

Agriculture Sector in Ghana Review

10/5/2020



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Israel's Trade and Economic mission to Ghana

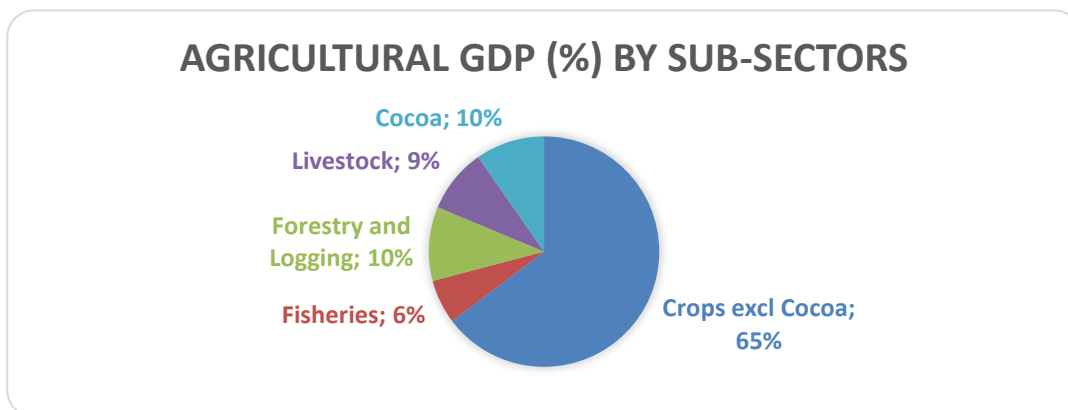
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General Figures

Agriculture contributes 19.7% of Ghana's current GDP, accounts for over 30% of export earnings and serves as a major source of inputs to our manufacturing industry. In 2019, 33.5% of labor force in Ghana was absorbed by the agriculture sector. Agriculture is the second largest employer in the economy but the smallest sector in comparison to services and industry. The agriculture sector grew from 2.9% in 2016 to 6.1% in 2017, recorded a growth of 4.8 in 2018 and it is projected to grow at 6.9% in 2019. The agriculture value added that is the net output of the sector from 2018 is 11.98 billion USD. As so, agriculture is viewed by many as a key factor in Ghana's economic growth and development process.

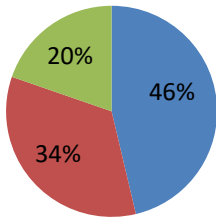
Ghana has a total land area of 238,539 km² of which 57% of it representing about 136,000 km² is classified as "agricultural land area" out of which 58,000 km² (24.4 %) is under cultivation and 11,000 hectares under irrigation. The agriculture sector in Ghana is very informal hence; there is no high quality official data available. Ghana's agriculture is predominately smallholder farmers (80%), traditional and rain fed.

Agriculture sector is usually divided into 4 subsectors, which are crops (including cocoa), livestock, forestry and logging & fishing. Ghana's main agricultural commodities include Cocoa (beans), yam, cassava, plantain, maize, groundnuts, cocoyam, rice, oil palm, tomatoes, pepper, oranges, onions, sorghum and pineapples. For further information regarding Ghana's most common crops please, see appendix 1. Production of food crops by smallholders has increased in recent years, but is still characterized by low productivity due to a number of factors such as poor extension services, aging farmers and lack of finance for investment in better inputs. The extension officer to farmer ratio stands at 1:706 as compared to FAO standard of 1:500. Ghana is a net importer of agricultural products, importing mainly consumer-ready commodities such as rice, wheat, sugar and poultry.



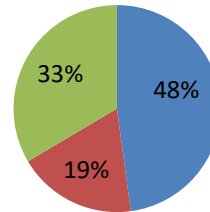


Agriculture contribution to GDP



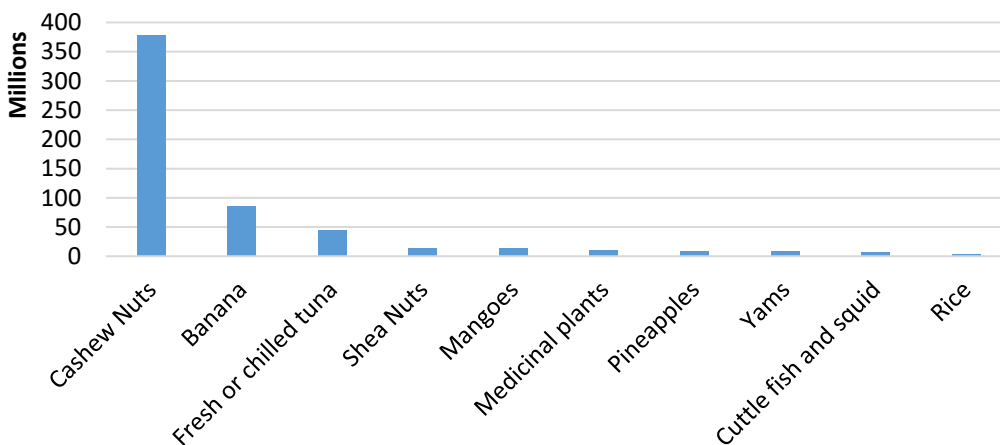
■ Services ■ Industry ■ Agriculture

Employment per sector

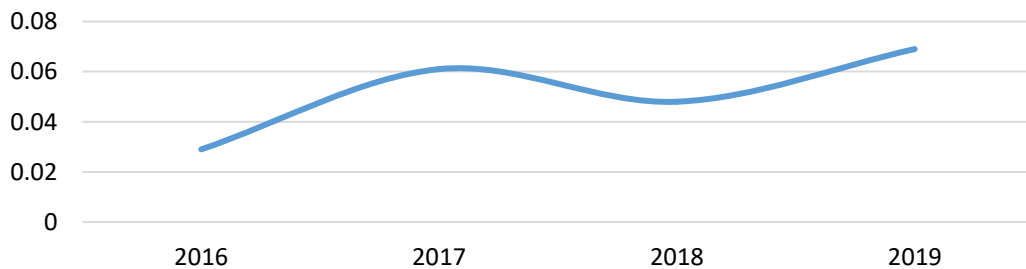


■ Services ■ Industry ■ Agriculture

Top 10 Performing Non-Traditional Exports(USD)



Agriculture sector growth



Government Agencies Responsible for Agriculture

Responsibility for agricultural policy development and implementation is spread across a number of agencies. MOFA is the lead ministry for the agricultural sector, responsible for non-cocoa crops and livestock. COCOBOD is responsible for cocoa, coffee and shea nuts. The Agricultural Research Institutes of the Council for Scientific and Industrial Research (CSIR) under the Ministry of Environment, Science, and Technology and Innovation (MESTI) and other agencies in the National Agricultural Research System (NARS) are responsible for agricultural research.

Government Interventions

Planting for Food and Jobs - The Government's agriculture modernization program is aimed at improving production efficiency, achieving food security and profitability for farmers, and significantly increasing agricultural productivity as the basis for industrialization, job creation and export. Government has increased subsidies on retail prices of seeds, fertilizers and other agrochemicals, and it is focusing on developing irrigation schemes, facilitating the provision of community owned and managed small-scale irrigation facilities across the country, especially in northern Ghana, through the "One Village, One Dam Policy", and improving the extension officer to farmer ratio. Planting for Food and Jobs (PFJ) works through the following modules; Food Crop Production; Planting for Export and Rural Development (PERD); Rearing for Food and Jobs (RFJ); Greenhouse Technology Development as well as Mechanization for Food and Jobs.

One District – One Factory Initiative - One District One Factory Program is addressing the challenge of slow economic growth at the district level through a massive nationwide industrialization drive, which is equipping and empowering communities to utilize their local resources in manufacturing products that are in high demand both locally and internationally. This is to allow the country to reap the well-known rewards of industrialization, such as gains in efficiency in every facet of life in our society, increase the agricultural and manufacturing output, a reduction in the reliance on imports and increase in the production of consumer goods and food availability. The program is expected to facilitate the creation of between 7,000 to 15,000 jobs per district and between 1.5 million and 3.2 million jobs nationwide by end of 2021. Currently 45 factories are currently operating under this initiative and 136 are in various phases of constructions.

National Development Bank- The National Development Bank (yet to be setup) as envisioned will refinance credit to industry and agriculture as a wholesale bank; and also provide guarantee instruments to encourage universal banks to lend to these specific sectors of the economy. The National Development Bank (NDB) will be an independent institution with strong corporate governance framework; and would be globally rated to enable it leverage foreign private capital for industrial and agriculture development in the country. The Government will also provide periodic dedicated funds for intervention in key areas of the economy such as large-scale agro processing, housing, through various schemes and funds as needed for economic and social development and jobs. It is expected that the National Development Bank will provide

cheaper and long-term funding for the growth and expansion of key companies operating in the agriculture and industry sectors.

Developmental Agencies Interventions

There are many development programs in the agriculture sector, and a fair amount of money is invested by different NGO's and development partners in order to enhance productivity and grow capacity of farmers. That is mostly done by: training programs, Infusion of technology through financing schemes, and different methods of support, mostly smallholder farmers in Ghana. Among the strong players in this arena one should consider: GIZ, USAID, Danida, SNV, World Bank, African Development Bank, AGRA, FARA and AFAP.

Challenges in the Agriculture Sector in Ghana

- **Poor Financial Support** - Access to financing is vital for the growth of the agriculture sector in Ghana, mainly for working capital such as acquiring inputs (seedlings, farm fertilizer) and for hiring labor, as well as for fixed capital acquisition such as machinery. The absence of financing limits the average acreage of cultivated farmlands and thereby, impedes agricultural growth with consequences for the macro economy as a whole. In Ghana, the financial sector players involved in agricultural financing include banks, rural banks, Savings and Loans Companies and Microfinance institutions. These players consider agriculture as high risk since there are uncertainties within the agriculture sector such as changing climate conditions, unstructured markets and unreliable supply chains hence give out monies to agriculture players at high interest rates which becomes unaffordable for the farmer.
- **Poor transportation and storage facilities** – Road, transport and storage infrastructure for the movement and storage of agricultural commodities and inputs are inadequate. This limits the potential of the sector and the country does not realize its full benefits. It leads to loads of post-harvest losses and does not favor the manufacturing industry to use agro-produce as inputs.
- **Lack of information/data** – Data is a big influence in decision-making especially in agriculture. Data can help farmers know when, what and how to farm for the whole year. The agriculture sector in Ghana has no centralized structured data accessible for all. Data in the sector is fragmented and not easy to get hence many people in the sector take wrong decisions, which could have been prevented. This also affects private sector investment in the sector. The lack of reliable information has also affected the market structure of the sector. Farmers and other stakeholders do not get fair prices for their goods.
- **Inadequate agriculture extension services**- The extension officer to farmer ratio stands at 1:706 as compared to FAO standard of 1:500. This means most farmers are not updated with current trends of farming and do not get the timely intervention if there is a pest or disease attack on their farms. This situation leads to low production since the farmers would use their crude ways of farming which in turn affects the fertility and longevity of the soil.
- **Low mechanization/poor adoption to technology** – Generally farmers in Ghana are slow to adopt to new technologies because they are not exposed to it or cannot trust how well it would affect their production. New technologies like resilient seeds and other mechanical farming equipment took a while

before farmers adopted to it and after realizing the benefits they are stuck to it. The difficulty for farmers to adopt new technologies has led to situations like over reliance on rain to support plant growth and not cultivating huge hectares because they still use hoes and cutlass for farming.

- **Land Tenure systems** – The Ghanaian land tenure system does not foster commercial farming. This is because the land tenure system is not controlled by central government but by chiefs, families and other communal structures that takes one through a frustrating to acquire land. This inhibits people with the aim of doing large-scale farming hence; we are stuck with smallholder farming systems.

Opportunity in the Agriculture Sector in Ghana

- Farmers who received weather insurance spent more on inputs than those who received cash grants hence integrated weather insurance packages rather than cash support is needed.
- **Climate resilient/adaptable technology in all areas** – Due to the changing climate situation it is becoming very difficult for farmers who rely on rainfall to predict planting seasons hence all forms of climate resilient or adaptable technology in agriculture is welcomed.
- **Poultry feed and fish feed preparation machines** – Most farmers prefer to prepare their own feed per the recipe they consider best for the livestock but are not able to do so in large quantities hence would prefer to have machinery to prepare feed onsite.
- **Cocoa bean preparation for export and processing for local confectionary sector** – Cocoa farmers go through a tedious natural process to get their beans up to standard for export. Any technology to catalyze the process would be adopted. Processing machines are also needed to process the cocoa into confectionaries, which is large market in Ghana.
- **Smart seedling growers** – Farmers find it tedious and expensive to grow seedlings to replace aging plants hence technology, which can grow seedlings in cost-effectively, and timely manner would be adopted.
- **Shea processing** – Due to the international demand for processed shea there is an increasing demand for effective shea processing technologies.
- **Smart fruit disinfectant and conditioning** – Exported fruits like mangoes have high regulatory standards hence farmers want the aid of technology to properly grow, disinfect, harvest and condition the fruits for export in order to meet the standards for purchase internationally.
- **Small-scale irrigation** – Most farms would take up small irrigation setups that can help them grow all year round.
- **Facilitate commercial livestock farming** – Ghana does not have enough commercial livestock farms especially in ruminants and poultry considering the imports and meat needs of the population. With the aid of technology, most smallholder farms can increase their production levels to commercial sizes.
- **Rice farming** – Huge importation of rice has clearly shown that Ghana has to increase her output for rice. Technology in this field in any area of the rice value chain would easily be adopted.

- **Aquaculture** – Aquaculture is gradually increasing in Ghana but it is still not done in a modern way hence it has high incidence of infection and waste. Technology to increase output and minimize huge operational cost would be adopted.
- **Fertilizer** – Fertilizer needs of farmers in Ghana is on the rice especially organic ones. Technology to aid the local production of fertilizers to price competitive with foreign ones would be taken on board.
- **Grains moisture** – Cereals especially maize have serious issues with moisture content when in storage hence technology to manage and measure moisture for grains would easily be adopted since it affects its quality and price value.
- **Agrochemicals for preservation** – Technology that can help preserve harvested food crops in storage naturally would be taken on board by agriculture stakeholders.

Barriers to market entry

- High interest rates from bank makes investment in agriculture very difficult.
- Most of the sector is smallholder farms that are very price sensitive and hard to reach.
- Lack of reliable data.
- Low adoption rates of new technologies by Ghanaian farmers and other players.
- Poor adherence to regulations.
- Lack of infrastructure such as roads and storage houses

Important tips for Agrotechbolgy Israeli companies looking to do business in Ghana

- **Start small and build up**- should be willing to start small and grow, the Ghanaian farmers needs time to gain trust in your product.
- **Build demand before going for an agent** -be willing to start selling small direct sales, give out samples.
- **Keep it simple**- Do not ask farmer for needs- give a few options (1-2 for solutions) then later you can add on based on the needs.
- **Design your Solutions for small-scale farmers**- (green house, irrigation systems, aquaculture)
- **Keep it affordable**- good pricing, with financing options, modular solutions.

Main Agriculture Events in Ghana & West Africa

- **National Farmers day and awards** – The national farmer’s day and awards is a weeklong string of activities and concluded with an awards event where a person is awarded as the national best farmer. It is organized by the Ministry of Food and Agriculture on the first Friday of December every year. That day is a statutory holiday to honor the hardworking farmers of Ghana. Each year a different regional

capital host the event. <http://mofa.gov.gh/site/media-centre/upcoming-events/271-35-national-farmers-day-celebration>

- **Annual pre-harvest agribusiness exhibition** - This event seeks to strengthen the capacity of farmer-based organizations and aggregators to play key roles as agricultural marketing actors. <http://agricinghana.com/2019/07/09/9th-pre-harvest-agribusiness-exhibitions-and-conference/>
- **Livestock, poultry and fisheries trade shows** - The LiPF initiative aims to showcase and promote the country's livestock, poultry and fisheries production, value chain and job opportunities through exhibitions and training programs that runs concurrently during the 3-day conference. The event attracts about 500 participants from across the African region. <https://agricinghana.com/2019/07/01/press-release-livestock-poultry-and-fisheries-trade-show-lipf-2019/>
- **Agro Invest Summit** (organized by Nigerian government in London) – This summit facilitates investment and financing opportunities across the agricultural value chain in the continent, provide impactful presentations, panel discussions and interactive sessions to promote debate and discussion about investment challenges and topical issues including innovative technologies, sustainability and financing in agriculture. It creates business collaborations and partnerships that shape the future of African farming. <http://agroinvestmentsummit.com/>
- **SEEDLINK** – It is the premier and exclusive seed event in Ghana aimed at unlocking investment opportunities and addressing constraints that inhibit the seed industry's growth. <https://nastag.org/event/seedlink-2020/>
- **AGRITECH West Africa** – This is where global agriculture technology suppliers meet West African Agriculture Business Community in Ghana. <https://www.agritechwestafrica.com/index>
- **Agrofood West Africa** – It is a Trade Show on Agriculture, Food Processing & Packaging, Ingredients and Food & Hospitality for West Africa. <https://www.agrofood-westafrica.com/>
- **AGRF** - The African Green Revolution Forum (AGRF) is considered the world's premier forum for African agriculture, bringing together stakeholders in the agricultural landscape to take practical actions and share lessons that will move African agriculture forward. <https://agrif.org/>

For any further information, please feel free to contact our team:

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Appendix

Appendix 1: Subsectors information

Crops

Crops are grown in a wide range of climatic zones from dry savannah to wet forest. The main staple food crops are maize, yams, cassava, rice, taro (cocoyam), plantain and other root crops. The crops are classified under 6 categories namely industrial crops, starchy, tuber & root crops, cereals, legumes, fruit and vegetables.

Industrial Crops

Cocoa

Ghana is the second largest producer of cocoa in the world with a 2019 production of 850,000 tons. Cocoa provides the second largest source of total export earnings, representing 30% of GDP. Ghana Cocoa Board (COCOBOD) determines the domestic buying price of cocoa beans and the purchasing season as a way to monitor and regulate the operations of the cocoa industry in Ghana. COCOBOD currently purchases a ton of cocoa at GHS 8,240 (GHS 515 per bag). Cocoa is grown in the Ashanti, Eastern, Western, Western North, Ahafo, Bono, Bono East and Volta regions represented by families, communities or cooperatives. Cocoa is mainly processed for export but there is a relatively small domestic market for Ghanaian finished cocoa products. This is predominantly supplied by Golden Tree (the Ghana Cocoa Processing Company for confectionary and cosmetic products), Nestle and Unilever (chocolate and drink products).

Coffee

Ghana is the third largest coffee producer in sub-Saharan African just behind Liberia and Central Africa Republic. Ghana produced 735 tons of coffee in 2018. Coffee is grown Ashanti, Bono, Ahafo, Eastern, Central and Volta regions of Ghana. Coffee yield in Ghana was estimated at 2.0 tons per hectare in 2014. 12,250 tons of green coffee was exported in 2015 and currently there is 65% supply deficit that needs to be filled. Through effective regulations and stakeholder, engagements, average farm gate price of coffee rose from GHS 40 per 65kg in 2010 to GHS 250 per 65kg in 2016. In addition, under good farm management practices, an average net income of about GHS 6, 988.30 (US\$ 1,767.50) per hectare is estimated to be obtained by the farmer. Currently, there are thirty (30) Licensed Buying Companies (LBCs) registered to engage in internal purchasing and exports of coffee in Ghana. There are about 10 major roasters of Coffee in Ghana. Regulatory bodies for the coffee industry are COCOBOD, CRIG and International Coffee Organization.

Shea

The Shea Industry in Ghana is as old as the cocoa industry. Northern Ghana is the farm belt of shea and its products. The shea industry is currently dominated by women and children who pick and process shea into nuts for sale directly, or as butter on a small scale. The industry is currently assuming a large scale commercial status with the advent of large scale shea (nut and butter) buyers and exporters who have in recent years discovered the high value of shea on the international market and are cashing in on it as quickly as possible. Ghana is currently collecting 130,000 metric tons of shea nuts but has the capacity to do 200,000

tons. Ghana recorded USD 33,572,000 in value of exported processed or industrial shea nuts. The most active stakeholders in the shea industry are Civil Society Groups comprising the Shea Dealers Associations in all the regions of Northern Ghana, individuals as well as NGOs such as SNV, a Dutch Development Organization, TechnoServe, a US-oriented Food Security organization, the Association of Church Development Projects (ACDEP) and its subsidiary, Savanna Farmers Marketing Company, Ghana Nuts and PBC.

Oil Palm

Oil Palm is the most important edible oil crop in Ghana and in the whole West Africa region. Oil Palm and palm kernel oil represent 2% of total agricultural production value of Ghana. Ghana exported USD 71.3 million worth of oil palm in 2018. The most suitable areas identified for oil palm cultivation are Western, Central and Eastern regions. Large nucleus estates are sited in these regions. The total area under oil palm cultivation is 300,000 hectares. The average yield is 6.3 tons. Major exporters of Crude Palm Oil are Wilmar Africa Ltd, Avnash Industries Ghana Ltd, Praise Export Services Ltd, Ghana Oil Palm Development Company Ltd etc.

Coconut

Ghana is endowed with the ideal climatic conditions for increased production of coconut for both the domestic and foreign markets. It is usually grown in smallholder plantations in the 8 out of the 16 regions of the country. Total annual production of coconut currently stands at approximately 229 million pieces of coconuts, equivalent to between 350 and 400 thousand MT (2017). Currently the majority of coconut is consumed domestically, within Ghana. However there is currently a deliberate effort by the Ghana Government to promote expansion of the acreages under coconut cultivation to take advantage of the increasing demand in the international markets. Ghana made about USD 1,808,718 in exports of dried or fresh coconut. Coconut is also processed for its oil and shell used for charcoal. Local processors of coconut are Zaaccoal, Makola coconut oil and GKV investments.

Cashew

The Bono, Ahafo, Bono East regions accounts for about 90% of cashew production and exports in Ghana. Ghana controls 43.8% of global in shell cashew exports. Ghana produced about 70,000 metric tons in 2016. Cashew exports earned the country USD 981 million in 2016. There are about 13 processing companies in Ghana with an installed capacity of 35,000 metric tons per year but they process less than 10% of cashew produced in Ghana because farmers claim they get more value in selling raw cashew on the international market than selling it to local processors. The Kristo Buase monastery is the largest cashew plantation.

Rubber

Ghana has 19,000 hectares of rubber plantations, including 12,000 hectares of industrial plantations. Out of the 7,000 are village plantations and 3,600 are recently planted plantations. Current production stands at some 12,000 tons a year, ranking Ghana in fifth position in Africa. Ghana Rubber Estate Limited (GREL) is the rubber production company that owns the largest industrial rubber plantation of the country, controlling 98 percent of the domestic rubber market. It holds a 36-year concession on 15 000 ha, of which 9,034 ha are under tapping (of 13,377 ha are planted). GREL's processing plant produces 15 MT dry rubber content (DRC) of rubber per annum with 5 TM DRC coming from out growers.

Cotton

The production of cotton in Ghana covers the 5 northern regions and part of Bono and Ahafo regions specifically, Kintampo and Attebubu areas. It is purely done by smallholders (peasant) and an out grower system, typically featuring a farmer and his household. Cotton production has dropped drastically from 45,000 tons in 1998 to 13,000 in 2017 hence contributing very little to our GDP.

Starchy, tuber & root crops

Cassava

Cassava is easy to grow but low in nutritional value; however, recent interest in using cassava in beer production is shifting its status as a food security crop. Cassava, a starchy root crop is Ghana's most highly produced crop and one of the main staple foods contributing to 22% of Ghana's agricultural GDP.

Apart from the Upper East and Upper West regions that have no cassava production presumably due to its vegetation, cassava is cultivated in all the remaining regions especially in the Eastern (27%), Bono, Bono East & Ahafo (20%), Ashanti (18%), Central (14%) and Volta regions.

However, production is small-scale-based because farmers' prefer selling cassava to the traditional food market. Currently cassava is being used as a raw material in the brewery industry and in 2014, Guinness Ghana Limited (GGL) and Accra Brewery Limited (ABL) purchased a total of 801,946.32 metric tons of raw cassava at a value of GH¢1,593,680 from farmers in some selected districts. Some registered cassava processing projects at GIPC include; B-Bovid Ltd, Caltech Ventures Ltd, Dadtco Cassava Processing Ghana Ltd, Gafco Cassava Processing Ltd, Greto Ltd, Jocheck Ltd.

Yam

Ghana is the second largest producer of yam in West Africa producing averagely 8 million tons yearly and the main production areas are Northern, Brong Ahafo, Upper West, Eastern and Ashanti regions. Ghana earned about USD 27.5 million in 2016 from yam export. Major exporters of fresh yam are as follows; Dhillion Farms Int. Ltd, K. Laast Co. Ltd, Fighan Farms Gh. Ltd, Tahiti Trading Enterprise, Abdulai Enterprise, Prudent Export & Import Co. Ltd and Touch Skies Ghana Ltd.

Plantain

In Ghana, plantain is ranked third after yam and cassava in the food crop sector (FAO, 2006) and contributes about 13.1% of the Agricultural Gross Domestic Product and its per capita annual consumption of 101.8 kg per head (FAO, 2006) is higher than other starchy staples except cassava. Annual production in the country is about 2.0 million metric tons for plantain (FAO, 2006) of which only 0.5 tons is exported at a value of USD 30 million (bananas inclusive). Ghana is the highest producer of plantain in West Africa and third in Africa. Small holders and cooperatives grow plantain mainly in the Ashanti, Eastern and Bono & Ahafo regions.

Cereals

Maize

Maize is the most important cereal crop on the domestic market in Ghana. It is one of the largest agricultural commodities in terms of production volume. It accounts for 3.3% of total agricultural production volume. Maize accounts for 55% of grain output followed by paddy rice (23%), sorghum (13%) and millet (9%). Maize is also important for poultry feed as well as a substitute for the brewing industry. Maize is cultivated under traditional production methods and rain-fed conditions. Average yield of maize (on farm) for the year 2015 was 1.92mt/ha but the potential yield was 5.50mt/ha. Maize is grown throughout Ghana. However, the leading producing areas are mainly in the middle-southern part (Bono & Ahafo, Eastern and Ashanti regions) where 84% of the maize is grown, with the remaining 16% being grown in the northern regions of the country. Ghana currently does not import a single grain of maize for her consumption.

Rice

Rice is the second most important grain food staple in Ghana, next to maize (MOFA, 2015). Rice import accounts for 60% of Ghana's cereal imports over the period 2005-2016. Thailand and Vietnam are dominant rice exporters to Ghana. Rice production in Ghana is undertaken in three different ecologies: lowland rain-fed ecology, which includes rice planted in the receding waters of the Volta and other rivers (78% of production), upland rain-fed ecology (6%), and irrigated ecology (16%). Rain-fed rice production contributes 84%, generating average paddy yields of 1.0 -2.7 mt/ha while irrigated production produces the highest average of 4.5 mt/ha. The potential yield was 6mt/ha in the year 2015. Avanaash is the largest miller of rice in Ghana. There are large rice farms like Gadco and smallholder farms. Aggregators buy the rice from smallholders and sell to the millers. One of biggest aggregators is Lasorex Ltd.

Sorghum

Sorghum production is concentrated mainly in the Northern Regions of Ghana some parts of Bono & Ahafo (mainly the transitional zone) and the Volta Region. The northern regions account for over 97 percent of total production. Small farmers with average land holdings not greater than 2ha mainly cultivate sorghum. Amongst the cereal crops grown in Ghana, sorghum ranks third in terms of production volume, after maize and rice, with a share of 13% on total cereal production volume. Average yield (on farm) of sorghum cultivation under rain-fed conditions is 1.10mt/ha for the year 2015. Potential yield for the year 2015 was 2mt/ha. About two-thirds of raw sorghum are milled and used to prepare food as well as local beer. Sorghum brewing is an important cottage industry in northern Ghana. Sorghum is traded mainly in the northern part of Ghana and hardly traded internationally.

Legumes

Soybeans

Soybean is a relatively new crop in Ghana and mainly used by farmers for crop rotation with maize. Smallholders under traditional production farming practices and rain-fed conditions primarily cultivate the crops. Annual soybean production is estimated to be 142,000 MT (for the year 2015), which is relatively high in West Africa. The favorable production area is thought to be in the northern part of Ghana, but yield is still far below the achievable target of 3 MT/ha under rain-fed cultivation, and the post-harvest loss is high.

Groundnut

Groundnut is an important crop in Ghana as well as in other Sub-Saharan Africa countries. Nuts can be consumed raw or cooked and is used in the production of edible oil. Regions in the north account for 94% of Ghana's total production. Consumption is mostly in the urban areas in the south. The marketing of groundnuts in Ghana has been under the traditional marketing system.

Fruits

Pineapple

Pineapples are the leading horticulture export product of Ghana. In 2004 exports peaked at 71,200mt representing 10% of the market share. However, the emergence of MD2 variety on the export market and the shift of consumer demand from smooth cayenne to MD2 brought serious challenges to the sector. The MD2 has more demanding agronomic practices than the smooth cayenne variety. As a result, the sector suffered great losses leading to a reduction in total pineapple exports revenue from USD25 million in 2012 to USD 17million in 2014. In 2015, pineapple export revenue was USD 20,539,000. Main Markets are Germany, Holland, UK and Belgium. The strengths of the pineapple industry are that the industry has 20 years of experience in pineapple cultivation, suitable land available, large pool of labor available, newly installed pack houses etc. Major exporter of pineapple in Ghana is Ekumfi Pineapple Farm.

Mango

It is estimated that Ghana has over 10,000 acres under mango production, which produces about 15,000mt. Out of this, less than 40% is exported. Ghana exported about 4,700 tons of mangoes in 2016. Leading importing countries of Ghana's mangoes include UK, Netherlands and Germany. The strength of the mango value chain includes; new farms being developed, two mango seasons in a year and preferred varieties abound (i.e. keitt and kent). Major exporters are Eve-Lyn Farms and Samviver Royal Ventures.

Vegetables

The emergence of a large middle class and an increasing number of consumers are demanding a higher quantity and quality of fresh produce. Consequently, the domestic vegetable-market alone is growing at more than 10 % per year. For local consumption, the most important vegetables are tomatoes, peppers (both sweet and hot) and onions. Meanwhile, Ghana's vegetable sector also exhibits a high potential for exports. The potential value for the export of vegetables is estimated at USD 50 million. However, current export of vegetables stands at only USD 8 million as producers fail to comply with international food safety regulations. While traditionally, fruits like pineapples, bananas and mangoes were the main horticultural export crop, chilies and Asian vegetables are gaining in popularity. There are about 1,500 vegetable exporters under the umbrella of Vegetable producers and Exporters Association of Ghana (VEPEAG). Notable vegetable producers and exporters are AB Farms, Eden Tree and Srighan Farms.

Livestock

The livestock sector accounts for almost one-third of the value added of African agriculture. Coupled with the current demand for meat, it is likely to significantly increase in the coming decades. The livestock sector in Ghana, contributes on average an estimated 7% to Agricultural Gross Domestic Product (GDP), hence it makes a significant contribution to overall Agricultural development. The per capita consumption of livestock products in Ghana is 6.7%. Livestock is defined to include ruminants (cattle, sheep and goats),

pigs. Poultry (chicken, guinea fowl, ducks, turkey, ostrich, etc.), and non-conventional species (grass cutter, snail, guinea pigs, rabbits, etc.)

Poultry

The Ghanaian poultry industry supplies a small proportion of domestic demand and imported poultry is cheaper. Most larger-scale commercial operations focus on egg production, with some raising exotic breeds of broiler chickens, guinea fowl and turkeys for meat. Commercial poultry operations are mostly found in the urban areas of the Greater Accra and Ashanti administrative regions. There are currently less than twenty large-scale poultry enterprises in Ghana, mainly producing eggs, with limited production of broilers. Some commercial poultry farms are Rockson Farms, Boris B farms and Darko farms. These farms are producing about 10.9 million eggs annually. There is an estimated number of 68,511,000 birds in Ghana.

Ruminants

Ruminant livestock are animals with a four-chambered stomach, capable of converting roughages, forages, and agro-by products into products such as meat and milk for human consumption. These animals include sheep, goats, and cattle. Commercial ruminant rearing is very small in Ghana. Most ruminants are reared in the northern part of Ghana. Production of ruminants in Ghana cannot satisfy the local needs hence it is substituted with imported meat. Ruminant rearing is very traditional and nomadic hence commercial scale rearing is difficult to implement.

Fisheries and Aquaculture

The fishery sector in Ghana principally encompasses marine fishery, inland (fresh water) fishery and aquaculture fishery as well as related activities in fish storage, preservation, marketing and distribution. Fisheries constitute an important sector in national economic development. The sector is estimated to contribute 3 % of the total GDP and 5 % of the GDP in agriculture. About 10 % of the country's population is engaged in various aspects of the fishing industry.

Marine fisheries account for over 80 % of the fish consumed in Ghana. However, recently fresh water fisheries including aquaculture is increasingly contributing considerable share of the supply and consumption trends. The structure of the marine fishing industry in Ghana is described by the activities of four identifiable groups within the industry, namely the Artisanal, Semi-Industrial (inshore sector), Industrial (deep sea) and Tuna fleets.

Aquaculture has only recently been adopted as an assured way of meeting the deficit in Ghana's fish requirements. The aquaculture sub-sector comprises largely small-scale subsistence farmers who practice extensive aquaculture in earthen ponds in contrast to the intensive practices of commercial farmers.

There are several laws to regulate and govern the fisheries sector and the government has set up institutions that are responsible for developing fisheries including aquaculture policy and directing and establishing research priorities. The Department of Fisheries is the lead government agency for fisheries development.