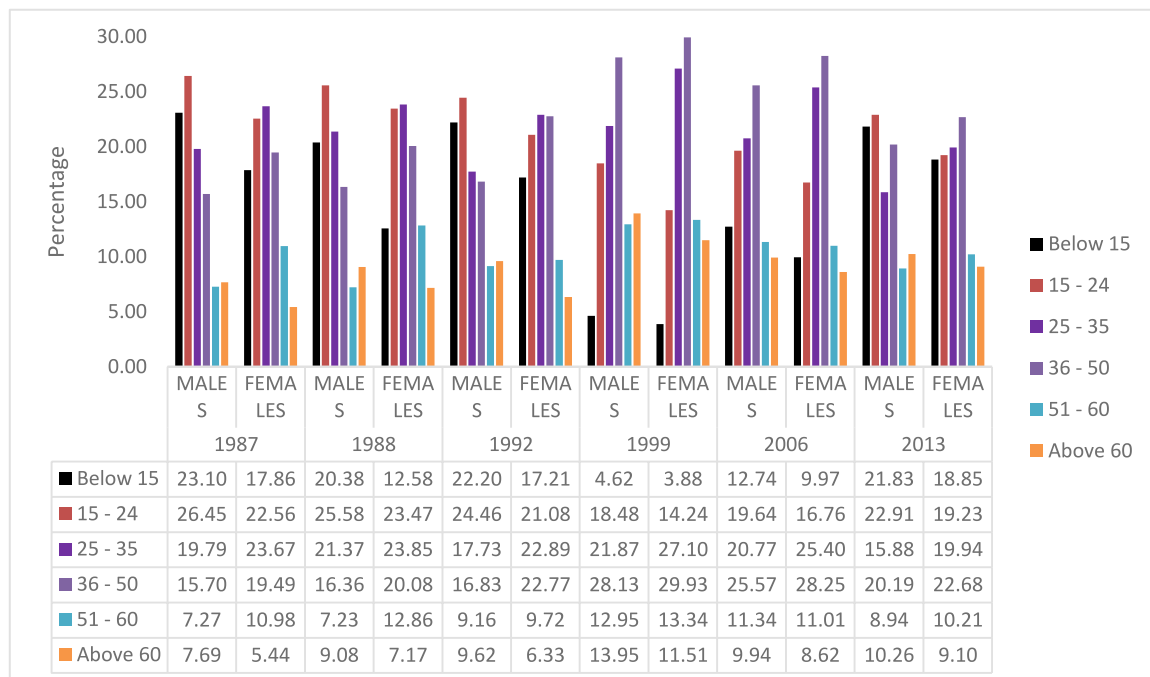
Figure 5: Distribution of jobs created by age groups across years



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

Figure 5 shows the age distribution of agricultural sector employees. There is an increasing trend of jobs created from 1987 through to 2013 at all levels of age groups. In 1987, Ghanaians aged between 15 and 24 years constituted the highest employment, followed by age group 25-35 years. The trend was overturned in 1988 with age group 25-35 constituting the highest level of employment, followed by age group 36-50. Age group 15-24 constituted the highest employment, followed by 25-35 years in 1992. From 1999 to 2013, age group 36-50 years had most of the Ghanaian population engaged in the agriculture sector. Child work remained high in 2013, whilst the percentage of agricultural workers in the age group 60 years and above remained averagely low.

Figure 6: Distribution of jobs created by age groups and sex across years



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

The distribution among the age categories was also analysed across both males and females engaged in the agricultural sector. From Figure 6, males aged 15-24 years constituted the category with the highest employment in the agricultural sector for all the periods except 1999. By 2013, the trend was overturned with age group 15-24 years being highest level of male employment. The trend among females has also been fluctuating across the age groups in different years. For example, females aged 25-35 years constituted the highest level of employment until 1999 when the highest employed category changed to age group 36-50 years. This trend continued to 2013 hence, on the average, it can be concluded that females aged 36- 50 years have the highest employment in the agricultural sector. Child work was higher among males for all the years.

Table 4: Occupations in Ghana's agricultural sector

OCCUPATION	1987 %	1988 %	1997 %	1999 %	2006 %	2013 %	1987–2013 Avg. %
Farmers	95.01	94.68	96.36	94.27	49.22	86.81	83.45
Fishermen, hunters and related workers	2.32	1.11	1.01	2.20	38.90	2.13	8.56
Mixed crop and animal producers	0.00	0.00	0.00	0.00	0.00	7.84	3.23
Agricultural and animal husbandry workers	0.68	1.06	0.71	1.47	7.97	0.00	1.84
Agric. Labourers	0.00	0.00	0.00	0.00	2.57	1.54	1.10
Forestry workers	0.09	0.71	0.09	0.14	0.33	0.32	0.28
Livestock and dairy producers	0.00	0.00	0.00	0.00	0.00	0.54	0.22
Poultry producers	0.00	0.00	0.00	0.00	0.00	0.13	0.05
Farm managers and supervisors	0.04	0.03	0.03	0.08	0.00	0.02	0.03
Life scientist and related technicians	0.02	0.00	0.01	0.00	0.00	0.04	0.02
Agric. and mobile plant operators	0.00	0.00	0.00	0.00	0.03	0.03	0.02
Medical, dental, veterinary and related workers	0.02	0.00	0.03	0.02	0.00	0.00	0.01
Farmer, forestry and fisheries adviser	0.00	0.00	0.00	0.00	0.00	0.02	0.01
Machinery mechanics and fitters	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Other professions	1.82	2.41	1.75	1.83	0.98	0.57	1.19
Total	100	100	100	100	100	100	100.00

Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

The agricultural sector has experienced some amount of occupational diversity but not very high. Out of the many skills in the set of the agricultural sector, mixed farmers were made up 7.84 per cent. Farming still absorbs a significant majority of workers in the agricultural sector. The poultry production sub-sector has not been able to attract much labour since 1987. This is because the poultry production sub-sector has suffered stiff competition in the wake of the increasing levels of imported poultry products. This is attributable to the policy of trade liberalisation in the 1980s as part of Ghana's pursuit of the neo-liberal agenda. As at 2013, the poultry industry contains only 0.13 per cent of the total number of agricultural workers. Another notable observation is the apparently low number of agricultural technical advisers which signifies lack of attention to agricultural service training in the country. The lower numbers recorded among the technical service providers may adversely affect farm work efficiency and reduce optimum farm yield.

6.2.2. The Concept of Decent Work

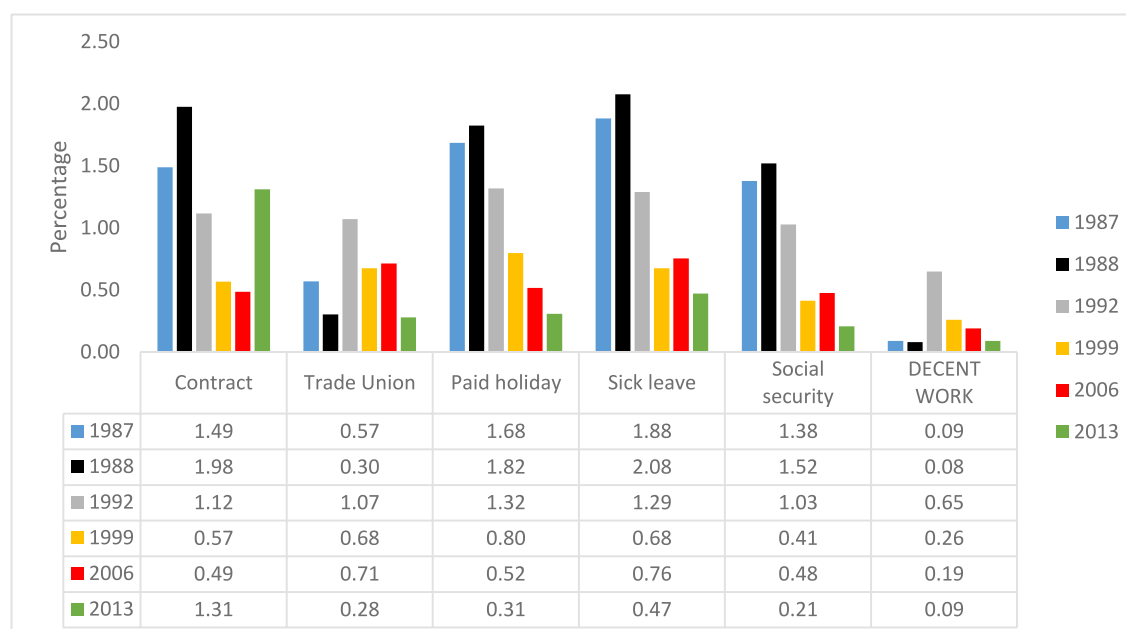
According to the International Labour Organisation (ILO), work is considered decent, if it meets four strategic pillars namely; full and productive employment, rights at work, social protection and the promotion of social dialogue. Based on these four pillars, the researchers delved into the GLSS data to identify the indicators that will enable the creation of a decent work index. Even though, the indicators identified in the dataset did not adequately capture all the four pillars of decent work, they were very close to such a definition.

Thus, in this report, work was considered to be decent if it met all the five criteria listed below:

- i. Working with a binding contract
- ii. Affiliation with trade unions
- iii. Having a paid work
- iv. Having a sick leave
- v. Having social security

The study based the computation of decent work on the premise that an individual employee within the agriculture and agro-processing sector had to satisfy all five indicators of decent work as defined above. Using the additive method, an index for decent work was created. Employees who scored in all five indicators were classified as having decent work.

Figure 7: Decent work in agricultural sector



Source: Authors' computations from GLSS 1, 2, 3, 4, 5 & 6

In calculating decent work in Ghana, we resorted to creating an index of the five indicators. The index ranged from 0 – 5, with five being the highest. Workers who had all five were described as enjoying decent work.

From Figure 7, it is indicated that 1.49 per cent of the workers in the agricultural sector worked with binding contract in 1987. It increased to 1.98 per cent but reduced to 1.12, 0.57 per cent and 0.49 per cent. Figures from the last GLSS survey suggest that only 1.31 per cent of workers working in the agricultural sector are working with a binding contract. Similar situations of worsening features can be said about the other indicators. The number of workers with affiliation to trade unions dropped from 0.57 per cent to 0.28 per cent. Those with sick leave dropped marginally from 1.88 per cent to 0.47 per cent. Workers with social security also dropped 1.38 per cent to 0.21 per cent. Overall, the number of workers with decent work has remained stable with inter-survey fluctuations between 1987 and 2013. This indicates that there is barely no decent work in the agricultural sector, since 99.91 per cent of the workers are without decent work. From the 2013 figure, it can be approximated from the data that only 1 out of every 300 workers in the agricultural sector had a decent work.

The results are not surprising due mainly to the informality in the agricultural sector in Ghana. Many who are engaged in agriculture are either self-employed or subsistence agriculture where most of the five indicators for measuring decent work are not given much premium. Contracts, social security and paid holidays are mostly the least of the concerns of persons engaged in agriculture.

Table 5: Distribution of employment by region and sex across years

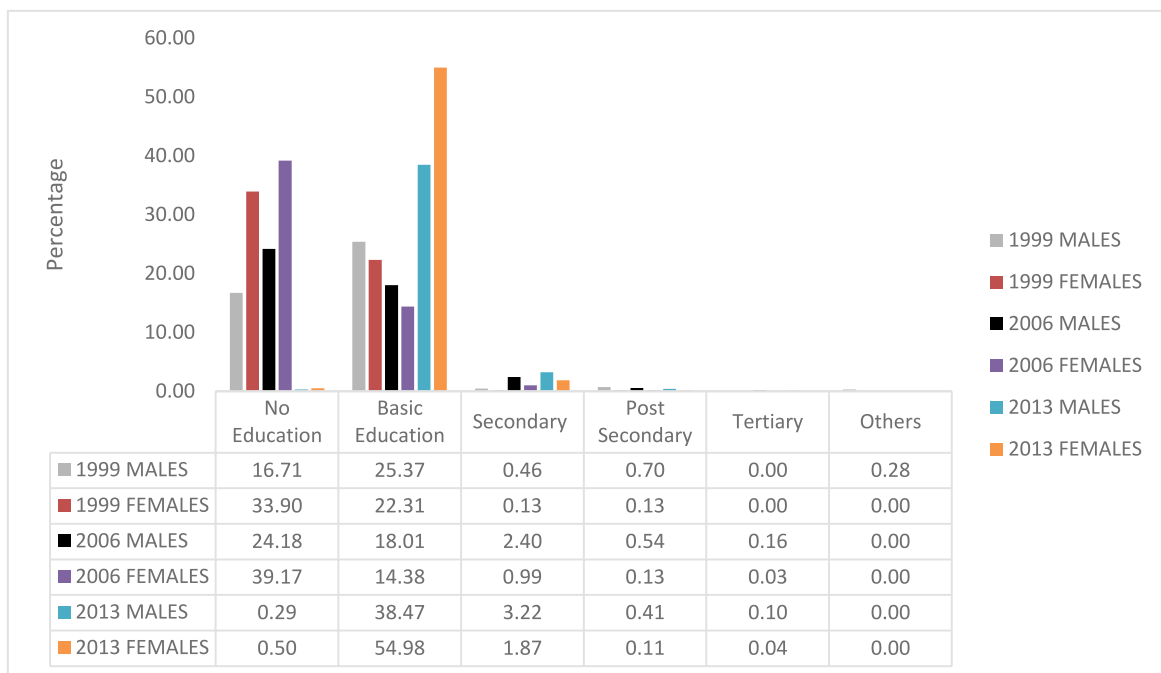
REGION	1997						2006						2013					
	URBAN			RURAL			URBAN			RURAL			URBAN			RURAL		
	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL
Western	4.38	2.83	7.21	10.36	9.95	20.31	9.94	10.05	20.00	7.62	7.24	14.86	7.76	5.40	13.16	8.46	7.62	16.08
Central	13.87	13.60	27.47	9.60	11.06	20.66	8.26	5.39	13.65	5.24	6.00	11.24	9.22	8.65	17.87	5.81	6.75	12.56
Greater Accra	5.84	1.70	7.54	1.52	0.94	2.46	2.81	0.74	3.55	1.57	1.31	2.88	1.40	0.42	1.82	0.97	0.75	1.72
Volta	15.57	23.23	38.80	15.23	12.67	27.90	7.32	4.66	11.98	9.61	9.05	18.66	6.87	5.40	12.27	9.10	9.41	18.51
Eastern	16.79	11.61	28.40	15.01	12.94	27.95	17.64	15.69	33.33	10.38	7.79	18.17	16.34	14.96	31.30	10.01	8.64	18.65
Ashanti	16.55	19.26	35.81	13.97	18.15	32.12	14.82	15.44	30.26	11.62	14.05	25.67	7.82	8.65	16.47	7.14	7.84	14.98
Brong Ahafo	8.27	11.90	20.17	8.95	9.65	18.60	17.26	28.92	46.18	8.92	10.10	19.02	19.26	26.52	45.78	11.19	11.11	22.30
Northern	15.33	14.45	29.78	11.04	10.32	21.36	15.76	13.24	29.00	18.36	16.81	35.17	15.83	11.31	27.14	17.28	17.60	34.88
Upper East	2.43	1.13	3.56	4.58	4.50	9.08	5.44	5.64	11.08	11.55	11.31	22.86	11.95	15.13	27.08	11.65	12.36	24.01
Upper West	0.97	0.28	1.25	9.74	9.82	19.56	0.75	0.25	1.00	15.13	16.34	31.47	3.56	3.57	7.13	18.37	17.93	36.30
Total	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00

Source: Authors' own computations from GLSS 4, 5 & 6

The regional dynamics in employment favours the three northern regions in Ghana. From the Table 5, with the exception of 1999 where Ashanti region had the highest share of persons engaged in agriculture in Ghana, followed by Volta and Eastern, all the other years has Northern region followed by Upper West. The Greater Accra region has in all the years had the lowest share of the labour force in agriculture. The region has a much higher share of employment even in the urban areas more that the rural area. This could be due to the fact most of rural areas in the region is found along the coast where less agricultural activities take place. Interestingly, the share employment in agriculture of all the other regions has being declining slightly with the exception of Upper East and West that has increased overtime.

The gender dimensions of employment in agriculture in Ghana are mixed. From the Table 5, the various rounds of the GLSS suggest that in the Central region, females in the rural areas have consistently been more than their male counterparts. In the Ashanti and Brong Ahafo regions, the various rounds of the survey shows that females engaged in agriculture are more than males both in the rural and urban areas. The Brong Ahafo region is the region with the highest proportion of females engaged in agriculture in the country. The Northern region in 2013 had the highest share of females in agriculture.

Figure 8: Education by sex

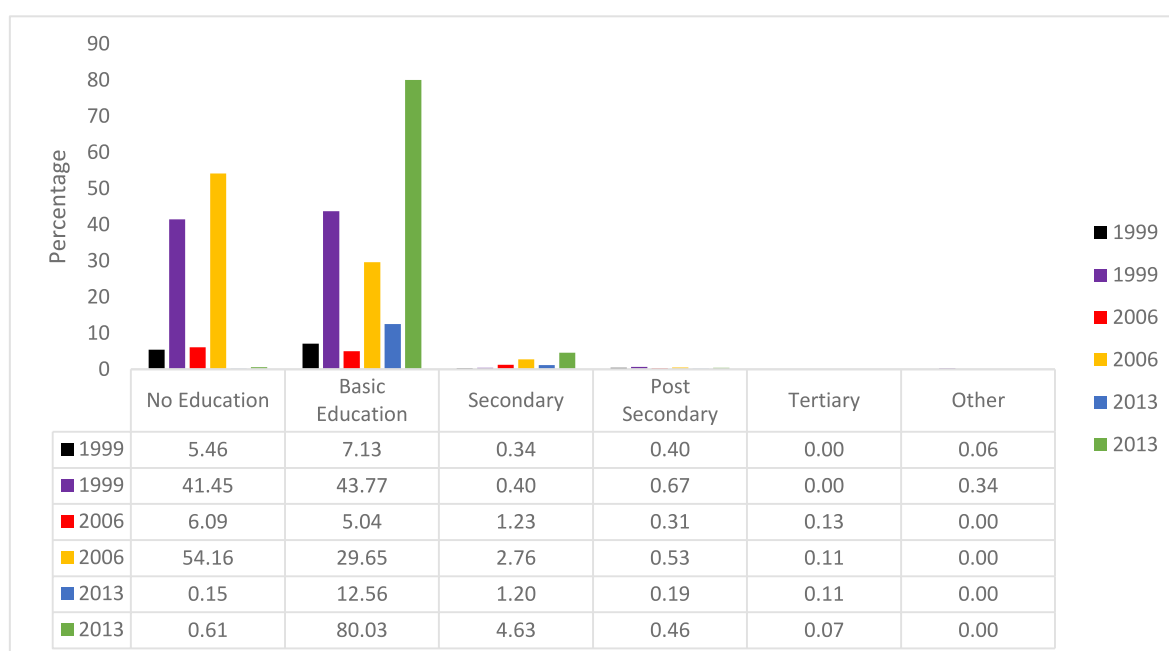


Source: Authors' own computations from GLSS 4, 5 & 6

From 1999 to 2006, the percentage of workers in the agricultural sector without education increased and reduced in 2013. Generally, however, the percentage of agricultural workers with some level of education has been increasing. Invariably, there had been an increase in the percentage of formal education recipients engaged in agriculture as at 2013. Specifically, however, the percentage of actor in the agricultural sector with post secondary certificate has been reducing. But the general picture still holds that the interest in agriculture among the educated experienced a gradual increase within the period under consideration. Figure 8 also suggests that there is a disparity between the number of males and the number

of females working in the agricultural sector at all levels of education. This has been consistent in all the years within which data were captured. This disparity among the sexes widens with the level of education of the agricultural workers. The increasing trend in education in the agricultural sector has implication for productivity and growth. For example, production figures for the major staples (rice, cassava and yam) saw a steady rise from the years 2008 to 2015 whiles, maize, sorghum and soybean oscillated over the same period. This can be attributable to efforts made by the government and its partners in increasing yield and area under cultivation by smallholder and commercial farmers. This increase in yields resulted from the adoption of improved technologies such as high yielding, disease resistant and drought tolerant varieties of planting materials, and improved harvesting techniques which is correlated to education in Ghana (MoFA, 2016).

Figure 9: Educational levels of persons engaged in agriculture by location



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

In terms of education, Figure 9 shows that the level of education of persons engaged in agriculture is steadily increasing. The percentage of persons with no level of education both in the rural and urban areas has seen a considerable reduction from 41.45 and 5.46 per cent respectively to 0.61 and 0.15 per cent from 1999 to 2013. Interestingly, Figure 9 shows that whilst the percentage of those with no education was declining, that of those enrolled in basic education experienced an increase largely over the same period. While from the GLSS survey, no person with tertiary education was engaged in agriculture in 1999, in 2013 there were 0.07 and 0.11 per cent engaged in agriculture in the rural and urban areas, respectively. Similar trends were also observed with those who had secondary and post-secondary education.

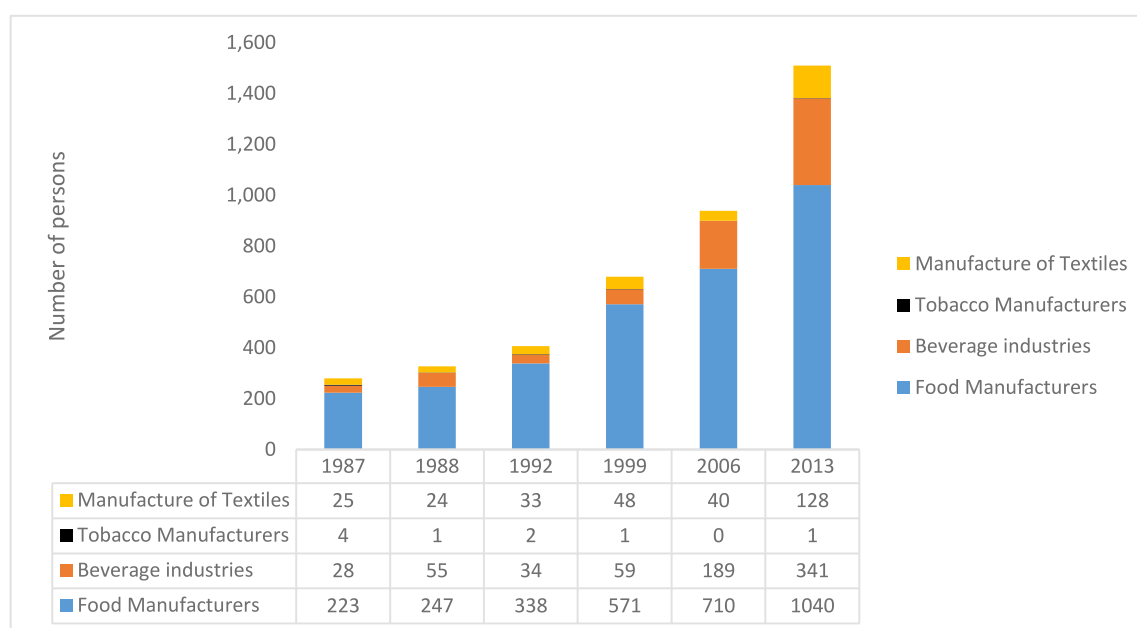
The increasing trend in education levels in the rural areas is very good for productivity growth. This is because agriculture has a rural face. With increasing numbers having more

education, farmers would be more inclined to accept fertilizer use, make use of weedicides and adopt improved technologies.

6.2.3 Socio-demographic dimensions of employment in agro-processing sector

Agro-processing is expected to expand markets for agriculture products, increase value addition for farm produce and create employment in both agriculture and industry (Dorosh & Thurlow, 2015). However, employment in agro-processing sector is far below the said objectives.

Figure 10: Persons engaged in agro-processing by sector



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

GLSS 1 shows that out of the total jobs created only 4 per cent were employed in the agro-processing sector. This estimate was increased to about 5 per cent in the GLSS 2, dropped to about 4 per cent in GLSS 3 and about 6 per cent in both GLSS 4 and 5, however, dropped to 4 per cent in GLSS 6. The sub categories under agro-processing sector indicate food manufacturers as the major sector creating employment. In 1987, about 80 per cent of population engage in agro-processing were food manufacturers, this was followed by about 10 per cent in beverage manufacturing, 9 per cent in textiles manufacturing and 1 per cent in tobacco manufacturing. In 1988, food manufacturers recorded close to 80 per cent, beverage production about 17 per cent, textiles about 7 per cent and tobacco processing about 0.3 per cent. By 1997, food manufacturers increased marginally by 3 per cent with a total of 83 per cent, beverage industries totalled 8 per cent, textiles manufacturing about 8 per cent and 0.5 per cent employed in the tobacco industries. In 1999, the food manufacturing sub-sector recorded about 84 per cent of the total workforce employed in agro-processing, beverage 9 per cent, textiles 6 per cent and about 0.2 per cent in tobacco manufacturers. In 2006, food manufacturing sub-sector drop to about 76 per cent, with beverage industries improving significantly to about 20 per cent, textiles dropped to about 4 per cent and tobacco productions zero. As at 2013, food manufacturing sub-sector has dropped to about 69 per cent, beverage industries increased to about 20 per cent, textiles manufacturing increased to about 8 per cent and tobacco productions about 0.1 per cent.

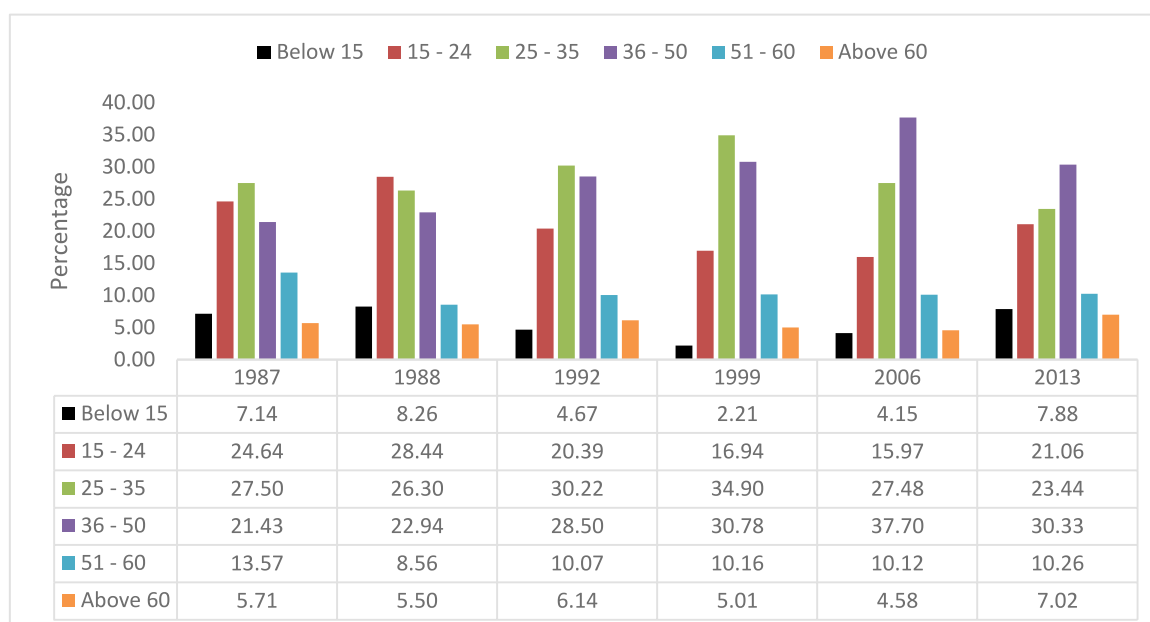
Table 6: Gender distribution of persons above 15 years employment in agro-processing sector

Activity	1987		1988		1992		1999		2006		2013	
	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES
Food Manufacturers	27.50	93.58	31.91	87.25	15.56	97.10	45.45	91.02	50.45	82.65	56.50	71.96
Beverage industries	32.50	4.53	38.30	11.76	35.56	2.42	21.21	6.35	31.53	15.99	24.00	22.39
Tobacco Manufacturers	5.00	0.38	2.13	0.00	2.22	0.24	1.52	0.00	0.00	0.00	0.50	0.00
Manufacture of Textiles	35.00	1.51	27.66	0.98	46.67	0.24	31.82	2.62	18.02	1.36	19.00	5.65
TOTAL FOR AGRO-PROC	2.15	6.96	2.66	8.43	1.72	6.79	2.16	9.65	2.39	9.56	1.95	6.38

Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

Table 6 shows that more women compared to men are engaged in the agro-processing sector and most importantly in the food manufacturers sub-sector. In the beverage industries, males recorded high percentages compared to females. The food manufacturing sub-sector estimated female employment as about three times more (93.58 per cent) compared to males (27.50 per cent) in 1987. In 1988, females constituted about 87.25 per cent and 11.76 per cent in food manufacturing and beverage industries, respectively. Meanwhile males scored about 31.91 per cent and 38.30 per cent for food manufacturing and beverage industries, respectively. By 1999, males' involvement in food manufacturing increased to about 45.5 per cent, while the percentage of females drop to about 91.02 per cent. Males employed in food manufacturing increased in 2006 to about 50.45 per cent, while the percentage of females dropped again to about 82.65 per cent. By 2013, males' employment in agro-processing food-manufacturing subsector has reached 56.50 per cent and females drop significantly to about 71.96 per cent. By implication, the rate of involvement of males in the food manufacturing industry has more than doubled. The table also shows that males scored high percentage for textiles. Nevertheless, their rate of involvement took a nosedive as it dropped from 35 per cent in 1987 to 19 per cent in 2013, while the rate of female involvement increased from 1.51 per cent in 1987 to 5.65 per cent in 2013. Despite the increase in the percentage of females in the textile manufacturing industry, figures on the table clearly show that the percentage of textile manufacturers has reduced from 36.51 per cent in 1987 to 24.65 in 2013. This is largely attributable to trade liberalisation which allows the influx of foreign textile into Ghana making local textiles uncompetitive.

Figure 11: Distribution of jobs created by age groups across years

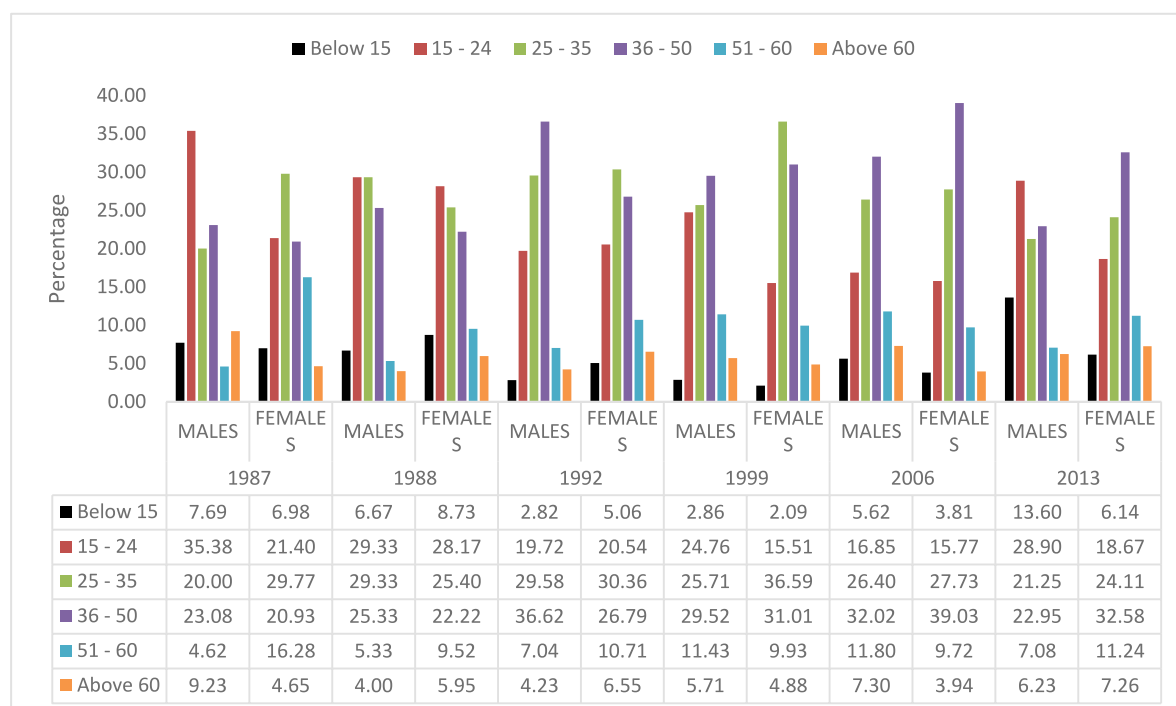


Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

Figure 11 presents the age distribution of employees in the agro-processing sector. Among the various age groups, age 36-50 years constituted the highest level of employment followed by age group 25-35 years in 2013. This trend fluctuates across various age groups. For example, in 1987, workers aged 25-35 years had the highest level of employment followed by age group 15-24 years. In 1988, age group 15-24 had the highest level of

employment in agro-processing followed by workers aged 25-35 years. This trend changed in 1992 and 1999 with the highest employment in agro-processing sector found in the 25 to 35 age group. By 2006, age group 36-50 years became the highest category employed in agro-processing and this remained so in 2013. Though child work was low in the entire periods was still significant in 2013 above the aged group (Above 60).

Figure 12: Distribution of jobs created by age groups and sex across years



Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

The agro-processing sector is mostly dominated by women and this is due to the non-formal skills employed in the sector. Figure 12 shows an increasing trend for both male and female workers from 1987 to 2013 on the average. Females employed in agro-processing aged group 25-35 years was highest in 1987, however, age group 15-24 years became highest in 1988. Females in the age group 25-35 was highest in 1997 and 1999 and 36-50 was recorded highest in 2006 and 2013. Male involvement in agro-processing is rising though far below women. The age group fluctuates across the years among males. The highest age group employed in agro-processing was 15-24 in 1987, was overturn in 1997 and age group 36-50 emerge highest in 2006. As at 2013, age group 15-24 was the highest category with most men employed in the agro-processing sector. Child work in agro-processing was also low though significant and mostly was female children.

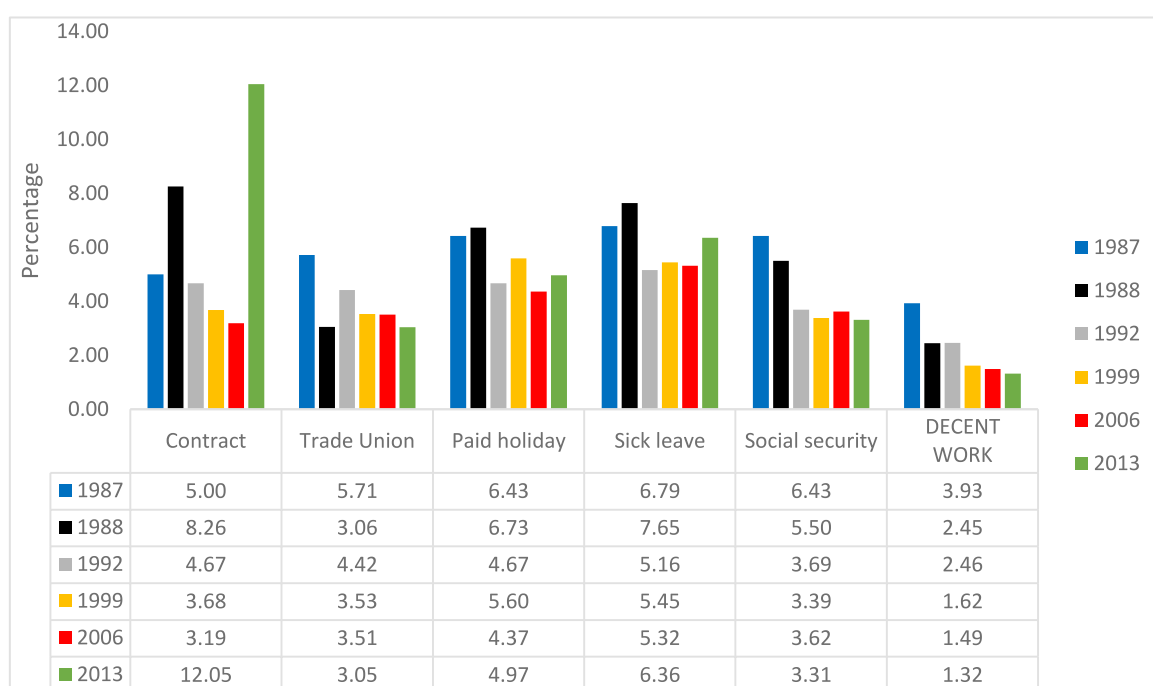
Table 7: Persons engaged in agro-processing by skill set

	1987	1988	1997	1999	2006	2013	1987 – 2013
SKILL SET	%	%	%	%	%	%	Avg. %
Food and beverage processors	80.36	83.79	84.03	72.46	76.89	42.32	65.04
Spinners, weavers, knitter, dyers and related workers	6.07	5.81	6.39	3.39	0.00	7.22	4.68
Butchers, fishmongers and related food	0.00	0.00	0.00	0.00	0.00	9.87	3.60
Machine Tool operators and machinery fitters	1.43	0.00	0.98	0.00	2.77	4.70	2.54
Production workers	1.07	0.31	0.98	0.44	2.34	3.38	2.03
Tanners, Fellmongers and Pelt dressers	0.00	0.00	0.49	6.04	0.32	0.00	1.11
Material handlers	0.36	0.00	0.00	0.29	2.24	0.53	0.77
Transport equipment's operators	0.71	0.31	0.25	0.15	0.11	0.00	0.14
Safety and quality inspectors	0.00	0.00	0.00	0.00	0.11	0.00	0.02
Electrical and electronic equipment mechanics	0.00	0.00	0.00	0.00	0.11	0.00	0.02
Tobacco preparers and tobacco products	0.00	0.00	0.00	0.00	0.00	0.07	0.02
Others professions	10.00	9.79	6.63	17.23	15.12	31.92	19.99

Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

From Table 7, food and beverage processing sub-sector absorbs the appreciable number of agro-processing workers though not in the majority because of the highly inelastic demand of food products. Over the years, however, the proportion of workers in the food processing industries has declined significantly from 80.36 per cent in 1987 to 42.32 per cent in 2013. This could be attributed to trade liberalisation which has out-competed a number of domestic agro-processing firms through the influx of foreign goods. The proportion of workers engaged in weaving, knitting and dyeing has increased on the average by about 5 per cent. This is attributable to the increasing change in the Ghanaian fashion trends where the taste for local textiles is gradually increasing which may well be considered as an aftermath of the persuasive 'Friday Wear' campaign initiated in 2001. In addition, the proportion of machine tool operators and machine fitters has also increased, but more significantly. It moved from 1.43 per cent in 1987 to 4.60 in 2013. This signifies some reliability in the availability of service from the technical workers which works to ensure smooth production process in the agro-processing firms.

Figure 13: Decent work in Agro-processing sector

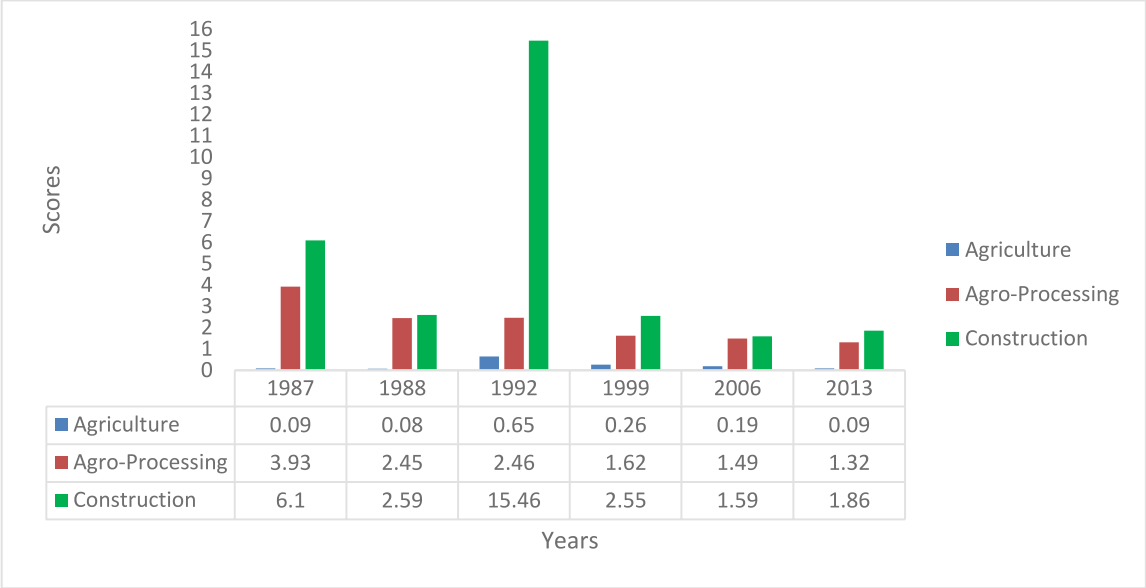


Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

From Figure 13, it is indicated that 5 per cent of the workers in the agro-processing sector worked with binding contract in 1987. It increased to 8.82 per cent but reduced to 4.67, 3.68 per cent and 3.19 per cent. Figures from the last GLSS survey suggest that only 12.05 per cent of workers working in the agro-processing sector are working with a binding contract. Similar situations of worsening features can be said about the other indicators. The number of workers with affiliation to trade unions dropped from 6.43 per cent to 4.97 per cent. Those with sick leave dropped marginally from 6.79 per cent to 6.36 per cent. Workers with social security also dropped from 6.43 per cent to 3.31 per cent. Overall, the number of workers with decent work dropped from 3.93 per cent of total agricultural workers in 1987 per cent to 1.32 per cent in 2013. From the last GLSS survey in 2013, it can be approximated from the data that approximately 99 per cent of employees in the agro-processing are without decent work.

A comparison of decent work across the agriculture, agro-processing and construction sectors indicate a very low level of decent work in the agricultural sector relative to the agro-processing and construction sectors as seen in Figure 14. It must be noted however that, the level of decent work in all three sectors is generally very low and has been declining over the years.

Figure 14: Decent Work across Sectors



Source: Authors' computation (2017) based on GLSS 1-6

Table 8: Distribution of employment by Region and sex across years in agro-processing sector

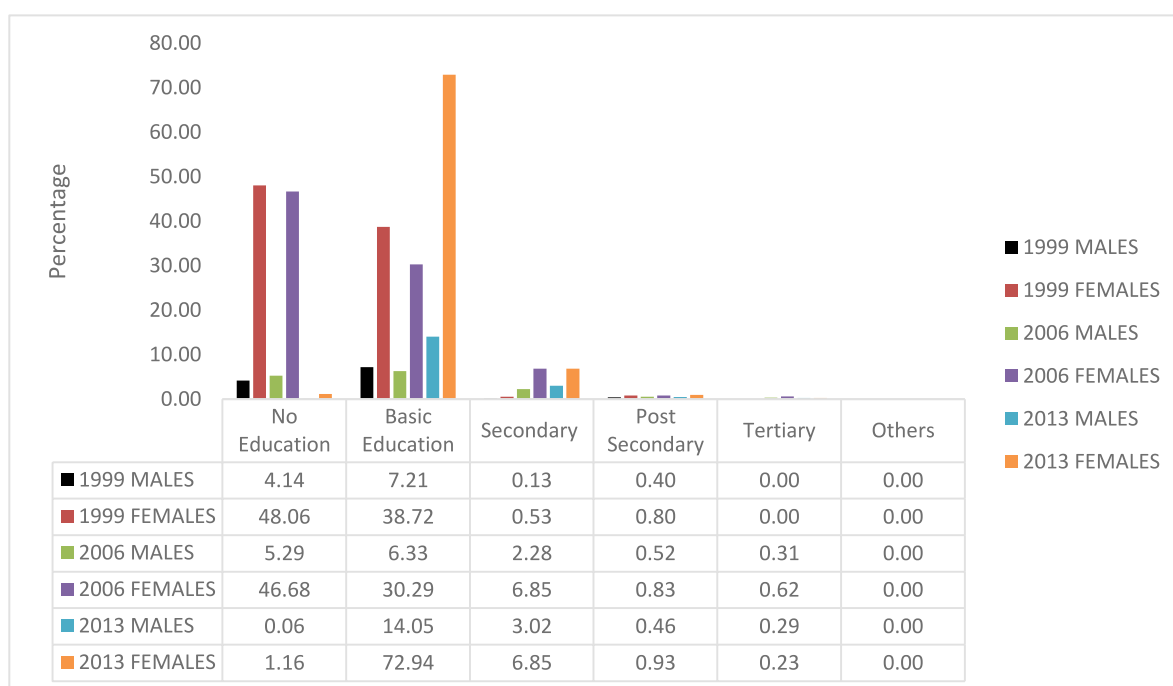
REGION	1999						2006						2013					
	URBAN			RURAL			URBAN			RURAL			URBAN			RURAL		
	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL
Western	6.90	10.58	17.48	9.21	13.67	22.88	9.68	9.06	18.74	9.41	6.05	15.46	12.21	14.96	27.17	9.39	4.63	14.02
Central	3.45	9.12	12.57	14.47	21.67	36.14	2.15	12.83	14.98	11.76	4.44	16.20	3.49	7.79	11.28	4.97	6.43	11.40
Greater Accra	55.17	25.18	80.35	1.32	3.67	4.99	39.78	26.42	66.20	2.35	2.82	5.17	25.58	18.03	43.61	4.42	3.44	7.86
Volta	6.90	7.30	14.20	10.53	26.67	37.20	6.45	9.81	16.26	17.65	13.31	30.96	4.65	10.86	15.51	23.76	13.00	36.76
Eastern	0.00	10.95	10.95	32.89	17.33	50.22	13.98	13.58	27.56	24.71	17.74	42.45	22.67	18.24	40.91	16.57	13.00	29.57
Ashanti	17.24	22.99	40.23	25.00	12.00	37.00	15.05	9.81	24.86	12.94	6.65	19.59	5.23	7.38	12.61	8.29	3.89	12.18
Brong Ahafo	6.90	5.84	12.74	2.63	1.33	3.96	3.23	5.28	8.51	7.06	3.63	10.69	11.05	7.79	18.84	5.52	6.43	11.95
Northern	3.45	2.19	5.64	1.32	1.67	2.99	5.38	9.43	14.81	5.88	17.14	22.92	11.63	7.79	19.42	11.60	10.31	21.91
Upper East	0.00	5.47	5.47	0.00	1.33	1.33	2.15	2.64	4.79	3.53	8.87	12.40	0.58	1.43	1.91	3.87	7.77	11.64
Upper West	0.00	0.36	0.36	2.63	0.67	3.30	2.15	1.13	3.28	4.71	19.35	23.06	2.91	5.74	8.65	11.60	31.09	42.69
Total	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00	100.00	100.00	200.00

Source: Authors' own computations from GLSS 4, 5 & 6

The employment levels of persons engaged in agro-processing in Ghana differ by survey period across regions. As shown in Table 8, the Ashanti region had the highest share of persons (about 18 per cent) engaged in agro-processing in 1999. This changed to the Eastern region with about 17 per cent of all those engaged in agro-processing, while in 2013 the Upper East had about 17 per cent followed by Eastern region with about 16 per cent. Over the survey periods, it is observed that while the three northern region saw an increased in the share of persons engaged in agro-processing, with the exception of Eastern region all the other regions saw a reduction in their numbers.

The face of agro-processing in Ghana is more female than male. Table 8 shows that, while the males engaged in agro-processing are mostly found in the urban areas, females dominate in the rural areas. In the Upper East region, the share of females in agro-processing has been increasing progressively peaking at about 31 per cent in 2013. The Central region has also consistently had more females than males in all various rounds of the GLSS and in both rural and urban areas.

Figure 15: Level of Education among the sexes in the Agro-processing sector

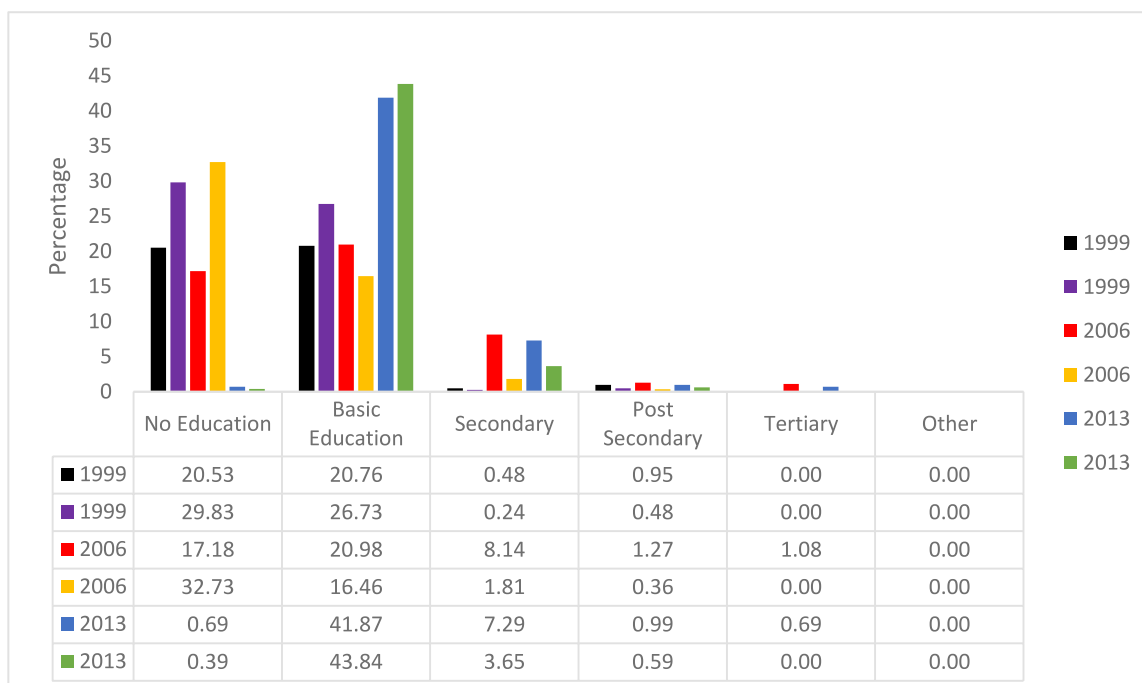


Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

The level of education of males and females in the agro-processing sector is presented in Figure 15. It can be observed that, from 1999 to 2006, the percentage of male workers in the agro-processing sector without education increased but reduced sharply in 2013. The percentage of female agro-processing workers with basic education dropped between 1999 and 2006 but increased markedly to about 73 per cent in 2013. On the whole, it can be seen that on the average, while the percentage of male and female workers with no education declined between 1999 and 2013, the percentage of male and female workers with basic and secondary education in the agro-processing sector experienced an increase on the average over the same period. Over the years, females have dominated the agro-processing sector.

This may be due to the fact that the agro-processing sector is largely artisanal in nature and requires little or no education. However, the gap between the females and the males keeps on reducing as the level of education improves.

Figure 16: Education by location in Agro-processing

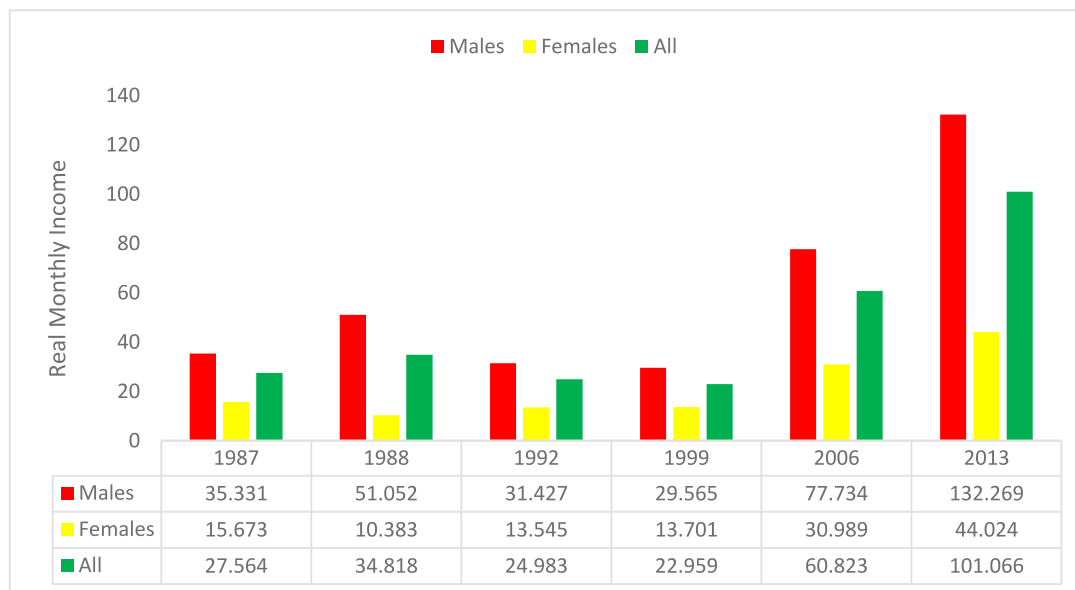


Source: Authors' own computations from GLSS 1, 2, 3, 4, 5 & 6

In the agro-processing sub-sector, Figure 15 shows that the educational levels of persons engaged in it has also increased progressively. While those with no education has reduced from 30 per cent and 21 per cent in 1999 to 0.4 and 0.7 per cent in 2013 in rural and urban areas respectively, the percentage of persons with basic education has increased from 27 per cent and 21 per cent in 1999 to 44 per cent and 42 per cent in the rural and urban areas, respectively. The same trend is also seen in the secondary and post-secondary levels too. Persons having tertiary education can be observed only in the urban areas in the GLSS survey.

Income and Poverty Status of Employees in the Agriculture and Agro-processing sector

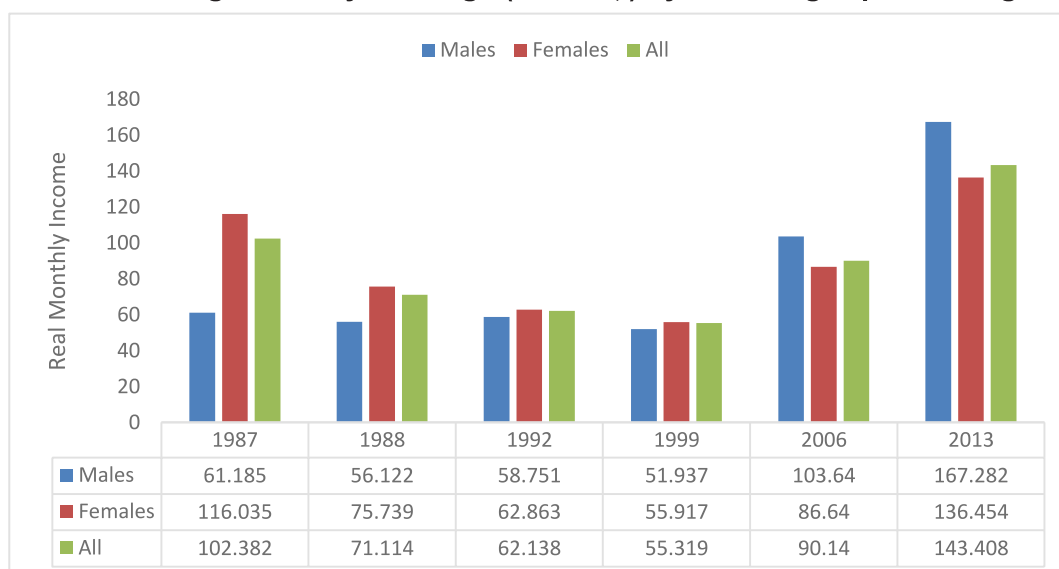
Figure 17: Real Average Monthly Earnings (Ghana ¢) by Sex in Agriculture sector



Source: Authors' construct (2017) from GLSS 1-6

Figure 16 presents the real average monthly earnings by sex in the agricultural sector in Ghana. The figure shows that males earn higher compared to females. The real earnings in the agricultural sector over the years have been low but improved in 2013 compared to 2006 which is the base year. In 2013, there was an appreciable increase in earnings by about 70 per cent and 14 per cent for males and females respectively in the agricultural sector compared to 2006. In summary, real average monthly earnings for both males and females fluctuated between 1987 and 1999, but between 2006 and 2013, there has been a steady rise.

Figure 18: Real Average Monthly Earnings (Ghana ¢) by Sex in Agro-processing sector



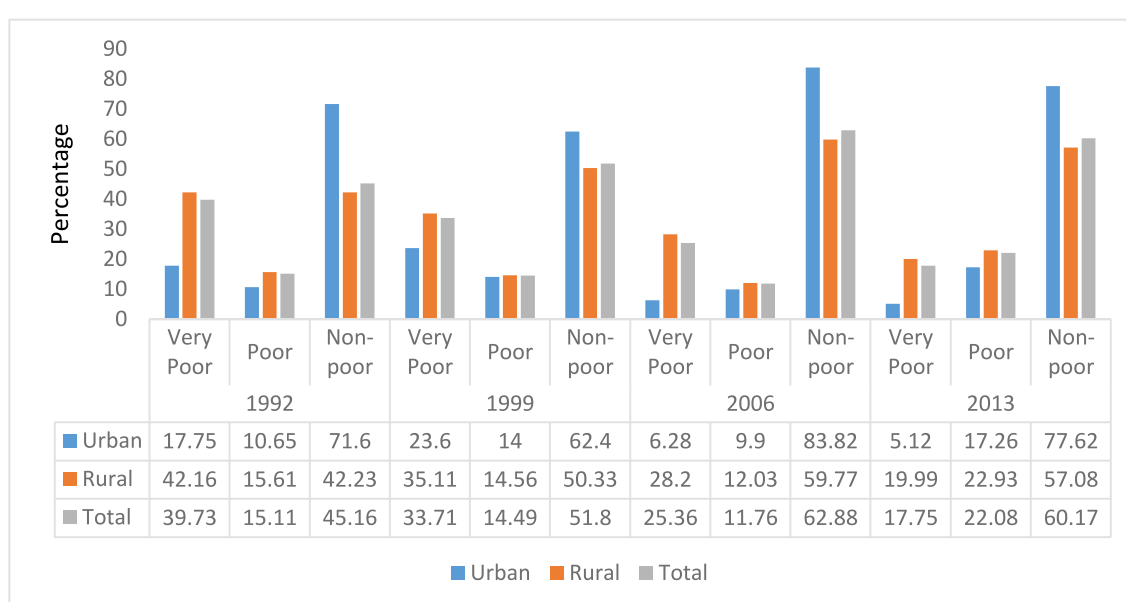
Source: Authors' construct (2017) from GLSS 1-6

Real average monthly earnings by sex in the agro-processing sector in Ghana are presented in Figure 17. Real average monthly earnings fluctuated between 1987 and 1999 for male workers in the agro-processing sector but experienced a rise between 2006 and 2013; while the real average monthly earnings of female workers in the sector experienced a decline over the period 1985 to 1999. The real average monthly earnings of female workers however, increase between 2006 and 2013. Real average monthly earnings of female workers were high compared to male workers between 1987 and 1999. For instance, in 1987, female workers earned GH¢116.04 compared to males (GH¢61.19). From 2006 to 2013, however, earnings of male workers in the agro-processing sector were higher than that of female workers.

In relation to poverty status, Ghana measures poverty using two poverty lines in accordance to international standards; upper poverty line and lower poverty line. Lower poverty line focuses on the nutritional requirements of household members. Individuals whose total expenditure falls below this line are considered to be in extreme poverty, since even if they allocated their entire budgets to food, they would not be able to meet their minimum nutrition requirements. However, the upper poverty line focuses on both food and non-food consumption. Individuals consuming at levels above this can be considered able to purchase enough food to meet their nutritional requirements, and to be able to meet their basic non-food needs.

The upper poverty line as at 1992 was GH¢17.1205 per year, per equivalent adult in constant May 1992 Accra prices, and an extreme or lower poverty line of GH¢12.8404 in the same units (GSS, 1995). As at 1999, the lower and upper poverty lines were set at ¢70 and ¢90 respectively (GSS, 2000). By the year 2006, Ghana's lower poverty line was set at GH¢288.47 and an upper poverty line of GH¢370.89 per adult equivalent per year (GSS, 2007). Currently, Ghana's poverty line as at 2013 are set to be within GH¢792.05 and GH¢1,314.00 per adult per year for both lower and upper poverty lines respectively (GSS, 2014).

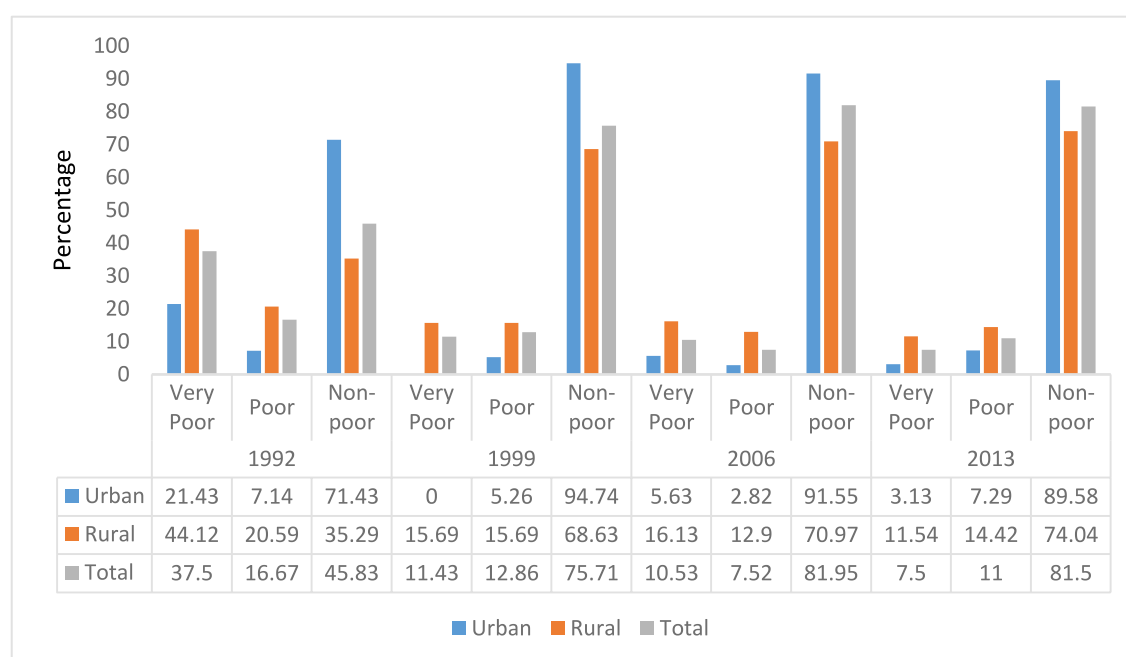
Figure 19: Poverty status in the Agriculture sector by Location



Source: Authors' construct based on GLSS 3-6

Poverty status by location in the agricultural sector in Ghana shows most farmers fall within the category of non-poor for GLSS 3-6. From Figure 18, farmers in rural and urban areas are above the poverty level though urban farmers ranked higher compared to rural settlers. In 1992, farmers in urban areas scored 17.75 per cent, 10.65 per cent and 71.6 per cent for poverty levels in terms of very poor, poor and non-poor respectively. Farmers in the rural areas scored 42.16 per cent, 15.61 per cent and 42.23 per cent for very poor, poor and non-poor respectively. In 1999, urban household farmers recorded an estimate of 23.6 per cent, 14 per cent and 62.4 per cent for the poverty levels of very poor, poor and non-poor. On the other hand, rural farmers recorded a 35.11 per cent, 14.56 per cent and 50.33 per cent for the poverty levels of very poor, poor and non-poor respectively. Non-poor farmers continued to top the poverty levels with an estimate of about 83.82 per cent followed by poor farmers' estimates of 9.9 per cent then 6.28 per cent for very poor farmers in urban areas in 2006. This year also saw non-poor farmers leading in the rural areas with an estimate of 59.77 per cent followed by very poor farmer with 28.2 per cent and 12.03 per cent for the poor category. In 2013, poverty level in urban areas ranked non-poor famers leading with 77.62 per cent, 17.26 per cent for poor farmers and 5.12 per cent for very poor farmers. In the rural areas non-poor farmers were high with an estimate of 57.08 per cent, 22.93 per cent for poor farmers and 19.99 per cent for very poor farmers, respectively. On the average, poverty status in both urban and rural communities belongs to the non-poor category as shown in Figure 18. Even though non-poor farmers were ranked high for GLSS 3-6, urban non-poor farmers were higher than non-poor farmers in rural areas.

Figure 20: Poverty status in the Agro-processing sector by Location



Source: Authors' computation based on GLSS 3-6

Poverty status by location in the agro-processing sector in Ghana shows farmers in urban areas fall within the category of non-poor, whereas in the rural areas farmers were very poor in 1992 then shifted to non-poor from 1999 to 2013. From Figure 19, farmers in rural and urban areas are above the poverty level though urban non-poor farmers had higher

percentage compared to rural settlers. In 1992, farmers in urban areas scored 21.43 per cent, 7.14 per cent and 71.43 per cent for poverty levels in terms of very poor, poor and non-poor respectively. Farmers in the rural areas scored 44.12 per cent, 20.59 per cent and 35.29 per cent for very poor, poor and non-poor. In 1999, urban household farmers recorded an estimate 0 per cent, 5.26 per cent and 94.74 per cent for the poverty levels of very poor, poor and non-poor. On the other hand, rural farmers recorded a 15.69 per cent, 15.69 per cent and 68.63 per cent for the poverty levels of very poor, poor and non-poor respectively. Non-poor farmers continued to top the poverty levels with an estimate of about 91.55 per cent followed by the very poor farmers with an estimates of 5.63 per cent then 2.82 per cent for poor farmers in urban areas in 2006. This year also saw non-poor farmers leading in the rural areas with an estimate of 70.97 per cent followed by the very poor farmers with 16.13 per cent and 12.9 per cent for the poor category. In 2013, urban non-poor farmers were estimated to be 89.58 per cent, 7.29 per cent for poor farmers and 3.13 per cent for very poor farmers. In the rural areas, non-poor farmers were high with an estimate of 74.04 per cent, 14.42 per cent for poor farmers and 11.54 per cent for very poor farmers. On the average, poverty status in both urban and rural communities belongs to the non-poor category. As non-poor farmers were ranked high for the total household farmers, urban non-poor farmers were higher than non-poor farmers in rural areas.

The Integrated Business Survey

Table 9: Nationality of persons engaged in the Agriculture sector

Region	Number	Ghanaians	Non-Ghanaians
Western	9817	9815	2
Central	3792	3788	4
Greater Accra	19706	19533	173
Volta	3285	3251	34
Eastern	8655	8626	29
Ashanti	6983	6967	16
Brong Ahafo	5136	5128	7
Northern	1610	1604	6
Upper east	380	380	0
Upper West	530	530	0
Total	59893	59622	271

Source: GSS (2015), National Employment Report

Table 9 shows the number of people that are engaged in agriculture by region and nationality in Ghana. This indicates that most people engaged in the agriculture sector are Ghanaians and in the southern belt. The Table 9 indicates that the total number of persons employed in the agriculture sector is about 59,893 including about 271 non-Ghanaians. The

region with the highest employment in the agriculture sector is Greater Accra with about 19,706 people including 173 non-Ghanaians. This is followed by Western Region with about 9,817 people employed in agriculture including 2 non-Ghanaians. Eastern Region rank third with about 8,655 agricultural workers, followed by Ashanti and Brong Ahafo Region with about 6,983 and 5,136 agricultural workers respectively. The Table rank Upper East the least with minimum agricultural workers of about 380 with no foreigners. The total number of people engaged in agriculture included foreigners with Greater Accra recording the highest of about 173 workers, followed by Volta 34, Eastern 29 and Ashanti 16. Brong Ahafo, Northern, Central and Western regions had foreign participation below 10 with none for both Upper East and Upper West.

Formal establishment is a well-structured organisation with clearly defined responsibilities for the employee, the authority, and responsibility assigned to every individual. Informal establishments on the other hand, aim at achieving individual goals as compared to organisational goals. In addition, formal organisations have the tendency to employ more and generate revenue to government through payment of income taxes, corporate tax and other benefits for employees such as social security and others.

Table 10: Number of person engaged by formal and informal establishment in the Agriculture sector by region

Region	Number of Persons engaged	Formal	Informal
Western	9,817	8,451	1,366
Central	3,792	2,913	874
Greater Accra	19,706	18,585	1,121
Volta	3,285	1,931	1,354
Eastern	8,655	6,672	1,983
Ashanti	6,983	3,682	3,301
Brong-Ahafo	5,136	2,414	2,721
Northern	1,610	466	1,144
Upper east	380	133	247
Upper West	530	260	270
Total	59,893	45,512	14,381

Source: GSS (2015), National Employment Report

Table 10 shows that most establishments in the agriculture sector are formal. Out of a total of 59,893 agriculture workers 45,512 are by formal engagement representing about 76 per cent compared to 14,381 workers by informal engagement representing about 24 per cent. It can be seen from Table 10 that agricultural firms in Greater Accra, Western, Eastern, Ashanti, Central and Volta regions have most of their workers in formal establishment compared to firms in the

Brong Ahafo, Northern, Upper East and Upper West regions where there are more informal workers compared to the formal. Among the total agriculture workers, Greater Accra recorded the highest formal workers with about 18,585 people compared to other regions and 1,121 informal workers. Upper East recorded the least formal workers with about 133 people and 247 informal workers. With the informal establishments, Ashanti region recorded the highest with about 3,301 workers followed by 1,983 workers in the Eastern region.

Table 11: Number Engaged in Agro-Processing by Region and Gender

Region	Male	Female	Total
Western	5,883.00	1,710.00	7,593.00
Central	4,557.00	2,739.00	7,296.00
Greater Accra	22,942.00	11,812.00	34,754.00
Volta	4,911.00	2,503.00	7,414.00
Eastern	5,426.00	3,387.00	8,813.00
Ashanti	9,203.00	4,418.00	13,621.00
Brong Ahafo	4,098.00	3,211.00	7,309.00
Northern	6,730.00	2,193.00	8,923.00
Upper East	2,170.00	1,100.00	3,270.00
Upper West	1,858.00	592.00	2,450.00
Total	67,778.00	33,665.00	101,443.00

Source: IBES (2014)

The IBES is a census of all establishments in the country. From the Table 11, of the 101,443 persons engaged in Agro-processing in Ghana as at 2014, 66.81 per cent were males while the remaining 33.19 per cent were females. It was also seen across all the regions in Ghana that agro-processing workers were predominately males. The Western region has the highest proportion of males to females of about 3 males to 1 female. Greater Accra region had the highest number of people engaged in agro-processing in the country of about 34 per cent. Ashanti region follows with about 13 per cent with Upper West having the least number of persons (about 2 per cent). The greater proportions of women are in the Northern region where they form about 44 per cent of persons engaged in agro-processing. A more interesting result is seen in Greater Accra where even though the levels of agricultural activities are low, compared to other regions, it has the highest numbers. This could be due to the high volumes of agricultural produce brought in from the hinterlands to the region. The case of Upper West region is to be expected since with the exception of the shear-butter industry there is little by way of agro-processing.

Table 12: Agro-Processing Industries by Size and Total Number of Employees

Size	Number of Establishment	Total employed
1-4	15,634.00	30,742.00
5-9	1,775.00	10,878.00
10-14	419.00	4,675.00
15-19	154.00	2,497.00
20-24	127.00	2,660.00
25-29	56.00	1,476.00
30-49	116.00	4,190.00
50-99	87.00	5,779.00
100-199	39.00	5,538.00
200+	46.00	33,008.00
Total	18,453.00	101,443.00

Source: IBES (2014)

In terms of the sizes of the agro-processing establishments, Table 12 shows that the highest agro-processing establishments are found among those that employ between 1-4 workers. It account for over 85 per cent of all agro-processing firms in the country as at 2014. About 13 per cent of all the establishments are also found among the firms that employ between 5-24 workers. This shows that about 98 per cent of all agro-processing establishments are micro or small. This will demand that to make them sustainable and vibrant and continuously contribute to employment creation, support from appropriate quarters would be needed. With regards to employment generated, establishments that employ more than 200 workers has the highest number, accounting for about 33 per cent of all employees in the agro-processing sector. The micro and small establishments employing between 1-24 workers make up about 50 per cent of the total labour force in the sub-sector.

Table 13: Skill Sets Employed in Agro-Processing by Region

Region	Skilled workers	Unskilled workers	Apprentices
Western	3,494	2,036	164
Central	4,243	1,186	163
Greater Accra	25,283	5,200	395
Volta	3,480	603	108
Eastern	3,431	2,888	192
Ashanti	8,700	1,976	380
Brong Ahafo	3,537	1,921	207
Northern	4,491	860	393
Upper East	1,348	733	94
Upper West	1,008	231	164
Total	59,015	17,634	2,260

Source: IBES (2014)

In the Agro-processing sub-sector, workers are made up of those who have some specific skills, those without skills and paid apprentices. Table 13 shows that about 75 per cent of all workers in the sub-sector are classified as skilled, 22 per cent unskilled and apprentices about 3 per cent. Of the skilled workers, about 43 per cent of them are found in the Greater Accra region followed by Ashanti region (about 15 per cent). The same trend is also seen in the unskilled workers category. Apprenticeship can be a way to encourage entrepreneurship in the country. In this regard, more people should be motivated to attach themselves with industries of their choice. While Greater Accra has the highest numbers, Northern region comes second followed by Ashanti region.

Table 14: Skill Sets Employed in Agro-Processing by Size

Size	Skilled workers	Unskilled workers	Apprentices
1-4	10,477	3,390	948
5-9	5,592	2,637	594
10-14	2,690	1,089	243
15-19	1,468	656	80
20-24	1,578	796	47
25-29	850	424	34
30-49	2,579	1,140	33
50-99	3,824	1,327	105
100-199	3,799	1,144	50
200+	26,158	5,031	94
Total	59,015	17,634	2,260

Source: IBES (2014)

Table 14 shows that of the skilled workers in the Agro-processing sub-sector, about 44 per cent of all workers are found in the establishment with over 200 workers. About 18 per cent of the workers are found in the micro enterprise category. A similar trend is observed in the unskilled workers categories. Interestingly, 83 per cent of all apprentices are found in the micro and small establishment groups.

SECTION 7: REVIEW OF MACROECONOMIC TOOLS FOR AGRICULTURE & AGROPROCESSING ANALYSIS

7.1 Introduction

The literature surveyed so far shows that SAM-based analysis and CGE models probably form part of the current state of the art in analysis that seek to assess the impact of interventions in the agriculture and agro-processing sectors on employment at both the micro and macro levels within a consistent framework. In essence, macroeconomic models in general, provide an internally consistent framework that effectively combines the expenditure, financial, income, prices, employment and the external sub-sectors into a coherent system (Dordunoo, 1994). These sectors may be represented by some core equations, which encompass the integral features of the economy. In the discussions that follow, we provide the responses based on in-depth interviews with key informants from NDPC and GSS on the availability and level for details of macro-economic in Ghana.

7.2 Social Accounting Matrix (SAM) for Ghana

Ghana has had two official SAMs produced, with the first being developed in 1993 and the second one in 2005. GSS together with IFPRI (Breisinger, Thurlow & Duncan, 2007) produced the 2005 SAM as a joint initiative with the Ghana Strategy Support Programme (GSSP). According to Breisinger et al. (2007), a SAM is a consistent data framework that captures the information contained in the national income and product accounts and the input-output table, as well as the monetary flows between institutions. It can simply be described as a snapshot of the economy at a particular point in time.

In preparing the SAM, data from different sources are collected and harmonised. By this process, the deficiencies that we have as a country in data collection and their sources are highlighted and addressed. This becomes one important benefit of the SAM. The 2005 SAM was made possible with information from the GLSS 5, the 2003 Industrial Survey, data from MoFA, and the Ministry of Finance and Economic Planning with data on government revenue and expenditure. The SAM identifies 56 productive sectors or activities (within a 135 SAM account) that combine primary factors with intermediate commodities to produce output. Out of the 56 sectors, 26 sectors reflect activities and commodities from agriculture, 20 from industry and 10 from the services sector. Farm budget data provided by MoFA was used to estimate the Input-Output (I-O) coefficients for crop and livestock production. This included detailed information on labour costs, land rents, intermediate inputs such as fertilizer, chemicals, transport services etc., and estimates on fixed costs by crop and agro-ecological zone. Interestingly, the agro-processing activities captured in the 2005 SAM include formal food processing, local food processing, cocoa processing, dairy production and meat processing. Both operations from farm and non-farm enterprises were used in accounting for the profit earned.

Factor accounts in the SAM were disaggregated into six categories: self-employed labour, unskilled labour, skilled labour, agricultural specific capital, other capital and land. Institutions have also been grouped into three: households, government and the rest of the world. The household classification adopted in the SAM consists of a distinction between rural and urban households. The gross income of the households consists of the payments to

the factors of production and transfers from other institutions (government and the rest of the world). This income is used for final consumption, for transfers to enterprises and to the government (including the direct taxes). The remainder is saved. The role of government in the SAM is handled by an explicit formulation of the tax financing and expenditure activities. The government sector is disaggregated into a core government account and different tax accounts, one for each type of tax. The tax account consists of indirect taxes on production, import tariffs, export taxes and direct income taxes. The sources of revenue to government are transfers from other institutions. The balance of the current account of the rest of the world corresponds to the saving of this account. The main source of information for the preparation of the original SAM was obtained from the 2005/06 GLSS 5, the 2003 Industrial Survey and revised agricultural data from MoFA (Breisinger et al., 2007).

The Ghanaian economy in the last decade has experienced changes that require a new SAM to be developed, since the existing SAM is already 12 years old. Among the changes are: the re-basement that culminated in the attainment of a lower middle-income status, oil discovery and increased urbanisation. In view of Ghana's transition through different phases of economic development, it has become imperative to develop a new SAM to reflect the changing dynamics in the economy and to be able to offer sound economic policy prescriptions. Interaction with a key informant at the GSS revealed the efforts that are currently underway by the GSS in collaboration with IFPRI and ISSER to construct a new SAM for the country. This notwithstanding, the existing SAM is still useful in providing a snapshot on how the economy will be affected if any of the inputs are changed. Except for the insights on the factor accounts, the SAM does not explicitly provide information on the levels of employment likely to be generated with increased investment in agriculture or agro-processing sector. Whether or not the new SAM for Ghana will account for extensive disaggregation of the agricultural and agro-processing sectors remains to be verified.

7.3 Insights on Macroeconomic Models for Ghana

The NDPC is in the process of developing a model for macroeconomic forecasting, sectoral planning and policy analysis. The model is being developed by Oxford Economics, a consulting firm from the UK. The main aim for developing the model is ensure that the country get very good macroeconomic forecasting framework that enhance the ability of the country to achieve the goals set in the forty-year development framework.

The model has the ability to forecast on growth of GDP and GDP per capita, manufacturing share of GDP that would help that country to know its progress in terms of industrialisation. It also possesses the ability to forecast inflation rates, electricity consumption per capita, productivity in the agricultural sector, government revenue, etc. Furthermore, the models capture issues related labour market and employment in the various sectors of the economy. The model, when completely developed, can be used to forecast employment levels in the economy as whole and the various sectors of the economy based on changes that occur in the structure of the economy.

The model also includes indicators related to inclusive and equitable growth and social progress indicators. The model provides geographic dimensions to GDP and employment. Thus, information on regional GDP and employment levels is provided to help the country identify the key regions that require more attention. In addition, model captures and can be used to forecast labour force participation rate for both male and female, wage and salaried

employment share of total employment based on sex and youth employment and unemployment levels. The model also takes into account environmental outcome indicators. It is hoped that the draft version of the model will be available by the middle of the year 2017.

SECTION 8: ANALYSIS OF OIL PALM VALUE CHAIN IN GHANA

8.1 Introduction

This section is divided into two sub-sections. The first sub-section presents a snapshot of the oil palm industry and its value chain. The second section deals with a case study of oil palm value chain.

8.2 Overview of the Oil Palm Value Chain in Ghana

It is worth beginning with the note that government has intensified efforts to create the environment for the processing of some produce, including cocoa, oil palm and cassava processing and also adding value to non-traditional exports. The analysis in this section focuses on oil palm processing in Ghana. The review draws from one of the most comprehensive reports on the sector involving a master-plan study for the development of the oil palm industry in Ghana, prepared by MASDAR International Consultants for the Ministry of Food and Agriculture, under the programme for the promotion of perennial crops funded by Agence Française de Développement (AFD) and the Kreditanstalt für Wiederaufbau (KfW) (MASDAR, 2011).

Oil Palm production has been part of the economy of Ghana since the mid-nineteenth century. According to Danyo (2013b), Ghana's first international commercial trade in oil palm took place in 1820. Starting from the wild palm harvesting, oil palm evolved into an agricultural crop and plantations were established by 1850. This led to palm oil becoming the principal export from the then Gold Coast. By the 1880s, palm oil accounted for 75 per cent of the Country's export revenue (MASDAR, 2011). The large-scale oil palm plantations continued when Ghana gained independence with the establishment of State Farms which later led to the development of plantations like National Oil Palm Plantations (NOPL) and Benso Oil Palm Plantation. This state-led initiative was aimed at milling palm oil to feed the established industries for the manufacture of soap and edible fat.

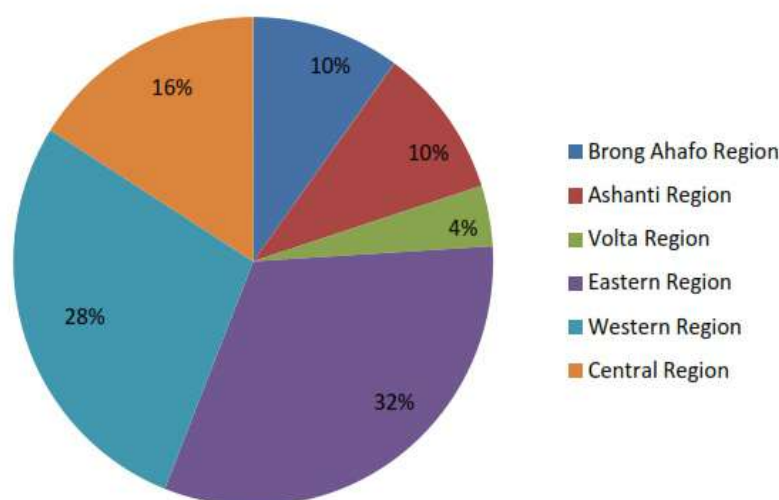
Beyond the fact that oil palm remains a priority crop for development by the government of Ghana, the decision to choose oil palm as a value chain commodity for this analysis was influenced by the fact that the commodity is the fifth-largest crop in the country in terms of area planted after cocoa, maize, cassava and yam (Ofosu-Budu & Sarpong, 2013). Again, oil palm remains the second most important tree crop in the Ghanaian economy after cocoa and is therefore one of the leading cash crops in the rural economy in the forest belt of Ghana. According to the MASDAR (2011) report, of the 17 major vegetable oils traded on the international market, palm oil is the most important and accounts for more than half of the global import and export trade of all vegetable oils. The report further indicates that, Palm oil is 5 to 10 times more productive than other oil bearing crops and has the lowest requirement for inputs of fuel, fertilizers and pesticides per tonne of production.

Furthermore, the prospects of the oil palm industry for providing employment for thousands of unskilled and semi-skilled people in the country are enormous. Cultivation and processing of oil palm serves as a means of livelihood for many rural families and provides effective avenues for increased export earnings, poverty alleviation, food security and ensuring economic stability in Ghana (Ofosu-Budu & Sarpong, 2013). Various documentary reports estimate the palm oil sector employs over 300,000 people in Ghana and need to be

given the needed attention to exploit its full potential (MASDAR, 2011).

In terms of location and geographical coverage, the Ashanti, Eastern, Western, Central, Volta and in the Brong Ahafo Regions of Ghana are suitable areas with the right climatic and soil conditions for the cultivation of oil palm in Ghana (see figure1 below). The total estimated area of oil palm cultivation in the country is 336 000 ha, even though the total area suitable for oil palm cultivation is about 1 million ha (Ofosu-Budu & Sarpong, 2013). Independent small holdings are estimated to be producing over 1.2m mt Fresh Fruit Bunches (FFB) while estates are processing over 400,000 mt FFB per year. Yields on the estates in Ghana are much higher than on small holdings although they are still lower than what is being achieved in the Far East and La Cote d'Ivoire (MASDAR, 2011). In Ghana, oil palm cultivation has a peak season from April to November and a lean season from December to March, which corresponds with the rainy and dry seasons. About 70 per cent of annual yield occurs during the peak season. In terms of variety, much of the fruit produced by independent smallholders comes from dura palms and is processed in the village and is only suitable for local consumption because the quality is not satisfactory for industrial processing. Dura palm fruit is however, favoured on the local market. On the other hand, the estates are predominantly of tenera palms which have a higher extraction rate and most of the crude palm oil from these operations goes for industrial processing (MASDAR, 2011).

Figure 21: Oil Palm Distribution of Area under Cultivation by Region

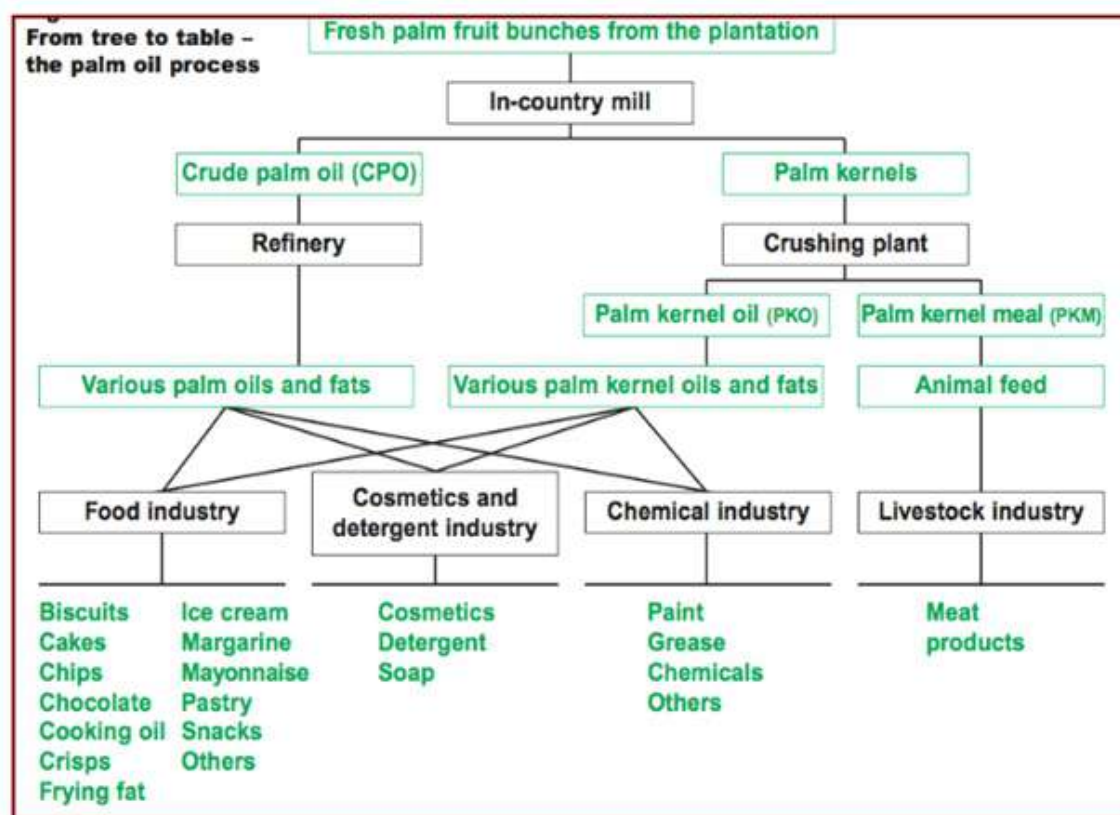


Source: MASDAR (2011)

The opportunity for value-added manufacturing from the oil palm tree is enormous, as shown in Figure 21. The principal product of oil palm is the palm fruit, which is processed to obtain commercial products including crude palm oil (CPO), palm kernel oil (PKO) and palm kernel cake (PKC). The processing of CPO gives rise to three different products: food products (cooking oil, margarine, etc.); manufactured/industrial goods (cosmetics, soaps/detergents, etc.); and fuel (biodiesel) (Ofosu-Budu & Sarpong, 2013). Apart from palm oil, palm kernel and palm kernel oil which are the main products of the oil palm, the tree and the processing wastes generated when the fruits are processed to obtain palm oil and palm kernel have several uses. The sludge is used in making traditional soaps and fertilizer

and the PKC is used widely as an input into the feed industry and for fertilizer. In addition the other parts of the palm tree (trunk, leaves, fibre) have broad uses, while the bunch refuse, and by-products from the oil processing (fibre, shell, sludge) can be used as fuel for the mills, making briquettes to substitute for fuel wood (PIND, 2011). Throughout the value added process, employment is created at each stage. These are seen through the many women groups that are engaged in the traditional processing of the palm fruits into oil. For example, in a typical small-scale oil processing firm, an average of 30 workers are usually employed who make up the value chain including producers of the palm fruits, fruits boilers and oil extractors. The ratio of females to males is 5:1. Many are also engaged in the manufacturing of traditional products such as soap.

Figure 22: The Palm Oil Value Chain



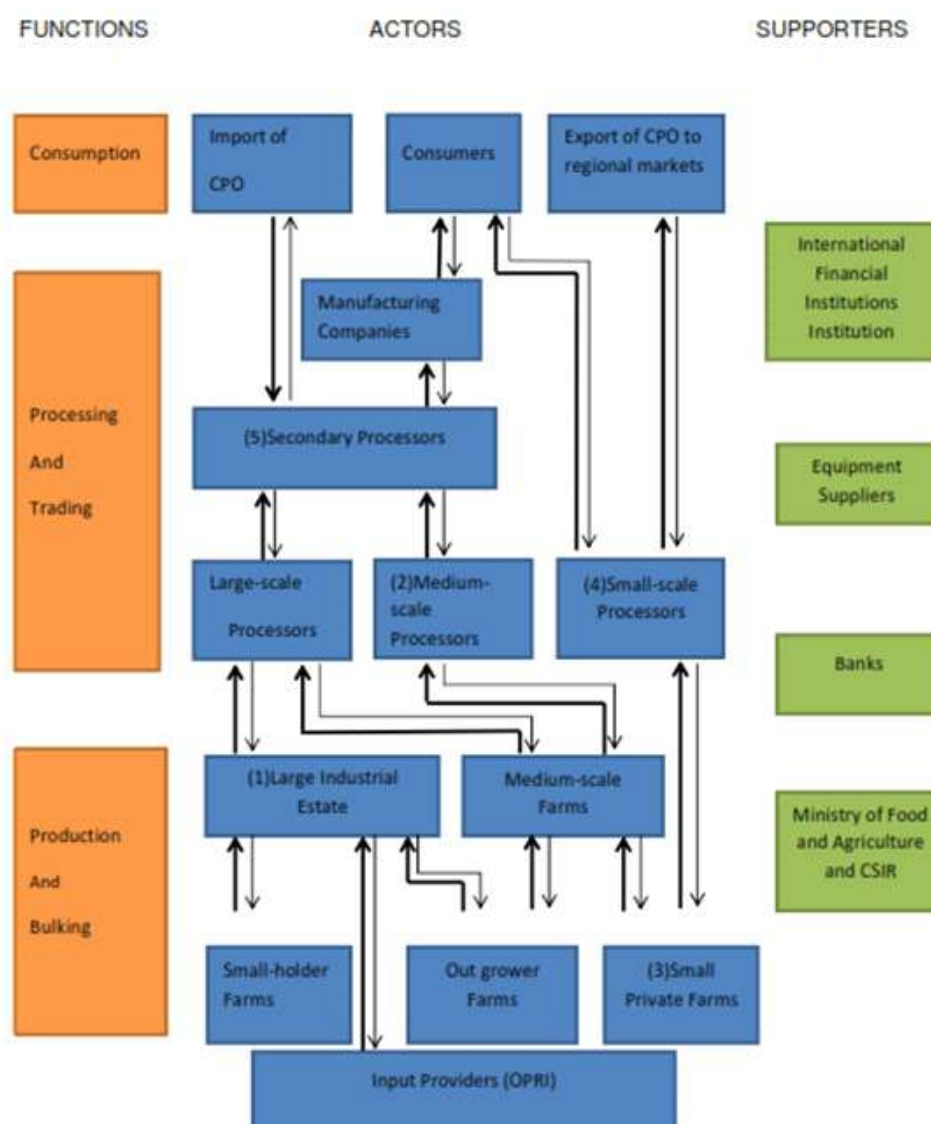
Source: Master-plan Study on the Oil Palm Industry in Ghana (2011)

The oil palm industry is characterised by various types of agro-systems, ranging from large agro-industry plantations to small-scale farmers, who may or may not be organised into cooperatives. According to Danyo (2013), and as illustrated in figure below, five main types of actors are recognised in the oil palm and palm oil sectors in Ghana. They are:

- i. Large industrial plantations with large-scale processing mills and a network of smallholder and out-grower farmers.
- ii. Medium-scale plantations with medium-scale industrial mills with a network of out-growers.
- iii. Small private farmers cultivating less than 10 hectares.

- iv. Small-scale processors using semi-mechanised mills with capacities of about 6–10 tonnes per day.
- v. Secondary processors who process crude palm oil into refined olein (Figure 18).

Figure 23: A schematic overview of the key functions, actors and supporters in the oil palm value chain in Ghana



Source: Danyo (2013)

The industrial sub-sector consists of medium and large-scale oil palm plantations and mills. It is characterised by more efficient technology, economies of scale, higher productivity on farms (in terms of yields of oil palm bunches) and in mills (in terms of quantity of oil extracted), and by its better quality of crude palm oil as well as further refined palm oil products, which are sold to companies for use in manufacturing (Danyo, 2013a).

The small-scale sub-sector consists of private smallholder oil palm cultivators, who largely sell their fruit bunches to small-scale mills or household (largely manual) processors. It is characterised by low-yielding oil palm variety, low productivity of farm and mill, and low quality crude palm oil which is sold in the village or at small town markets (Danyo,

2013a).

The Ghana oil palm industry consists of both large-scale estates with their associated mills, smallholders and out-growers producing for industrial consumption; and the small-scale sector including artisanal mills supplying low quality oil for the local market (where it is favoured) (MASDAR, 2011). There are four large-scale oil palm plantations that have their own processing mills. They are: Ghana Oil Palm Development Company (GOPDC), TOPP, Benso Oil Palm Plantations (BOPP), and Norpalm Ghana. The processing capacities of these large-scale firms averages above 20 mt of fresh fruit bunches (FFBs) per hour. Together they account for 25 per cent of the country's total production (Sutton & Kpentey, 2012).

In terms of employment, the poverty of data in the industry prevents any meaningful analysis of the figures and trends. Only spotty information is available for some selected value chains in the oil palm industry. Given that the country has about 4 large scale plantation companies, 8 medium sized firms and about 400 small scale processing units, it is estimated that these businesses are creating employment in the oil palm sector for more than 300,000 people. For example, the Ghana Oil Palm Development Company (GOPDC), which is the largest in the sub-sector employs around 3,000 workers during the peak season, while TOPP employs around 1,500 field workers. This is in addition to the over 800 administrative staff at GOPDC and 380 permanent administrative staff at TOPP. The implication of these employment figures given that an estimated 336,000 hectares of oil palm is under cultivation, is that, employment in the sector is around one job per hectare. This estimate of one job per hectare in the industry, however, contrast with views from key informants who posit that a hectare of palm oil plantations offers permanent employment for two people over 25 years. Therefore, for an estimated 336,000 hectares under cultivation, we should expect the industry to be employing around 672,000 people in Ghana.

Table 15: Leading large and medium palm oil estates in Ghana

Companies	No. of plantations	No. of outgrower / smallholders	Total area planted (Ha)	Milling capacity (tons per hour)
GOPDC (Ghana Oil Palm Development Company Ltd)	8,000	14,352	22,352	60
TOPP (Twifo Oil Palm Plantations Ltd)	4,234	1,690	5,924	30
BOPP (Benso Oil Palm Plantations Ltd)	4,666	1,650	6,316	27
Norpalm GH. Ltd.	4,000	-	4,000	30
Juabin Oil Mills	424	1,100	1,524	15
Ayiem Oil Mills	250	-	250	10
Golden Star (A mining company)	-	720	720	-
TOTAL	21,574	19,512	41,080	172

Source: MoFA, (2012)

From Table 15, Medium-size companies, with processing capacities between 2 mt and 20 mt of FFBs per hour, include Ayiem Oil Mills, Juaben Oil Mills, Adansi Oil Mills and Anyinase Oil Mills. These medium-size firms account for 15 per cent of Ghana's total production (Sutton & Kpentey, 2012). Medium and large-scale mills sell to a small number of industrial companies, with Unilever being the dominant buyer until recently. Unilever's factory in Ghana produces a large range of consumer goods marketed in the West African region. Unilever (formerly Lever Brothers), PZ Cussons (Patterson Zacchonis), Ameen Sangari and now GOPDC have refinery and fractionation facilities. There are a few other buyers of crude palm oil who use it in manufacturing soaps and other products (Sutton & Kpentey, 2012). A number of small-scale producers, processing 0.5–2 mt of FFBs per hour, account for the remaining 60 per cent of total production.

With regards to the policy context, the oil palm industry has been viewed by successive governments as having the potential to contribute significantly to the country's export earnings. As a result, a number of measures and initiatives have been implemented to boost the sector. For example, in the 1990s and early 2000s, the country witnessed the privatisation of four large scale palm oil plantations created by government in the early 1960s. The privatisation triggered private foreign investment by multinationals - Unilever, SIAT Belgium and Norpalm Norway – which are exporting part of their products to other countries in the West Africa Region, mainly Togo and Cote d'Ivoire (FAO, 2013). In 2001 Palm Oil became one of the four targeted commodities by the Presidential Special Initiative which was aimed at upgrading the rural industry by empowering smallholders. Other strategic policy documents include the “Food and Agricultural Sector Development Policy” (FASDEPI & II) which was developed in 2002 to modernise agriculture and to increase productivity of the Ghanaian farmer.

In the oil palm industry, availability and affordability of inputs determine the productivity of the smallholder farms. The industry is supported with scientific research and technical innovations (i.e., use of improved/hybrid planting materials, optimal planting distance, soil mineral nutrition, pests, diseases and weed management as well as other scientific cultural and agronomic practices. The Oil Palm Research Institute (OPRI) is the institution fully dedicated to research into oil palm. It is also the only institution that produces seed nuts in the country (Adjei-Nsiah, Zu & Nimoh, 2012). Technical support and extension services are also provided by the Ministry of Food and Agriculture (MoFA).

Financing is another major link in the oil palm supply chain. This is mainly provided to the smallholder farmer through non-governmental organisations (NGOs) and micro-financing groups. With regards to the large establishments, the National Investment Bank (NIB) and the Agricultural Development Bank (ADB) have served as the backbone of the oil palm industry in Ghana. In addition to providing resources directly, they also channel Government and external funding they sourced to the oil palm industry. Ecobank Ghana Limited, Barclays Bank Ghana Limited, Merchant Bank Ghana Limited and Social Security and National Insurance Trust (SSNIT) are other key financial institutions which have provided internal financial support to the oil palm industry over the past 50 years (MASDAR, 2011). External donors and agencies which have funded development of the oil palm industry in Ghana include: Commonwealth Development Corporation, European Union, World Bank, International Finance Corporation, African Development Bank, FMO (Dutch Financing Company) and Agence Française de Développement.

According to MASDAR (2011), all of the government interventions and efforts to

promote the oil palm industry have revolved around the following:

- i. Finding the right strategies to transform small-scale village oil palm farming and palm oil production into more commercial and sustainable cultivation and production;
- ii. Accelerated production of FFB to attract industrial investment;
- iii. Expansion of milling capacities following implementation of programmes which increased FFB supply;
- iv. Improvement in productivity of oil palm plantations and mills of all sizes;
- v. Improvement in FFB and palm oil quality for edible and industrial consumption;
- vi. Improving competitiveness of Ghanaian palm oil in the domestic and international markets;
- vii. Generating regular employment and income through the rapid expansion of the industry;
- viii. Diversification of the structure of the economy which relied on cocoa, gold and timber exported as primary products and raw materials to greater contribution from exports of industrial goods and services. This included import substitution and self-sufficiency in vegetable oil production;
- ix. Growth and development of the capital goods manufacturing sector.

8.3 Constraints and Opportunities in the Oil Palm Industry

Actors in a value chain operate under certain constraints and opportunities which include availability and access to resources, intra and inter firm linkages, availability and use of knowledge and technology, and markets. In addition, the availability and quality of support services in forms of transport, storage and finance can combine in determining the costs and returns at every stage and ultimately defines the profit margins as the product moves along the chain. The Master Plan study on the Oil Palm Industry in Ghana, MASDAR (2011), identified the following strengths and weaknesses within the sector.

Strengths & Opportunities

- i. Growing demand for crude palm oil
- ii. Availability of downstream processing capacity in Ghana
- iii. Growing Demand for Cooking Oil
- iv. Over 500,000 ha of land are available across the country.

Weaknesses & Threats

- i. Ghana is currently a net importer of crude palm oil and olein
- ii. The right duties by importers of vegetable oils are not being paid and there is smuggling and rampant under-invoicing

- iii. Productivity of planting material - Although OPRI is making the effort to develop better planting material, productivity of current planting material produced by OPRI is less than half the 30mt/ha potential achieved in South East Asia and the Pacific.
- iv. Lower capacity utilisation of Local Producers of Vegetable Cooking Oil - Due to the high price of CPO and lower volumes of CPO available locally local producers of vegetable oils are using only 65 per cent of their plant capacity which currently stands at 150,000 mt/annum.
- v. Fluctuations in Crude Palm Oil (CPO) and Fresh Fruit Bunching (FFB) pricing
- vi. Uncoordinated Extension services

8.4 The Case of Twifo Oil Palm Plantation Company Limited

8.4.1 Organisational profile and employment fine Points

TOPP is an oil palm production and processing company which is located at the Twifo Hemang Lower Denkyira District of the Central Region of Ghana. It commenced operations in 1977 with the main aim of being a reliable producer and processor of palm. It is an entity owned jointly by the Government of Ghana which holds 80.46 per cent and the National Investment Bank, State Insurance Company, PZ Company and the Presidential Special Initiative which own the remaining shares. The TOPP has employed 380 permanent workers made up of 50 senior staff and 330 junior staff. A breakdown of the staff according to rank and sex is indicated on the table below.

Table 16: Staff Strength of Twifo Oil Palm Plantations by Rank and Sex

Staff Category	Male (%)	Female (%)
<i>Senior Staff</i>	84	16
<i>Junior Staff:</i>		
Factory Workers	99	1
Field Workers	84	16
Accounts and Administration	47	53

Source: Fieldwork, 2017

The minimum qualification required for a senior staff is a first degree. With the first degree or above, one qualifies to assume the position of a supervisor, a top-level administrator or the managing director. Among the junior staff, the minimum qualification is Senior High School Certificate. Some of the junior staff workers possess Higher National Diploma in various fields such as electrical engineering and mechanical engineering required for work at the maintenance and garage sections. Some of the job specifications for the junior staff workers require an on-the-job training because those specific jobs do not have any direct link with the programmes offered in educational institutions. A case in point is the

work of boiling processors. Under such instance, TOPP only requires any applicant who can read and write, preferably a Senior High School Certificate holder.

Apart from the permanent staff, they employ farm field workers on contract basis. The number of contract workers employed varies according to the seasons. During bumper seasons the company employs about 1,500 field workers but the figure reduces to 800 during lean seasons.

Table 17: Number of Contract Field Workers by Season

Season	Number of Worker
<i>Bumper</i>	1500
<i>Lean</i>	800

Source: Fieldwork, 2017

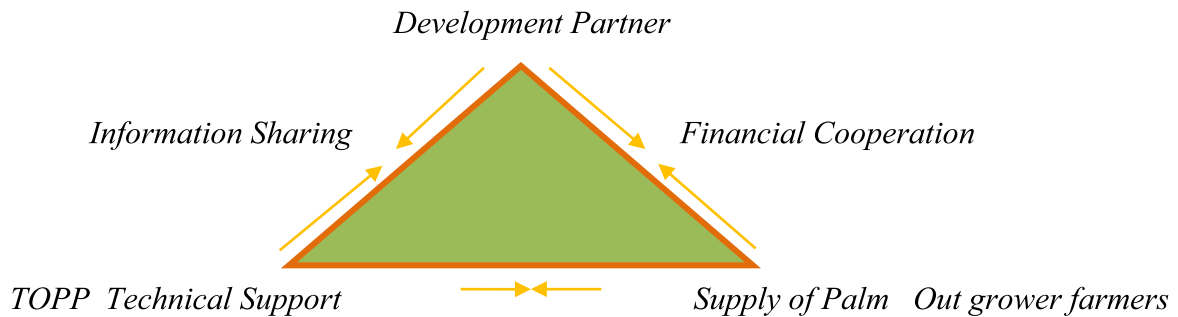
8.4.2 Value chain: The actor network patterns at TOPP

The actor network pattern between TOPP and the actors presents some unique dynamics which occurs at three levels namely the production level, the harvesting level and the distribution level.

8.4.3 Production level: Actor network pattern

At the production level, TOPP currently engages the services of about 1000 small out grower farmers on a 3,300-hectare land. The sole of the out grower farmers is to supply the needed palm for onward processing into palm oil. Due to the low financial strength of the small out grower farmers, financial aid is currently being offered by a development partner who provides credit to the farmers to enable them cultivate the palm in quantities required by TOPP. The credit to the out grower farmers is channelled through the National Investment Bank. To ensure sustained repayment of the loan, TOPP and the development partner have arranged for the National Investment Bank to pay the out grower farmers after they have supplied the palm. The arrangement takes the form where the out grower farmers have their loan repayment instalment deducted from the actual amount supposed to be received for supplying TOPP with the palm. This process continues till the loan is fully repaid. This provides a win-win situation for all the actors in the financial arrangement (farmers and the donors) on the one side and TOPP on the other side because the sustenance and survival of the latter, as an organisation, depends largely on the availability of the palm. TOPP then fills a critical gap in the entire process of sustained supply of palm by providing technical support to the out grower farmers in forms of skill provision and early detection of threats directed toward the efficient utilisation of the land and prevention of fruit losses to ensure optimum production levels. A pictorial description of the palm production linkage is provided on the diagram below.

Figure 24: Tripartite linkages in the palm production regime at TOPP



Source: Authors' own construction (2017)

Figure 24 shows the patterns and nature of relationship between the three actors in the production regime. The diagram shows financial cooperation between the development partner and the out grower farmers with the former being the lender and the latter being the borrower. The relationship between the out grower farmers and TOPP, as depicted on the diagram, shows that while TOPP relies on the out grower famers for supply of palm fruits, the out grower farmers also rely on TOPP for technical support useful for optimum production yield. The relationship between the development partner and TOPP is mostly characterised by the exchange of information about the impact of the roles in the palm production regime on the out grower farmers. In essence, the relationship between and among the actors in the palm production regime could generally be described as a mutually dependent.

8.4.4 Harvesting: Actor Network Pattern

At the harvesting level, TOPP engages contract managers with whom an agreement is signed for the collection of palm fruits. By this contract, the responsibility of harvesting is seen to have been outsourced to private actor which reflects the introduction of public-private partnership in the agro-processing industry. Such an arrangement ensures value for money, and equally introduces some amount of innovation in operation, competition and rapid delivery of services (Bastin, 2003) as well as 'earnings improvement' and 'efficiency' (Kim, Kim & Lee, 2005). Beyond that, the contract manager is usually from the community where the production takes place emphasising the deployment of local service content which provides significant opportunities for employment creation. An extension of the employment creation opportunities for the local people is found at points where the contract managers are given the opportunity by TOPP to employ their labourers to harvest the palm fruits. In terms of remuneration, the labourers are paid from the contract sum received from TOPP by the contract managers. This may raise issues of exploitation which may have to be interrogated since the experiences about outsourcing in Ghana have been occasioned with the denial of some financial benefits due workers. The haulage of the harvested palm fruits is carried out using truck owned by TOPP. On rare occasions some private loaders are involved in the haulage of the harvested palm fruits. This happens only when some of the haulage trucks owned by TOPP have broken down. These private loaders qualify to haul the palm fruits if only they have registered with TOPP. On occasions when private loaders are

involved, the rate to be paid is negotiated between TOPP and the private loaders. By this, TOPP is advantaged or otherwise, depending on the abundance or scarcity of the private loaders. The processing of the harvested palm fruits is carried out under rigorous international specifications to ensure that the quality of the oil produced meet international standards. Besides this, TOPP has 4,000 metric tonnes capacity storage tankers to ensure ready supply of oil palm.

8.4.5 Distribution: Actor Network Pattern

Emphasising international specifications is critical to TOPP's modus operandi because the oil is exported onto the international market but actually distributed solely to Unilever Company Limited for the production of its confectionary products. Even though Unilever purchases 100 per cent of the oil produced by TOPP, the latter is able to meet only up to between 60 per cent and 70 per cent of the former's demand level. This means that a significant scope of market still exists for TOPP to supply palm oil to. By extension there is an opportunity for TOPP to increase its sale volumes and profit margins by balancing the demand-supply variance which currently exists. This will require an expansion in its productive capacities which will eventually serve as an avenue for increased employment scale because more than the current labour force will be needed to translate the opportunity into reality.

8.4.6 Strength, Weaknesses, Opportunities and Threats (SWOT) analysis of TOPP Strengths

One of the strengths of TOPP is its ability to meet international standards for oil palm production. In addition, TOPP has the ability to quickly correct all queries raised about the quality of the palm oil it produces. TOPP also takes strength in the fact that it has staff that are committed to the core values and focused on actualising the mission and vision of the organisation.

Opportunities

The availability of natural resource is a major opportunity for TOPP. TOPP has a very large tract of land. Currently, only 40 per cent of the land available is being used showing greater prospects for expansion of processing site. In addition, any effort directed at increasing the production of palm fruits will be largely successful, with little or no hindrance.

Threats

Labour Turnover

Even though the workers of TOPP are very committed, the degree of commitment of workers is threatened by the location of the company. Even though the location of the company is strategic in lieu of the location's suitability for oil palm cultivation and therefore helping reduce the cost of haulage of palm fruits from the farm to the processing site, the location of the company also serves as a source of disincentive for the workers. This is largely because TOPP is located in a district which lacks the designs of good living such as good

schools and health facilities which one may find at cities such as Accra and Kumasi. The town, Twifo Praso, is yet to experience the culture of urbanism and this serves as a push factor to most of the workers. Workers usually find the town drab. The workers, especially the senior staff, are therefore attracted to work at other organisations located at other places other than TOPP. A clear case in point is the fact that TOPP did not have a medical doctor at the time of the research. This reflects the general labour flow dynamics in Ghana where skilled and qualified workers show preference for cities to rural areas.

The threat of labour turnover among the senior staff also occurs among the junior staff more particularly among the field workers. TOPP consistently loses field workers to illegal mining activities (popularly known as 'galamsey') which have surged up in the Twifo-Hemang Lower Denkyira District, where TOPP is located. The field workers who are mostly young are attracted to the illegal mining activities because they find it more financially lucrative than being an employee for TOPP.

The management of TOPP has indeed acknowledged this challenge and, as a magnanimous response, has provided recreational facilities such as golf course and tennis courts for the staff. A club house and accommodation facilities have also been provided as ways of retaining the senior staff workers, most of whom have migrated from cities such as Accra. However, the field workers and the senior staff do not find these social forms of motivation incentivising enough; their main motivational preference is economic – increase in their salaries – which management has not yet addressed. On this score, the management's inability to raise the incomes of workers remains an enormous hurdle to surmount.

Unfavourable World Market Prices

Apart from labour retention issues, TOPP is grappling with the price fluctuations of palm oil on the world market which places TOPP at a disadvantage. This is because the price of palm oil drops faster rate than it rises. Within the context of economic liberalism, this drop in prices has been due to the global fall in demand for palm oil. Therefore increasing the production levels TOPP to take advantage of Unilever's high demand for palm oil may not be optimally beneficial because the price may reduce further owing to increased supply amidst falling demand. In the face of this challenge, it may require a collective effort among palm oil producing countries directed towards price stabilisation using the OPEC model.

Currency Depreciation

The exchange rate dynamics in a manner in which the cedi has been seen to be depreciating against major foreign currencies has adversely affected the finances of TOPP. The constant depreciation of the cedi against foreign currencies like the Dollar, the Euro and the Pound has increased the cost of procuring some agricultural and agro-processing inputs such as fertilizer, processing machines and equipment and their spare parts. Consequently, this increases the cost of production which eventually reduces the profit margins. This challenge is a reflection of the general trend among Ghanaian business where cedi depreciation and exchange rate volatility remains the third most serious challenge among small and large business and the second most serious challenge among medium scale business as indicated in the Association of Ghana Industries (AGI) Business Barometer Report (AGI, 2016).

Poor Corporate Governance

The activities and prospects of TOPP are being hampered by external political influences. Transfers of power from one government to another have been usually occasioned with changes in the membership in the board of directors of the company. At the time of the research, TOPP did not have a substantive managing director. Such a phenomenon does not create room for continuity since decisions of former board members could be reversed by new ones. In some cases, the implementation of the decisions may be delayed. This may lead to the lack of taking bold decisions necessary for the growth and expansion of TOPP.

Concerns with the Community: Encroachment, Litigation and Theft

In lieu of fact that TOPP currently uses only 40 per cent of its land for its farm and processing activities has leaved a significant portions of the land used and being encroached upon by the residents some of which end up in court litigations. In some instances, TOPP also faces challenges relative to theft of oil palm fruits.

Raw Material Shortages

TOPP sometimes loses some of out-purchase palm fruits to the artisanal mills. The artisanal mills are the small-scale palm processing firms dotted around the community.

SECTION 9: CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

The agriculture sector, a key to the national development agenda, is expected to lead the growth and structural transformation of the economy and maximise the benefits of accelerated growth. Processing of agricultural produce is fundamental to improving food supply and employment creation especially in rural areas. The study provided a comprehensive wealth of data and information on agriculture and agro-processing activities. Key issues, conclusions and recommendations from the study are discussed in the executive summary.

9.2 Recommendations/Further Work

A few recommendations from the study are as follows:

- In future research, there will be the need to address questions around the linkages between farmers, processors, and the logistics and packaging industries within particular value chains. In addition, factors determining the success of domestic firms as well as the type of job creation that is generated by growth in food processing needs to be investigated.
- There will also be the need to examine the factors leading to success or failure of domestic agro-processing firms which should include assessments of the structure of the enterprises, including managerial practices, and their operating conditions. A case study approach could be used to review strategies adopted by small-scale processors for identifying and developing products and understanding their markets.
- Issues related to quality and adherence to standards of agro-processing firms has not been covered in this study. Future studies could examine the choice and sources of technologies, costs of access, patenting, certification, investment requirements, and access to capital. Production practices (including quality and safety) and strategies used for marketing and distributing products need to be explored.
- Results of the IBES show a considerable number of unskilled persons engaged in the non-household establishments, with negative implications for firm productivity. The need to train the workforce to improve upon their skill levels and become more productive is quite imperative.
- Future studies should explore the linkages between the agricultural sector, the agro-processing informal sector and the agro-industrial Sector in order to understand and enhance the role of women.
- To inform the government's policy goals, future research would have to realistically identify a subset of imported products that could offer import substitution opportunities. Besides manufacturing of processed food, trade and the logistics of moving these products to meet market demand will be important to consider when thinking about job creation, given that the majority of non-farm jobs are actually in trade services and are often in informal sector.
- Several instruments for improving the environment for the development of agriculture and agro-processing can be found in Ghana's trade policy. Tariffs and

quotas can be used to ensure fairness in pricing, but not to discourage competition. Fiscal incentives and other forms of direct and indirect support need to be strengthened for capital investments in technology upgrades, and research and development.

- The studies reviewed in this paper contain almost no information on agro-processing training. Follow-up studies should be conducted on training availability.
- Much of the information required for the determination of employment within the various value chains in Ghana could be relatively easily provided via IBES data by GSS. Ready access to this information would be very helpful in the future.
- Urban and peri-urban agriculture have become an important component of Ghana's agricultural programme in and around urban areas. This has been necessitated by the loss of agricultural lands to estate development. Very scanty information exists on the productivity and production of urban and peri-urban agriculture in the country. This is worth investigating in the future.

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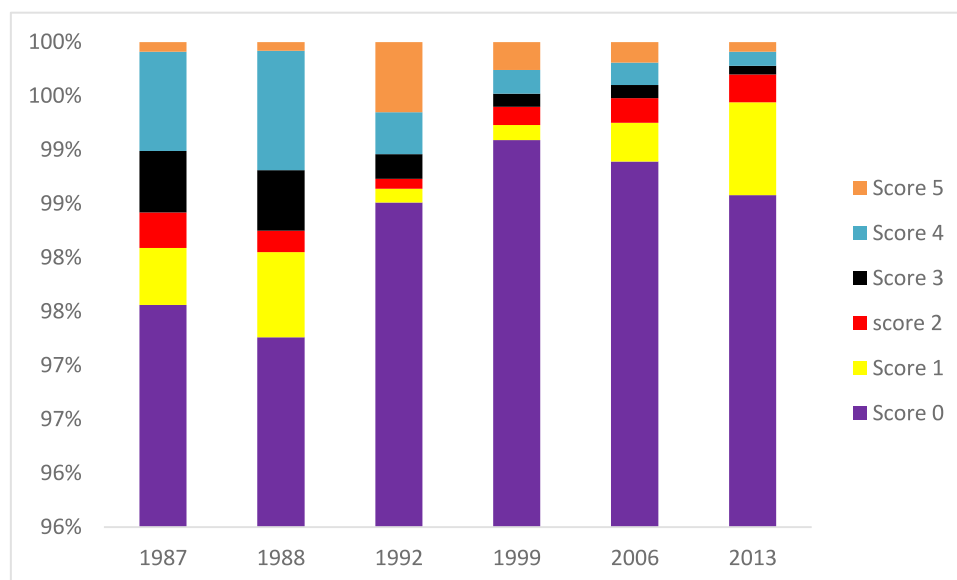
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APPENDICES

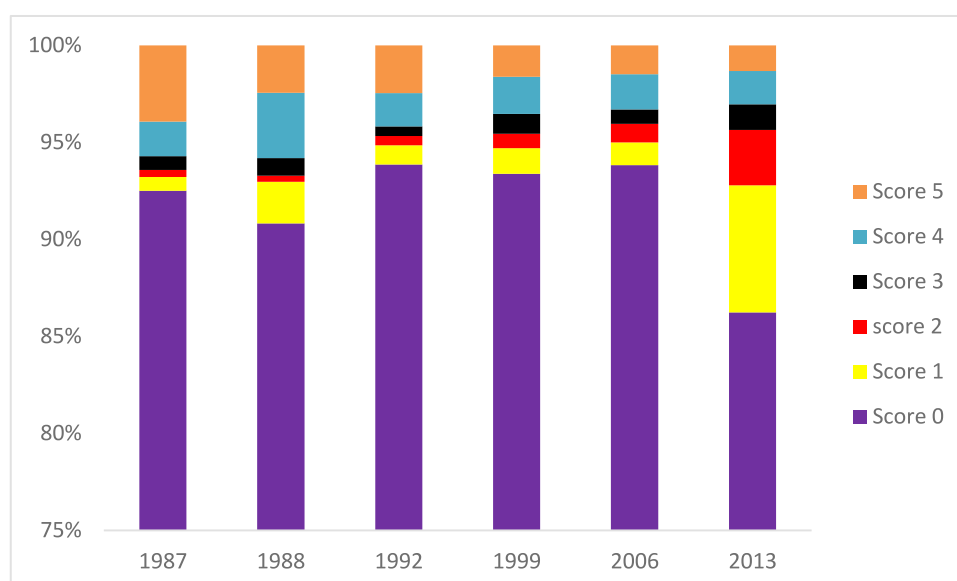
Appendix A

Decent Work by Score for the Agricultural sector



Source: Authors' computation based on GLSS1-6

Decent Work by Score in the Agro-Processing sector



Source: Authors' computation based on GLSS1-6

Appendix B

Description of Ghana SAM accounts

Table 18: Description of Ghana SAM 2005 Accounts

Category	Account (in detailed SAM)	Description	Account (in 13-sector SAM)	Description
Activities	amaiz	Maize	aagr	Agriculture & livestock
	arice	Rice		
	asorg	Sorghum and Millet		
	acass	Cassava		
	ayams	Yam		
	acyam	Cocoyam		
	acpea	Cowpea		
	asbea	Soybean		
	apoil	Palm oil		
	agnut	Groundnuts		
	aonut	Other nuts		
	afrud	Domestic fruits		
	afrue	Export fruits		
	avegd	Domestic vegetables		
	avege	Export vegetables		
	aplan	Plantain		
	acoco	Cocoa	acoco	Cocoa
	aacro	Other crops	aagr	Agriculture & livestock
	aoexp	Other export crops		
	achik	Chicken broiler		
	aeggs	Eggs		
	abeef	Beef		
	agoat	Goat and sheep		
	aoliv	Other livestock		
	afore	Forestry	afore	Forestry
	afish	Fishery	afish	Fishery
	amine	Mining	amine	Mining
	aforf	Formal food processing	amanu	Manufacturing & Industry
	alocf	Local food processing		
	acopr	Cocoa processing		
	adair	Dairy products		
	ameat	Meat processing		
	atext	Textiles		
	aclth	Clothing		
	afoot	Footwear		
	awood	Wood products		
	apapr	Pulp and paper		
	apetr	Petrol		
	adies	Diesel		
	afuel	Other fuel		
	achem	Chemicals		
	ametl	Metals		
	acapt	Capital goods (machinery etc)		

Table 18: Description of Ghana SAM 2005 Accounts – continued

Category	Account (in detailed SAM)	Description	Account (in 13-sector SAM)	Description
Commodities	acons	Construction	acons	Construction
	awatr	Water	awatr	Water & electricity
	aelec	Electricity		
	atrad	Trade	atrad	Trade, restaurants, hotels
	aosrv	Other services		
	atran	Transport	atran	Transport & communication
	aconum	Communication		
	abusi	Business services	abusi	Business, real estate
	areal	Real estate		
	acsr	Community services	acsr	Community services
	aadmn	Public administration	apubl	Public services
	aeduc	Education		
	aheal	Health		
	cmaiz	Maize	cagr	Agriculture & livestock
	crice	Rice		
	csorg	Sorghum and millet		
	cogr	Other grains		
	ccass	Cassava		
	cyams	Yam		
	ccyam	Cocoyam		
	ccpea	Cowpea		
	csbea	Soyabean		
	cpoil	Palm oil		
	cgnut	Groundnuts		
	conut	Other nuts		
	cfrud	Domestic fruits		
	cfrue	Export fruits		
	cvegd	Domestic vegetables		
	cvege	Export vegetables		
	cplan	Plantain		
	ccoco	Cocoa	ccoco	Cocoa
	cocro	Other crops	cagr	Agriculture & livestock
	coexp	Other export crops		
	cchik	Chicken broiler		
	cegs	Eggs		
	cbeef	Beef		
	cgoat	Goat and sheep		
	coliv	Other livestock		
	cfore	Forestry	cfore	Forestry
	cfish	Fishery	cfish	Fishery
	cmine	Mining	cmine	Mining
	cforf	Formal food processing	cmanu	Manufacturing & Industry
	clocf	Local food processing		
	ccopr	Cocoa processing		
	cdair	Dairy products		

Table 18: Description of Ghana SAM 2005 Accounts - continued

Category	Account (in detailed SAM)	Description	Account (in 13-sector SAM)	Description
	cmeat	Meat processing		
	ctext	Textiles		
	cclth	Clothing		
	cfoot	Footwear		
	cwood	Wood products		
	cpapr	Pulp and paper		
	coils	Oil		
	cpetr	Petrol		
	cdies	Diesel		
	cfuel	Other fuel		
	cfert	Fertilizer		
	cchem	Chemicals		
	cmatl	Metals		
	ccapt	Capital goods		
	ccons	Construction	ccons	Construction
	cwatr	Water		Water & electricity
	celec	Electricity	celec	
	ctrad	Trade	ctrad	Trade, restaurants, hotels
	cosrv	Other services		
	ctran	Transport	ctran	Transport & communication
	ccomm	Communication		
	cbusi	Business services	cbusi	Business, real estate
	creal	Real estate		
	ccsrv	Community services	ccsrv	Community services
	cadmn	Public administration	cpubs	Public services
	ceduc	Education		
	cheal	Health		
Factors	labself	Self-employed labor	labself	Labor
	labunsk	Unskilled labor		
	labskill	Skilled labor		
	capa	Agriculture-specific capital	cap	Capital
	capn	Other capital		
	land	Land		
Households	hrur	Rural households	hhd	Households
	hurb	Urban households	hurb	
Government	gov	Government	gov	Government
Taxes	dtax	Direct taxes	tax	Taxes
	stax	Sales and other indirect taxes		
	mtax	Import tariffs		
	etax	Export taxes		
	s-i	Savings and investment	s-i	Savings and investment
	row	Rest of world	row	Rest of world

Source: Adapted from IFPRI (2007)

Appendix C

Key Informants Interviewed

1. Francis Mensah, Head of National Accounts, Ghana Statistical Service
2. Dr. Mawuli Gaddah, Head of Economic Research and Forecasting Division, Ministry of Finance and Economic Planning
3. Mr. Kwame Kesse-Agyepong, Senior Investment Promotion Officer
4. Mr. Nasir Ahmed Lartey, Deputy Communications Manager
5. Director of Housing, Ministry of Water Resources, Works and Housing
6. Director, Policy Planning, Monitoring and Evaluation
7. Anthony Krakah, Head of Industrial Statistics Unit
8. Ms. Charlote, Deputy Director, Agribusiness Unit, MoFA
9. Derick, Agribusiness Unit, MoFA
10. Dr. Kwabena Otoo, Director, Labour Research and Policy Institute
11. Mr. Phanuel Senyo Sokro, Head of Human Resources, Twifo Oil Palm Plantations
12. Informant, Sales Representative, Ameen Sangari Limited
13. Madam Margaret, Owner, Graceland Artisanal Mills, Twifo Praso

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