



MINISTRY OF
FOOD & AGRICULTURE
REPUBLIC OF GHANA

INVESTING FOR FOOD AND JOBS (IFJ): AN AGENDA FOR TRANSFORMING GHANA'S AGRICULTURE (2018-2021)





**INVESTING FOR FOOD AND JOBS (IFJ):
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AGRICULTURE (2018-2021)**

**MINISTRY OF FOOD AND AGRICULTURE
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Acknowledgement

The Investing for Food and Jobs (IFJ, 2018 - 2021): An Agenda for Transforming Ghana's Agriculture, was prepared through the selfless commitment and involvement of a wide range of agricultural sector stakeholders who have contributed immensely to its development. The Ministry of Food and Agriculture (MoFA) acknowledges the contributions and support of all the stakeholders in the agricultural sector, including Ministries, Departments and Agencies (MDAs), Private Sector, Farmer-Based Organizations (FBOs), Civil Society Organizations (CSOs), Development Partners (DPs), Research and Academia, Traditional Authorities, among others, for their participation in this exercise. MoFA also acknowledges its partners, both local and international, that provided technical and financial support. This work was made possible by the financial and technical support of the Food and Agricultural Organization (FAO) of the United Nations (UN). Finally, sincere appreciations are extended to the FAO Technical Assistants: Dr. Alain Onibon and Dr. Henry Anim-Somuah for supporting the development of this document.

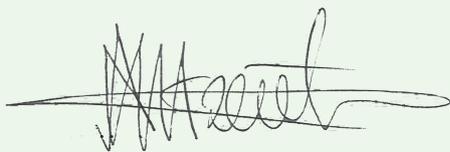
Foreword

The strategic framework that is guiding the government's development agenda is the Medium Term National Development Policy Framework (MTNDPF) called the *Agenda for Jobs: Creating prosperity and equal opportunity for all (2018 – 2021)*. The purpose of the medium-term development policy framework is to implement the vision, policies and programmes outlined in the President's Coordinated Programme of Economic and Social Development Policies (CPESDP) - named *Agenda for Jobs: Creating Prosperity and Equal Opportunity for All (2018 – 2024)*.

The agricultural 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. Significant improvements in the productivity of the agricultural sector are required to raise the average real incomes of Ghanaians as a whole. The food and agriculture sector also has direct impact on the attainment of at least five of the Sustainable Development Goals (SDGs). This plan has been developed in line with global (SDGs), continental (CAADP-Malabo) and regional (ECOWAP) development frameworks. The Malabo declaration targets government expenditure allocation of at least 10% of the annual national budget to the agricultural sector, and a resultant AgGDP growth of at least 6% per annum within the plan period. It also, together with the ECOWAP provides an integrated framework to support agricultural growth, rural development and food & nutrition security in Africa.

The IFJ a second generation National Agriculture Investment Plans (NAIPs) is designed to address the challenges identified with the first generation of the NAIPs Medium Term Agricultural Sector Investment Plans (METASIP I & II) developed under the CAADP framework. The main thrust of the plan is to ensure the government's objective of modernising the agri-food system to transform the economy of Ghana is attained. Strategically, the plan provides a framework to galvanise the modernisation of the sector through the government's flagship programmes and campaigns including: Planting for Food and Jobs; Rearing for Food and Jobs; Planting for Expert and Rural Development. The framework provides a menu of policy tools that will enable the government to: (i) harmonise all the Government's interventions and flagship programmes in the sector; (ii) align donors' interventions to Government's priorities; (iii) strategically manage investments for results; (iv) effectively leverage private sector investments; and (v) account for results.

The IFJ is developed to provide structured public investment and leverage private investments under three main categories: (i) developing critical infrastructure to modernise the agri-food system; (ii) building both public and private sector systems to generate the enabling results and the outcome results respectively; and (iii) direct transfer to farmers, agri-food enterprises and other value chain actors. IFJ provides a framework to enhance the coordination of all programmes and projects including the government flagship projects (PFJ, RFJ, PERD etc.) using the value chain approach to ease implementation and accountability. The value chain approach is employed to strengthen collaboration, coordination and commitment of all sector stakeholders and overcome most of the challenges facing the food and agriculture sector to enhance growth, create employment, increase incomes, reduce poverty and achieve food and nutrition security for the people of Ghana within the context of an environmentally sustainable and transformed rural economy.



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Acronyms and Abbreviations

1D1F	One District - One Factory
1D1W	One District - One Warehouse
1V1D	One Village - One Dam
ABFA	Annual Budget Funding Amount
ABL	Accra Brewery Limited
ACSE	Agricultural Cluster Service Enterprise
AEA	Agricultural Extension Agent
AESD	Agricultural Engineering Service Directorate
AFIA	Agri-Food Industry Association
AgGDP	Agricultural Gross Domestic Product
AGI	Association of Ghana Industries
AGRA	Alliance for Green Revolution in Africa
AgSWG	Agricultural Sector Working Group
AMSECs	Agricultural Mechanization Services Centres
APD	Animal Production Directorate
APR	Annual Progress Report
BoG	Bank of Ghana
BSA	Bean Supply Agreement
CAADP	Comprehensive Africa Agricultural Development Programme
CAPI	Computer Assisted Personal Interview
CAVA	Cassava Adding Value for Africa
CD	Chief Director
CDA	Cotton Development Authority
COCOBOD	Ghana Cocoa Board
CSIR	Centre for Scientific and Industrial Research
CSO	Civil Society Organization
CTOR	Cocoa Taken-Over Receipting
DAAS	District Agricultural Advisory Services
DAD	District Agricultural Department
DAES	Directorate of Agriculture Extension Services
DCACT	District Chamber of Agriculture, Commerce and Technology
DCE	District Chief Executive
DCD	District Coordinating Director
DCS	Directorate of Crop Services
DDA	District Director of Agriculture
DPs	Development Partners
DPCU	District Planning and Coordination Unit
ECOWAP	ECOWAS Agricultural Policy
F&A	Finance and Administration
FAGE	Federation of Associations of Ghanaian Exporters
FAO	Food and Agriculture Organization
FBO	Farmer-Based Organization
FDA	Food and Drugs Authority



FIs	Financial Institutions
FNS	Food and Nutrition Security
F.O.B	Free on Board
FSNMS	Food Security and Nutrition Monitoring System
GADF	Ghana Agricultural Development Fund
GADS	Gender and Agricultural Development Strategy
GAEP	Ghana Agricultural Engineering Policy
GAIP	Ghana Agricultural Insurance Programme
GASIP	Ghana Agricultural Sector Investment Programme
GDP	Gross Domestic Product
GGBL	Guinness Ghana Breweries Limited
GII	Gender Inequality Index
GIRSAL	Ghana Incentive-Based Risk Sharing System for Agricultural Lending
GLSS	Ghana Living Standard Survey
GSA	Ghana Standard Authority
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GLDB	Grains and Legumes Development Board
GVC	Ghana Veterinary Council
GIDA	Ghana Irrigation Development Authority
GCAP	Ghana Commercial Agriculture Project
GDHS	Ghana Demographic and Health Survey
GHG	Green House Gas
GoG	Government of Ghana
GRIDF	Ghana Rural Infrastructure Development Fund
HRDMD	Human Resource Development and Management Directorate
ICOUR	Irrigation Company of Upper Regions
ICT	Information Communication Technology
IFJ	Investing for Food and Jobs
IGF	Internally Generated Fund
ILO	International Labour Organization
ILOSTAT	International Labour Organization Statistics
JICA	Japan International Corporation Agency
ISIC	International Standard Industrial Classification
LGS	Local Government Service
M&E	Monitoring and Evaluation
MAG	Modernizing Agriculture in Ghana
MDA	Ministries, Departments and Agencies
MDG	Millennium Development Goal
METASIP	Medium Term Agricultural Sector Investment Plan
MESTI	Ministry of Environment, Science, Technology and Innovation
MGCSP	Ministry of Gender, Children and Social Protection
MHE	Market Hub Enterprise
MJAGD	Ministry of Justice and Attorney General's Department
MLGRD	Ministry of Local Government and Rural Development
MLNR	Ministry of Lands and Natural Resources
MMDA	Metropolitan, Municipal and District Assembly

MoFA	Ministry of Food and Agriculture
MoF	Ministry of Finance
MoFAD	Ministry of Fisheries and Aquaculture Development
MOH	Ministry of Health
MoTI	Ministry of Trade and Industry
MoWH	Ministry of Works and Housing
MTNDPF	Medium-Term National Development Policy Framework
NADMO	National Disaster Management Organization
NAFCO	National Food Buffer Stock Company
NDPC	National Development Planning Commission
NGO	Non-Governmental Organization
NIC	National Insurance Commission
OFSP	Orange Fleshed Sweet Potato
PEF	Private Enterprises Federation
PERD	Planting for Export and Rural Development
PFJ	Planting for Food and Jobs
PMF	Performance Measurement Framework
POCC	Potential Opportunity Constraints and Challenges
PPMED	Policy Planning, Monitoring and Evaluation Directorate
PPPP	Public Private Producer Partnership
PPRC	Producer Price Review Committee
PPRSD	Plant Protection and Regulatory Services Directorate
RAAS	Regional Agricultural Advisory Services
RADs	Regional Agricultural Departments
RELC	Research-Extension-Farmer Liaison Committee
RCC	Regional Coordinating Council
RDA	Regional Director of Agriculture
RFJ	Rearing for Food and Jobs
RING	Resilience in Northern Ghana
RTIMP	Root and Tuber Improvement and Marketing Programme
SDG	Sustainable Development Goal
SLM	Sustainable Land Management
SMRE	Small and Medium Rural Enterprise
SMTDP	Sector Medium Term Development Plan
SOE	State-Owned Enterprise
SOFIA	State of World Fisheries and Aquaculture
SRID	Statistic Research and Information Directorate
TVET	Technical and Vocation Education and Training
UN	United Nation
VSD	Veterinary Service Directorate
WAAPP	West African Agriculture Productivity Programme
WFP	World Food Programme
WIAD	Women in Agriculture Development
WAATP	West African Agricultural Transformation Programme

Glossary

Terminology	Definition
Programmes	A collection of sub-programmes that are been implemented to address a development objective, e.g. Crop and Livestock Development Programme. A programme may consists of sub-programmes, investment areas and policy tools (implementation tools).
Sub-Programmes	A collection of investment areas to address specific development objectives which may be led by one or two directorates or departments, e.g. crop productivity sub-programme
Investment Area	Comprises a selection of policy tools that are required to ensure full complement of interventions including development of a technology or service, regulatory measures, and support for the target beneficiaries to access and use the technology or service.
Investment Category	Grouping of interventions based on needs that investment seeks to address. The categories are infrastructure, system building and direct transfers to beneficiaries in terms of subsidies, tax exemptions and other incentives provided by the Government
Policy Tool	A well-defined implementation arrangement that provides; a rationale, aim, eligible criteria for expenditure, implementing agencies, and beneficiaries, targets for the investment period, a budget ad the modalities for implementation.
Policy Objectives	Objectives of the Agricultural Sector Set out in the Medium Term National Development Policy Framework (MTNDPF) – Agenda for Jobs, 2018 - 2021
Strategies	Set of tactics/approaches set out to implement the Policy Objectives in the National Medium Term Policy Framework (NMTPDF) – Agenda for Jobs, 2018 - 2021
Instrument Based Approach	The use of implementation instruments (policy tools) to garner resources and harmonize the implementation of public investments.
Knowledge packages	Collection of information on a specific topic or theme that is presented to suit the needs and enhance the know-how of the target audience. It may be presented in different formats and disseminated using various media.
Agri-food system	Is the continuum of activities, processes and institutions involved in the production, distribution and consumption of food items
Capital Market Instrument	Financial instruments used by capital markets such as stocks and bonds.
Land Banks	Collection of contiguous parcels of land developed for a specific commercial activity such as agricultural production.



*A Greenhouse village at Dawhenya,
Greater Accra*

Executive Summary

The Investing for Food and Jobs (IFJ): An Agenda for Transforming Ghana's Agriculture (2018-2021) has been developed to operationalise the vision of the Government of Ghana as indicated in the Medium-Term National Development Policy Framework (MTNDPF) which is titled "*Agenda for Jobs: Creating Prosperity and Equal Opportunity for All (2018-2021)*". It also domesticates international development frameworks such as the SDGs at the global level; CAADP-Malabo declaration at the continental level; and the ECOWAP at the regional level. The thrust of this medium term plan is to transform the agricultural sector through Government investing at least 10% of the national budget into agriculture with a corresponding annual sector growth rate of at least 6% within the plan period as enshrined in the Malabo declaration.

The transformed agricultural sector is expected to open up the potentials to increase incomes, create jobs and provide raw materials to industry with a strong focus on creating an enabling environment for private sector operators and other actors within the various commodity value chains. The innovative flagship programmes of the Government including the Planting for Food and Jobs, Planting for Export and Rural Development, Rearing for Food and Jobs, One-District-One Factory, One-District-One-Warehouse, among others, have been planned based on the adopted objectives and key strategies from the Agenda for Jobs (2018-2021). These initiatives will be implemented under the programme areas to ensure goals set for the sector are achieved. The agricultural sector is the highest employer of the country's labour force engaging 41.9% (2017) mainly in production of crops and livestock, fishing, processing and marketing of agricultural produce (ILO, 2017).

The key development issues identified include: (i) low level of public sector investment; (ii) low institutional capacity of the public sector at all the three levels of government to deliver the enabling environment for the growth of the sector; (iii) poor marketing systems; (iv) inadequate access to land and security of tenure for agriculture production; (v) low transfer and uptake of research findings; (vi) low application of science and technology especially among smallholder farmers; (vii) low quality of genetic material for crop, livestock and

fish species; (viii) poor agronomic practices; (ix) poor husbandry practices and handling of livestock/poultry products; (x) inadequate quality feed and water standards for livestock and poultry; (xi) lack of modern housing for livestock and poultry production; (xii) inadequate disease monitoring and surveillance system; (xiii) inadequate access to appropriate mechanisation services; (xiv) lack of appropriate water management systems for agricultural production; and (xv) poor construction and management of irrigation infrastructure.

The key agricultural sector development issues are not to be addressed exclusively by the Ministry of Food and Agriculture. The mandates of several other ministries, departments and agencies impact significantly on the agricultural sector, hence the need for effective inter-ministerial collaboration, consultation and cooperation. This plan adopts the instrument-based approach which has programmes with corresponding sub-programmes, investment areas and policy tools. It entails 4 Programmes, 13 Sub-Programmes, 39 Investment Areas and 82 Policy Tools.

The plan also seeks to address cross cutting issues which include biodiversity, climate change and environmental management, agricultural employment, gender equity, poverty, inequality & social protection and food & nutrition security.

The plan will be implemented within the decentralisation framework which makes use of the existing structures of MDAs at the national level, RCCs and MMDAs at the decentralised levels. Particularly, the District Agricultural Departments are expected to: understand the agricultural aspects of the NMTDPF together with this plan; incorporate relevant aspects into the district assembly composite plan; and also convince the district authorities why priority should be given to planned agricultural activities.

The Monitoring and Evaluation (M&E) Plan for the IFJ has been developed as a separate document. Strong collaboration and coordination is required among stakeholders for effective implementation and monitoring for results. MoFA's coordination as well as monitoring and evaluation roles are very critical in the implementation of this plan. The Policy Planning,

Monitoring and Evaluation Directorate in collaboration with SRID of MoFA will have the responsibility of coordinating the agricultural sector M&E and lead in the collection, collation and analysis of M&E data. The Ministry of Monitoring and Evaluation and the NDPC will play key oversight roles during plan implementation.

A summary of the cost estimates of the plan for the various programmes and sub-programmes are shown below. A total estimated cost of about GH¢9.543 Billion (which excludes that of the cocoa sub-sector strategy) is required for the plan period. It must be noted that the estimated cost of the plan is with respect to public funds. The private sector, especially farmers, will have to invest adequately in the sector to achieve the plan objectives. Development Partners, NGOs and Civil Society Organizations will also have to play their expected roles effectively.

IFJ Budget Estimates (GH¢)

Programme Areas	Indicative Budget (GH¢ 'Million)				
	2018	2019	2020	2021	Total
Programme 1: Management and Administration	196.30	201.33	205.98	211.10	814.72
SP 1.1: Finance and Administration	154.82	54.82	154.82	154.82	619.28
SP 1.2: Human Resource Development and Management	26.67	29.90	32.89	36.18	125.64
SP 1.3: Policy, Planning, Budgeting, Monitoring and Evaluation	11.85	13.29	14.62	16.08	55.84
SP 1.4: Research, Statistics, ICT and Public Relations	2.96	3.32	3.65	4.02	13.96
Programme 2: Crops and Livestock Development	747.10	2,311.01	2,557.34	2,800.84	7,669.19
SP 2.1: Crops and Livestock Production and Productivity Improvement	529.57	1,145.95	1,235.08	1,320.30	3,701.34
SP 2.2: Mechanisation, Irrigation and Water Management	160.45	1,049.23	1,229.95	1,423.51	3,702.69
SP 2.3: Post Harvest Management and Agricultural Marketing	54.68	112.94	88.84	52.87	254.65
SP 2.4: Nutrition Sensitive Agriculture	2.41	2.89	3.46	4.16	10.51
SP 2.5: Emergency Preparedness	81.64	90.03	99.08	109.04	298.15
Programme 3: Agribusiness Development	21.41	31.20	34.59	35.95	12.15
SP 3.1: Promotion of Private Sector Investment in Agriculture	0.09	2.39	2.21	1.79	6.48
SP 3.2: Agricultural Finance	21.32	28.81	32.38	34.16	116.67
Programme 4: Sustainable Development of Land and Environment	201.90	222.23	244.65	267.45	936.23
SP 4.1: Conservation of Natural Resources	4.60	5.06	5.57	6.12	21.35
SP 4.2: Climate Change Mitigation and Resilience Schemes	197.30	217.17	239.08	261.33	914.88
Grand Total	1,166.71	2,765.77	3,042.56	3,315.35	9,543.28
Government of Ghana Contribution (GOG)	758.36	1,797.75	1,977.66	2,154.97	6,203.13
Expected Development Partner Contribution (Donor)	408.35	968.02	1,064.90	1,160.37	3,340.15
Total Secured		967.84	1,150.40	1,303.91	3,422.16
GAP (Total not Secured)		(0.002)	(1,892.16)	(2,011.43)	(6,121.12)
GoG (MoFA Secured)		471.23	673.66	803.45	1,948.34
GAP (GOG)		(1,326.52)	(1,304.00)	(1,351.53)	(3,982.05)
Donor (Secured)		496.62	476.74	500.46	1,473.82
GAP (Donor)		(471.40)	(588.16)	(659.91)	(1,719.46)



*Trainees at the Dawhenya Greenhouse village,
Greater Accra*



Chapter One: Performance Review, Current Situation and Baseline

1.1 Vision, Mission, Functions and Values of the Ministry of Food and Agriculture

1. **Vision:** The vision for Ghana's agricultural sector is "a modernised agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty".
2. **Mission:** To promote sustainable agriculture and thriving agribusiness through research and technology development, effective extension and other support services to producers, processors, distributors and consumers for improved food security, nutrition and incomes.
3. **Functions:** (a) Agricultural policy formulation; (b) Sector planning; (c) Development and management of sector programmes and projects; (d) Preparation of annual budgets based on sector programmes and projects; (e) Generation and dissemination of agricultural technologies and advisory services; and (f) Monitoring and evaluation of agricultural sector performance.
4. **Core Values:** The Ministry of Food and Agriculture (MoFA) strives for accountability, integrity, transparency, efficiency and effectiveness through fairness, confidentiality, meritocracy, equity and timely delivery of quality services.

1.2 Performance Review

1.2.1 Performance of Economy of Ghana

5. Ghana's Gross Domestic Product (GDP) growth rate continued to decline from 14% in 2011 to 3.5% in 2016 (GSS 2017). The continuous decline of the GDP after the 2011 performance is attributed to low total factor productivity - a measure of the efficiency at which labour and capital are being used to produce goods and services (World Bank, 2018). This is depicted in the slow growth rate of the productive sectors, agriculture and industry with an average annual growth rate of 3.68% and 3.34% respectively but with a strong growth rate in the services sector

with an average annual growth rate of about 7.94% between 2012 and 2016. The high growth in the services sector is driven mainly by growth in less productive sub-sectors; information and communication, and the financial services. This imbalance in the economic growth is a far cry from the structural transformation expected to address the challenges with poverty, high unemployment and low private sector investment to launch the country on a sustainable growth track.

6. **Importance of agriculture in Ghana's economic development:** Ghana like other developing countries in West Africa is basically an agrarian country. The sector contributes to the economy of Ghana in many spheres which include:

i. Employment: Agriculture provides employment for over 44.7% of the populace mainly involved in production of either crops, livestock, fishing or in processing and marketing of agricultural produce (SRID, 2016) on a formal and informal basis. Ghana's agriculture is Private Sector led and a modernised agricultural sector with thriving private sector agribusinesses will be a panacea for the youth employment challenge by providing decent and rewarding career along the agricultural value chain.

ii. Foreign Exchange: The sector is also a major contributor to foreign exchange earnings. Between 2014 and 2016, export of non-traditional agricultural commodities increased from about GH¢ 962 million in 2014 to GH¢ 1,901 million in 2016 (MoFA-APR, 2017). The prevailing economic conditions characterised by currency depreciation and its attendant effects on the economy provide an opportunity to strengthen the non-traditional export sector.

iii. Contribution to National GDP: Agriculture continued to provide valuable contribution to Ghana's economy although the share of its contribution declined from 29.8% in 2010 to 18.3% in 2017. This trend is expected because as the

economy expands, the contribution of agriculture to GDP declines whereas services (2010 – 51.1% to 2016 – 56.9%) and industrial (2010 – 19.1% to 2016 - 24.2%) sectors appreciate.

iv. Sources of Food: The demand for food is increasing rapidly due to rapid population growth (2.2%, 2017) and the agricultural sector provides staple food to the individuals within the country. The rising food surplus (except for rice) from 9.51 million Mt in 2011 to 11.24 million Mt in 2016 (Computed from Table 1.6), valued at GH¢ 6.9 billion and GH¢18.07 billion respectively.

v. Raw materials for industries: Ghana's tree crops that are currently being processed include cocoa, oil palm, sheanut, coffee, rubber and coconut. A few annual crops including cassava, sweet potatoes, plantain, cocoyam, and some fruits and vegetables are also being processed. For instance, about 18,293.43 Mt of cassava valued at GH¢ 3.7 million was supplied to industry for processing between the years 2013 to 2016 (as reported by ABL & GGBL). The agricultural sector therefore, provides both food and raw materials for the industrial transformation being pursued by the government.

1.2.2 Performance of the Agricultural Sector

7. Scope of the sector: MoFA is the lead government agency and focal point for the development of the sector. Its mandate is to develop and execute policies, programmes and strategies for the agricultural sector within the context of a coordinated national socio-economic growth

and development agenda. The sector comprises five sub-sectors namely; crops, livestock, fisheries, cocoa, and forestry/logging. MoFA is responsible for the crops, livestock and cocoa sub-sectors whilst the Ministry of Fisheries and Aquaculture Development (MoFAD) is responsible for fisheries. The Ministry of Lands and Natural Resources (MLNR) is responsible for forestry and logging whilst the Ministries of Roads and Highways; Environment, Science, Technology and Innovation; Health; and Trade & Industry also undertake activities that impact on the sector. The Ministry of Local Government and Rural Development collaborates with MoFA for effective implementation of sector policies and plans at the decentralised level. This is led by Agricultural Departments under the Metropolitan, Municipal, and District Assemblies (MMDAs) and coordinated by the Regional Agricultural Departments (RADs).

8. Sector Growth: The Agricultural Sector growth rates for the years 2010 to 2017, was projected at 6.0%. In this regard, all programmes and projects were designed to ensure that this target was achieved. The average growth rate for the sector over the period 2010 to 2016 was 3.5%. As shown in Figure 1.1, the lowest growth rate of 0.8% was recorded in 2011 and the highest of 5.7% in 2013. This low growth rate was attributed to poor performance of the fisheries (-8.7%) and forestry/logging (-14%) sub-sectors coupled with poor rain fall in amount and distribution which resulted in low crop production.

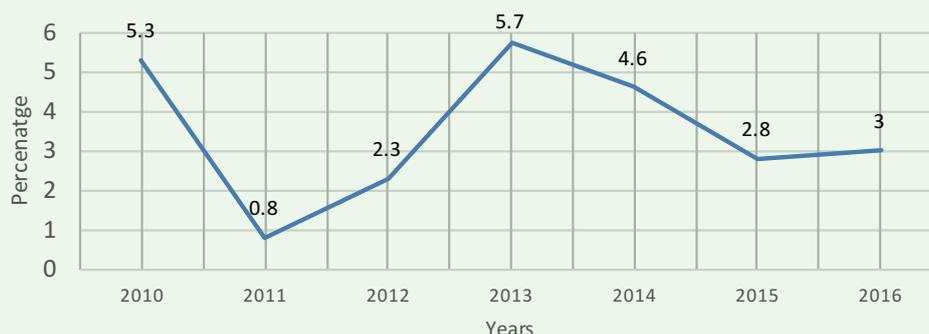


Figure 1.1: Real Annual GDP Growth Rate of the Agricultural Sector, 2010 – 2016.

Source: Ghana Statistical Service, 2017.

9. Brief overview of sub-sectors: This section assesses the attainment of national and sector targets in the Ghana Shared Growth and Development Agendas (GSGDA I&II), 2010-2017 and the Medium Term Agricultural Sector Investment Plans (METASIP I & II), 2011-2017. The development of the METASIPs were done in line with the Sustainable Development Goals (SDGs), Comprehensive African Agricultural Development Programme (CAADP), ECOWAS Agricultural Policy (ECOWAP), and the National Medium Term Development Frameworks.

10. The contribution of the crops sub-sector to agricultural GDP at current prices, excluding cocoa, increased from 2011 (61.1%) to 2016 (67.7%). The livestock sub-sector however

increased in growth from 2010 (6.8%) to 2011 (7.1%) and then decreased until 2014 (5.7%). The cocoa sub-sector saw the highest growth rate of 14.1% in 2011 and the lowest of 8.8% in 2016. The fisheries sub-sector growth rate decreased from 7.8% in 2010 to 5.5% in 2014.

11. Crops sub-sector: This subsector is categorised into five: (i) roots and tubers; (ii) cereals; (iii) legumes; (iv) fruits and vegetables; and (v) tree crops. There was a steady increase in the production of roots and tubers from 2010 to 2016 with cassava increasing by 31.8% and yam by 24.8%. Cereal production, on the other hand, decreased over the same period; maize by 8.0%, millet and sorghum by 27.4%, and 29.0% respectively. Rice production (paddy) however, increased by 39.8% from 2010 to 2016. Legume production also decreased steadily (Table 1.1).

Table 1.1: Production of Selected Food Crops ('000 Mt), 2010 - 2016

Crop	2010	2011	2012	2013	2014	2015	2016
Maize	1,872	1,683	1,950	1,764	1,769	1,692	1,723
Millet	219	183	180	155	155	157	159
Rice (paddy)	492	463	481	570	604	641	688
Rice (milled)*	295	278	332	393	417	443	474
Sorghum	324	287	280	257	259	263	230
Cassava	13,504	14,240	14,547	15,990	16,524	17,213	17,798
Cocoyam	1,355	1,299	1,270	1,261	1,299	1,301	1,344
Plantain	3,538	3,619	3,556	3,675	3,828	3,952	4,000
Yam	5,960	5,855	6,639	7,075	7,119	7,296	7,440
Groundnut	531	465	475	409	427	417	426
Cowpea	219	237	223	200	201	203	206
Soybean	145	165	152	139	141	142	143

Source: MoFA, 2016.

Note: Rice (milled)* estimated at 60% of paddy for 2010 & 2011; and 69% from 2012 – 2016.

12. There was a decline in cocoa production from 2010/11 to 2012/13 production seasons and increased from 2012/13 to 2013/14. Oil palm production however, increased through the period from about 2.1million Mt in 2010/11 to about 2.5 million Mt in 2014/15 as shown in Figure 1.2.

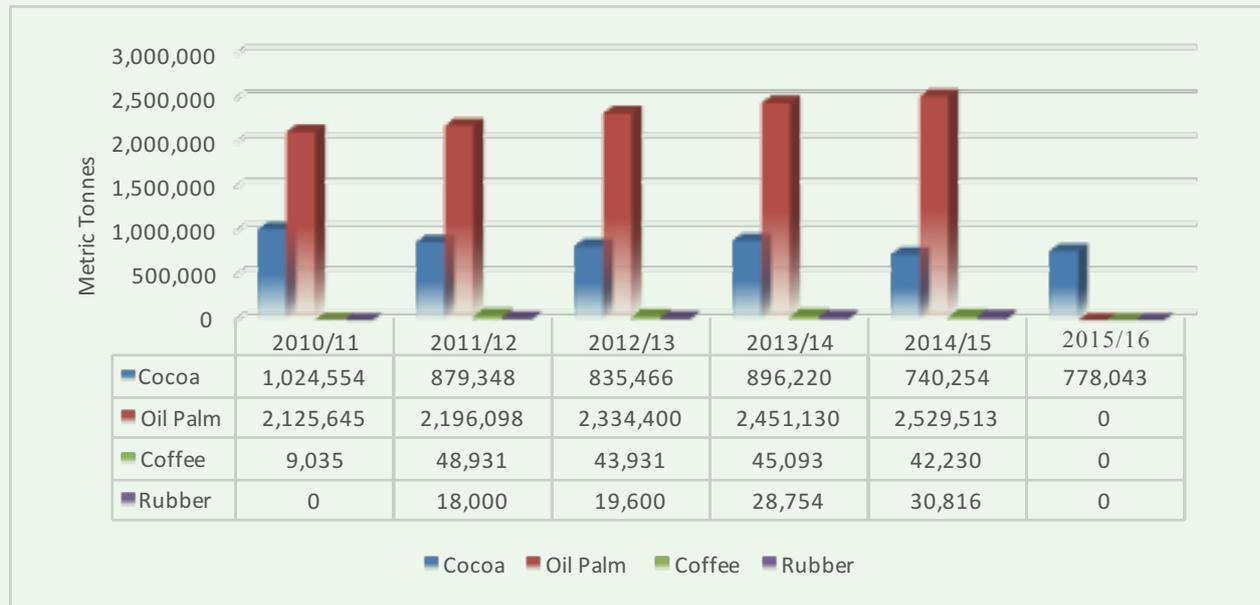


Figure 1.2: Production of Selected Tree Crops (Mt)

Note: The zeros for some years mean data not readily available

Source: MoFA, 2015.

13. **Livestock sub-sector:** Available data as in Figure 1.3 indicate that there has been a steady increase in domestic meat production from 2011 to 2016. Total domestic meat production increased by 24.3% from the baseline figures of about 127 million Mt (an average figure for 2011 to 2013), to about 158 million Mt in 2016.

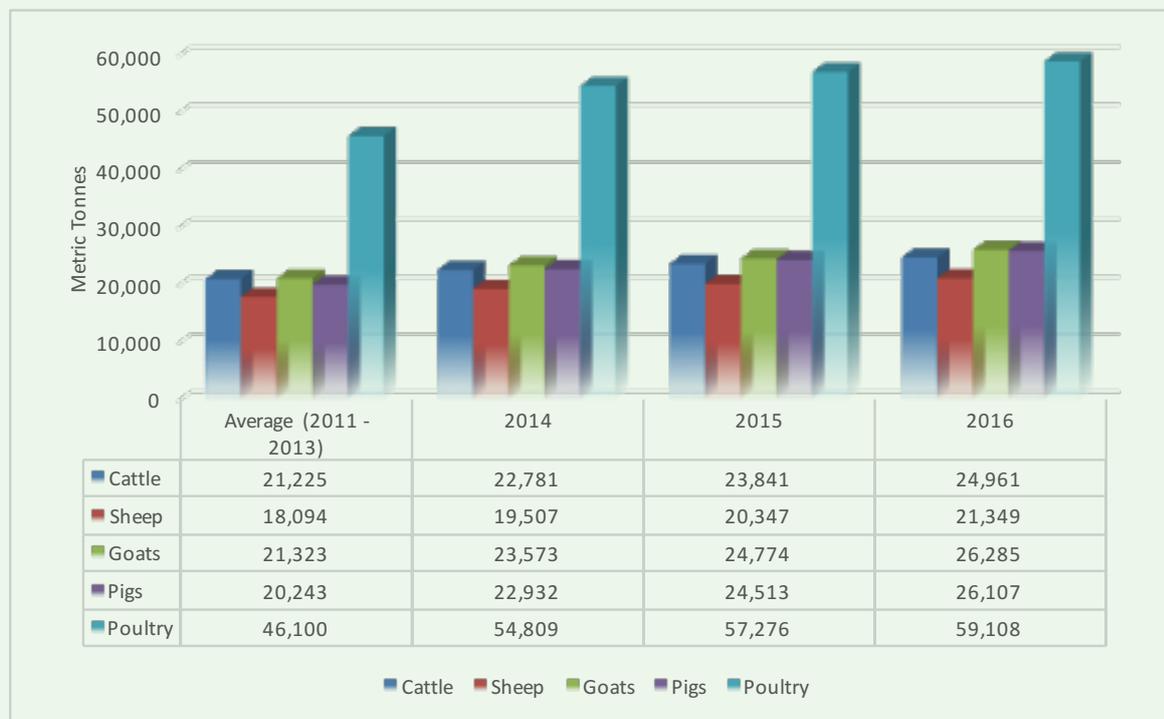


Figure 1.3: Domestic Meat Production ('000 Mt), 2011-2016.

Source: MoFA, 2016.

14. Fisheries sub-sector: Fish is recognised as one of the most important sources of protein in the country and it is expected to provide 60% of protein needs. The national fish requirement from 2011 to 2015 was 3,051,317.61 Mt. It is also reported that the national per capita fish consumption is estimated to be 23kg, which is higher than the global average of 20kg (FAO SOFIA Report, 2016). Figure 1.4 shows that total fish production for 2016 was 465,356 Mt which was the highest

since 2013. The total tonnage from 2013 to 2016 was 1.7million. Marine fish capture was the highest in 2016 with a metric tonnage of 328,541 followed by inland capture (84,345 Mt). Marine fish constituted about 72% of the total fish supply since 2013. This goes a long way to indicate how dependent the country is on marine source. There is the need to develop aquaculture to augment the supply of fish in the country.

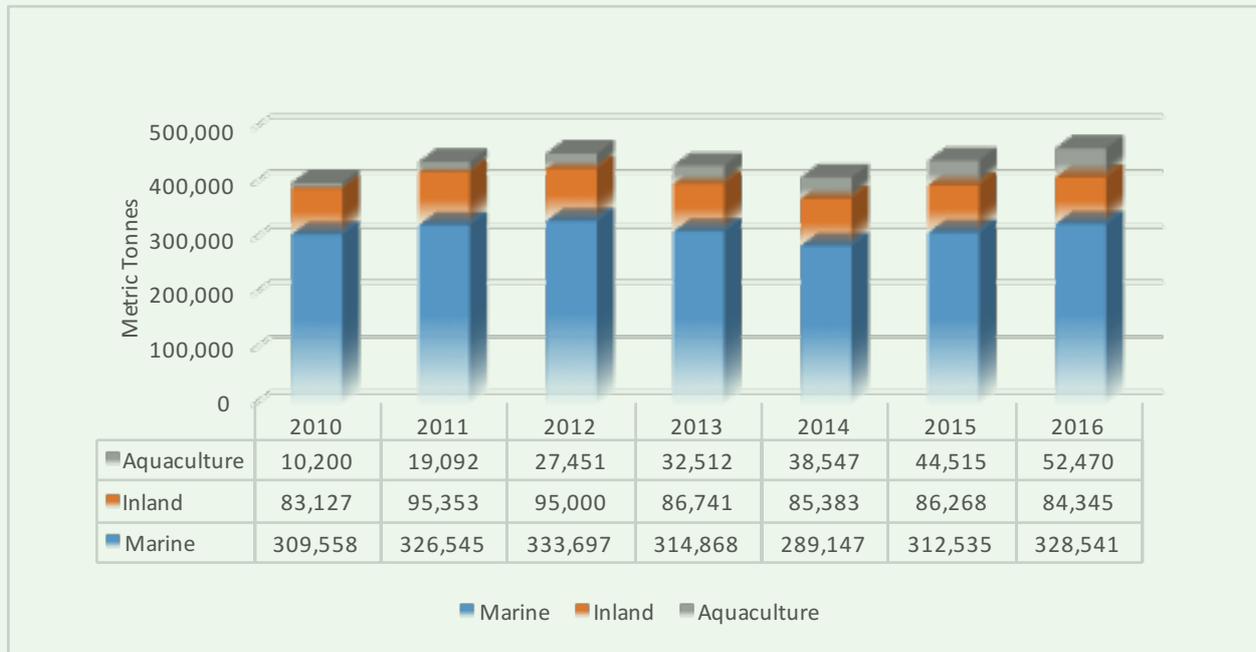


Figure 1.4: Annual Fish Production by Source (Mt)

Source: Ministries of Fisheries and Aquaculture Development (MoFAD), 2017.

1.2.3 Performance of GSGDA II (2014 -2017) - Accelerated Agricultural Modernisation

15. The goal of Ghana’s national agricultural development policy, as stated in the GSGDA II and consistent with METASIP II, is to accelerate agricultural modernisation and ensure sustainable natural resources management. The focus was to transform the agricultural sector to increase productivity, create jobs, increase incomes and ensure food security over the medium term (2014 – 2017). Under GSGDA II, the stated agricultural sector development is anchored on: (a) Accelerated Agricultural Modernisation and (b) Sustainable Natural Resources Management. MoFA is responsible for “*accelerated*

agricultural Modernisation” whilst MLNR is responsible for “*Sustainable Natural Resources Management*”. The performance of accelerated agricultural modernisation component is summarised in Table 1.2. The accelerated agricultural modernisation focus areas were: (i) Agricultural Productivity; (ii) Job Creation; (iii) Agricultural Competitiveness and Integration into Domestic and International Markets; (iv) Production Risks/Bottlenecks in Agricultural Industry; (v) Crops Development for Food Security, Exports and Industry; (vi) Livestock and Poultry Development; and (vii) Improved Institutional Collaboration.

Table 1.2: Performance of the Agricultural Sector Focus Areas, 2014-2017

Period (2014-2017)	Focus Area: Agricultural Productivity						Remarks
	Policy Objective: Increased access to extension services and re-orient agricultural education						
	Programme	Sub-programme	Broad Projects/ Activity	Indicators	SMTDP Target	Achievement	
	Food and Nutrition Security and Emergency Preparedness	Promotion of Agricultural Mechanisation	Intensify the establishment of mechanisation service provision centres with backup spare parts for all machinery and equipment. Develop human capacity in agriculture machinery management, operation and maintenance within the public and private sectors	Baseline 2013 63 AMSECS	130 AMSECS	213 AMSECS by 2016	Fully implemented
				A number of mechanisation training centres exist	Rehabilitate two (2) mechanisation training centres to provide vocational training to interested individuals as tractor/machinery operators.	In collaboration with HRDMD and JICA, two (2) training centres (Wenchi and Adidome Farm Institutes) have been re-equipped to train tractors and machinery operators. In 2016, 100 tractor/machinery operators were trained	Fully implemented



Focus Area: Accelerated Creation of Decent Jobs						
Policy Objective: Agricultural competitiveness and integration into domestic and international markets						
	Marketing of agricultural products	Improvement in post-production management	Strengthen the operations of the National Food and Buffer Stock Company.	Rice-6,026 Mt Maize-4,863 Mt supplied	NAFCO has been re-vitalised	Fully implemented
	Livestock and Poultry Development	Review and update existing Livestock Development Policy, Diseases of Animal Act 1961, Act 83, and Veterinary Surgeons' Law of 1992.	Facilitate the review of livestock Development policy, Act 83 and the Veterinary Surgeon's Law	Livestock Development Policy, Diseases of Animal Act 1961, Act 83, and Veterinary Surgeons' Law of 1992 reviewed.	Cabinet approved document in September 2016, Document officially launched on 9 th November 2016 and circulated to the public Vet. Surgeon law: Final validation workshop held in October, 2016 Ready to be submitted to parliament	Partially implemented
2017		Enact legislations to cover poultry hatcheries, livestock breeding and meat inspection.	Advocate for the passage and enforcement of meat inspection law & regulations on hatchery operations from the Diseases of Animal Act, 1961	Passage and enforcement of meat inspection law & regulations on hatchery operations	Validation workshop on meat inspection regulations held on March 2017, based on the Public Health Act, 2012	Not implemented - meat inspection regulations. Regulations on hatchery operations contained in the Veterinary Services and Animal Production bill

			Facilitate the production of seeds and improved planting materials and train seed growers on quality seed production and inspectors on certification.	Improved seed adoption at 12%	70% of improved seed and planting material requirements produced by 2017.	20% adoption	Partially implemented	
			Rehabilitate the road network in cocoa-growing areas to facilitate the evacuation of the crop.			A number of cocoa roads rehabilitated	Fully implemented	
			Policy Objectives:					
	Food and Nutrition Security and Emergency Preparedness	Nutrition sensitive agriculture	Promote the production and consumption of micro-nutrient rich foods by children and women of reproductive age especially in rural areas.			116,536 beneficiaries reached	Partially implemented	
		Develop through research bio fortified high nutrient crops and link to the school feeding programme.	Evaluate progenies identified through marker Assisted Selection with farmers and other end-users.			Extensive evaluations and demonstrations carried out and released for production by farmers.	Partially implemented	

Source: METASIP I & II Review Reports, 2017



1.2.4 Total Releases from Government of Ghana to MoFA (2014 -2017)

16. The budgets for MoFA were released under three categories – personnel emoluments, goods & services and assets (Table 1.3). Data available for the period indicate that averagely 68.8% of the approved budget was released annually. Average annual release for personnel emoluments, good & services and capital expenditure/asset were 97.5%, 46.1% and 18.0% respectively.

Table 1.3: Total Releases from Government of Ghana to MoFA (2014 -2017)

Year	(GH¢ 'Million)					
	Requested (A)	Approved (B)	Released (C)	Deviation (A-C)	Actual Expenditure (D)	Variance (C-D)
PERSONNEL EMOLUMENTS (i.e. wages and salaries)						
2014	35.00	35.00	45.36	(10.36)	45.35	0.01
2015	53.00	53.16	59.72	(6.56)	59.72	0.00
2016	57.04	57.04	52.64	4.40	52.64	0
2017	53.91	53.91	46.57	7.34	46.57	0
GOODS AND SERVICES						
2014	48.30	48.30	58.47	(10.17)	58.47	0
2015	39.85	36.55	14.86	24.99	50.01	(35.15)
2016	353.14	65.65	71.53	281.61	69.48	2.05
2017	893.09	454.86	134.266	758.82	159.84	(25.57)
ASSETS						
2014	224.00	223.59	27.06	196.94	27.44	(0.38)
2015	412.81	322.11	19.80	393.01	40.03	(20.23)
2016	378.81	378.81	73.21	305.61	107.77	(34.56)
2017	328.75	250.88	91.83	236.92	10.24	81.59
TOTAL (PE, GOOD & SERVICES AND ASSET)						
2014	307.30	306.89	131.62	175.68	153.49	(21.87)
2015	505.66	411.82	94.38	411.44	149.76	(55.38)
2016	788.99	501.50	197.38	591.61	229.89	(32.51)
2017	1,275.75	759.65	272.67	1,003.08	216.65	56.02

Source: MoFA Financial Reports, (2014-2017).

1.2.5 Sources of Financial Resource

17. The main sources of funding for the agricultural sector are: GoG (Consolidated Fund), Annual Budget Funding Amount (ABFA), Internally Generated Fund (IGF) and Donor sources. However, when the need arises, Government funds the sector from the Road Fund and Infrastructure Fund as in Table 1.4.

Table 1.4: Sources of Financial Resources for MoFA (GH¢ million)

Source	2014			2015			2016			2017		
	Planned	Actual Received	Variance									
GoG	73.770	73.030	0.740	59.630	62.969	-3.339	59.776	56.982	2.794	246.378	214.537	31.841
ABFA	52.180	57.570	-5.390	204.000	29.999	174.001	262.318	138.132	124.186	138.214	91.681	46.533
IGF	2.180	0.990	1.190	1.806	1.820	-0.014	4.066	2.456	1.610	2.465	3.593	-1.128
Donor	178.770	160.070	18.700	146.385	168.102	-21.717	175.342	179.724	-4.382	372.589	71.059	301.530
Non-Road fund	N/A	N/A	N/A	N/A	55.023	N/A	N/A	N/A	N/A	N/A	4.781	N/A
Ghana Infrastructure fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34.172	N/A	N/A	N/A	N/A
Others*		23.180		-	5.440	-	-	3.002	-	-	5.364	-
TOTAL	306.900	314.840	-3.46	411.821	323.353	148.931	501.502	414.468	124.208	759.646	391.015	378.776

Source: MoFA Financial Reports, 2014 – 2017.

*** Accrued Interest**

1.3 Summary of Key Development Issues

18. Agriculture in Ghana within the plan period continued to be characterised by a number of developmental issues. Key amongst them include: (a) low agricultural productivity; (b) low agricultural competitiveness and integration into domestic and international markets; (c) high cost and poor construction of irrigation infrastructure; (d) low flow of financial resources to agriculture and difficult access to finance; (e) weak implementation of sustainable land management policies and strategies at the community level; (f) inadequate diversification and competitiveness in staples and cash crops in the sector; (g) low level of agro-processing and value addition; (h) limited commercial farms and inadequate agricultural estates; (i) weak inter and intra institutional coordination and collaboration; (j) ineffective engagement of women and people with disabilities; (k) inadequate inclusion of gender and vulnerability issues in climate change actions; and (l) degradation of protected areas and rapid loss of biodiversity due to inappropriate agricultural practices.

1.4 Lessons learned from the implementation of METASIPs I & II

19. METASIPs I & II were designed as a means to address the medium-term investment needs in the non-cocoa sub-sectors. These provided the framework to meet the programme-based budgeting of Government. Even though METASIPs I & II had targets for the three subsectors (crops, livestock and fisheries), the crops sub-sector had a higher number of programmes and projects compared to the other two sub-sectors.
20. In the design of the METASIPs, a mechanism was put in place to ensure coordination of the programme areas in order to expedite the results but this was not effectively implemented. The investments under the METASIPs I & II were largely executed as independent projects or treated as part of a range of projects. Even though the programme areas were designed as compliments, the interventions failed to meet the design requirements.
21. The METASIPs I & II were designed to stimulate private sector investment in the agricultural sector. However, after the implementation period, the expected response from the private sector

was not realised. With the exception of grant schemes, stimulation and control of private sector investments were absent in the framework. Thus, it was incumbent on the public sector investment to sustain the results.

1.5 Analysis of Existing Situation

22. Existing situation analysed in this section is centred on: (i) Profile of the Ministry; (ii) Institutional capacity of the Ministry to implement the plan; (iii) Employment levels in the sector; (iv) Biodiversity, Climate Change and Environment; (v) Gender equality; (vi) Food and Nutrition Security; and (vi) Poverty, Inequality and Social Protection.

1.1.2 Profile of Ministry of Food and Agriculture

23. MoFA leads in policy formulation and M&E for the development of agriculture in Ghana while implementation is by the decentralised levels as stipulated by the decentralised law i.e. Local Government Act, 2016 (Act 936). MoFA and the agricultural departments of the Regional Coordinating Councils (RCCs) and MMDAs operate at three administrative levels; national, regional and district.

1.1.2.1 National Level

24. The national directorates and agencies of MoFA perform the following functions: formulation of agricultural policies; sector planning; development and management of sector programmes and projects; formulation of annual budgets based on planned programmes and projects; adaptation and dissemination of agricultural technologies and advisory services; and monitoring & evaluation of the agricultural sector performance, among others. The Directorates of MoFA at the national level are categorised into Line and Technical. In addition, there are State-Owned Enterprises (SOEs) and sub-vented organisations which are also administered by MoFA and provide advice to Government on sector-wide issues affecting the development of agriculture.
25. The Line Directorates include Finance and Administration (F&A); Human Resource Development and Management Directorate (HRDMD); Policy Planning, Monitoring and Evaluation Directorate (PPMED) and Statistics, Research and Information Directorate (SRID). The Technical Directorates are Directorate of Crops Services (DCS), Plant Protection and Regulatory Services Directorate (PPRS), Animal Production

Directorate (APD), Veterinary Services Directorate (VSD), Agricultural Engineering Services Directorate (AESD), Directorate of Agriculture Extension Services (DAES), and Women in Agricultural Development Directorate (WIAD).

26. The SOEs and sub-vented organisations include; Grains and Legumes Development Board (GLDB), Ghana Veterinary Council (GVC), Ghana Cocoa Board (COCOBOD), Ghana Irrigation Development Authority (GIDA), Irrigation Company of Upper Region (ICOUR), Cotton Development Authority (CDA), and National Food and Buffer Stock Company (NAFCO).

1.1.2.2 Regional Level

27. Regional Agriculture Departments (RADs) are responsible for the co-ordination and monitoring of agricultural projects and programmes in their respective MMDAs. The RADs are under the Regional Coordinating Council and are expected to maintain technical relationship with MoFA national office and the MMDAs.

1.1.2.3 District Level

28. The District Agricultural Departments (DADs) are responsible for the following: (i) provision of agricultural services to stakeholders; (ii) determination of district agricultural priorities; and (iii) development and implementation of plans and projects. For efficient and effective service delivery, districts are demarcated into zones and operational areas. An operational area is manned by an Agricultural Extension Agent (AEA).

1.1.2.4 Channels of Communication at the Regional and District Levels

29. The Regional Director of Agriculture (RDA) reports to the Regional Minister through the Regional Coordinating Director in the performance of his/her duties (Act. 936, 2016). The RDA reports on

technical matters to the Chief Director (CD) of MoFA. At the district level, the District Director of Agriculture reports directly to the District Chief Executive (DCE) through the District Coordinating Director (DCD) and collaborates technically with the RDA.

1.1.3 Institutional Capacity Needs

1.1.3.1 Human Resource Capacity of MoFA

30. The Ministry ensures that there is an effective and stable human resource development and performance management framework consistent with the overall human resource needs of the sector.

Staff Strength

31. As at 2017, the Ministry had a total staff strength of 1,675 at post representing 47.6% out of the required staff of 3,517 thus leaving a deficit of 1,842 unfilled positions. The total staff strength comprises 23% females. Out of the total staff strength, 21% are professionals, 7% sub-professional, 34% technical staff and 38% support staff. Figure 1.5 shows the staff strength of MoFA by Professional Categorisation.
32. It is expected that, by the end of the planned period (2021), about 240 staff will go on retirement. The Ministry will therefore strive to employ more staff to replace the retiring staff and also increase the staff strength. In this regard, the Ministry has received clearance from Ministry of Finance (MoF) to recruit 3,000 staff in 2018 for both MoFA (300) and the Local Government Service (2,700).
33. Figure 1.5 depicts the age distribution of the staff. There are 607 staff (36%) who are between the 51-60 age group. This indicates an aging workforce. The Ministry has to take immediate steps to recruit young officers to augment the staff strength.



Figure 1.5: Age Distribution of MoFA Staff by Professional Categorisation

Source: MoFA HRDMD, 2017.

Staff Development

34. The Ministry provides opportunity for staff to upgrade their skills on periodic basis through both academic training programmes and short courses. A total of eighteen (18) staff participated in academic training programmes out of which 33.3% were females, whilst 348 staff participated in foreign and local short courses out of which 20% were females. This training arrangement is expected to continue to cover majority of staff on need basis annually. This will enhance staff capacity to plan, implement, monitor, evaluate and report effectively of this plan.

Institutional Capacity and Management

35. Management Capacity Index- a group method of evaluating the capacity of an institution to implement successfully a programme/project/plan has been used. The assessment translates individual perceptions on an issue or indicator into a numerical value ranging from 1 to 10. An eleven-point indicator, Table 1.5, has been used for the assessment. An index is computed and interpreted indicating the capacity of the institution; an index of 1 to 4 indicates the institution is a low performing institution, 5 to 7 indicates an average performance and 8 to 10 shows the institution is a high performer. From the table, the Ministry scored a grand average of 61.5 with an index of 5.6. The index of 5.6 means MoFA has an average capacity and management performance.

Table 1.5: Capacity and Management Index

Indicators	Score = 1	Score = 5	Score = 10	Indicator Average
1. Qualifications of personnel	Most staff do not have the required education	Some staff have the required education	All staff have the required education	8.5
2. Staff Compliment	There are numerous key positions that are unfilled	Most key positions are filled but there are still gaps	All positions in the established positions are filled	5.7
3. M&E Skills & Knowledge	Most staff do not have the requisite M&E skills and knowledge	Some staff have requisite M&E skills and knowledge	All staff have requisite M&E skills and knowledge	5.1

Indicators	Score = 1	Score = 5	Score = 10	Indicator Average
4. Availability of Funds	Funds available do not meet basic cost requirements	Funds available to meet basic costs, but will not allow the Ministry to carry out all activities in the M&E plan	Funds available meet basic costs, as well as enable Ministry to carry out all activities in the M&E plan	5.3
5. Utilization of Funds	Resources are spent at the discretion of management and not in pre-approved areas	Some resources are spent as approved but management continues to direct some funds inappropriately	Resources are spent as budgeted in accordance with the plan	5.8
6. Timely Access to Funds	Funds released 12 months behind schedule	Funds released 6 months behind schedule	Funds released on schedule	5.3
7. Leadership	Leadership is not able to address development needs due to low motivation, corruption, or lack of qualification	Leadership can complete short term tasks, but is not dynamic or able to envision the medium to long term development	Leadership is dynamic and motivates the staff and members to work together for long term development	5.8
8. Management	The full complement of management is not available, and what is present does not have the skills to direct DPCU activities	Partial complement of management but not able to handle all functions e.g. planning, budgeting, financial reporting, M&E, etc.	There is a full complement of management and technically skilled to handle all functions	6.8
9. Workload	Workload is so high that staff must work overtime to complete even basic administrative tasks	Workload forces staff to work overtime to complete planning and M&E functions	Staff can complete all jobs within regular working hours	6.8
10. Motivation/ Incentives	Basic central government motivation/incentives exist but are not accessible	Some central government motivation/incentives are accessible (training, maternity leave, overtime payment, etc)	Central government motivation/incentives are easy to access and development partners' incentives also exist	4.4
11. Equipment/ Facilities	Office space, furniture, and other facilities are woefully inadequate	Office space is adequate, but furniture and other facilities are lacking for some staff	All staff have access to appropriate office space, furniture and other facilities	3.8
Average Score				61.5

Source: Sample survey, 2017.

1.1.4 Biodiversity, Climate Change and Environment

36. Biodiversity is under serious threat as a result of human activities in Ghana. The main dangers are population growth and resource consumption, climate change and global warming, habitat conversion and urbanisation, invasive alien species, over-exploitation of natural resources and environmental degradation.

37. Agriculture is predominantly rain-fed in Ghana where the climate is dominated by the inter tropical convergence zone and the hot, dry winds (harmattan) blowing from the Sahara. Climate change scenarios show that mean temperatures in the Savannah Zones, predominantly in the north, can be expected to increase by approximately 2°C by 2050. Rainfall is not anticipated to change much (projected decreases of 11.5%) but dry season rainfall is expected to increase by 16-

20% following a cyclic pattern, with high rainfall periods being followed by droughts more or less each decade.

38. The most prominent climate related hazards affecting the agricultural sector include: (i) water stress for crops with increasing dry spells; (ii) degradation and erosion of arable land (with compound effects across wider landscapes); and (iii) intermittent floods and the resulting damage to critical infrastructure. Government approved a Climate Change Policy in November 2012, including sector based strategies, which include agriculture and food security as one of the five policy themes and strategic focus areas with particular emphasis on developing climate resilient agriculture and food systems. Another focus area is disaster preparedness and responses which prioritises the building of climate resilient infrastructure and increasing the resilience of vulnerable communities to climate related risk.
39. To mitigate the effects of climate change, Government will: (i) increase the availability and efficient use of water in smallholder crop and livestock systems to counter growing trends of water stress; (ii) mainstream on commercial basis proven technologies such as conservation agriculture, irrigation and integrated soil fertility management; (iii) additional interventions emphasising climate data collection and management through cross cutting institutional capacity building activities; (iv) make greater use of the African Risk Capacity initiative to insure against drought.
40. The need for mainstreaming climate variability

and change into agriculture development planning is recognised as a necessity to ensure sustainability of achievements in Ghana's national climate change policy. Deepening the understanding of farmers regarding current climatic trends and also improving their skills to cope effectively is essential. Support to water conservation and irrigation systems with the aim of ensuring availability of water for multiple uses whilst reducing flood related disaster risk in rural communities and promoting climate resilient will be pursued.

1.1.5 Agricultural Employment

41. Employment in agriculture (% of total employment) in Ghana was 41.90 in 2017. Its highest value over the past 26 years was 63.30 in 1991 (modelled ILO estimate). The percentage of female employment in agriculture however was 38.30 in 2017 and its highest value over the past 26 years was 59.30 in 1991. On the other hand, the percentage of male employment in agriculture in Ghana was 45.5% in 2017 whilst its highest value in the last 26 years was 67.0% in 1991 (Figure 1.6).
42. Employment is defined as persons of working age who were engaged in any activity to produce goods or provide services for pay or profit, whether at work during the reference period or not at work due to temporary absence from a job, or to working-time arrangement. The agriculture sector consists of activities in agriculture, hunting, forestry and fishing, in accordance with division 1 (ISIC 2) or categories A-B (ISIC 3) or category A (ISIC 4), (International Labour Organization, ILOSTAT database retrieved in November 2017).



Figure 1.6: Percent of Employed Males and Females in Agriculture.

Source: International Labour Organization, ILOSTAT database, 2017.

1.1.6 Gender Equality

43. Gender is an important dimension of poverty in Ghana where over 51% of the population are women with a Gender Inequality Index¹ (GII) coefficient of 0.54 as at 2017. Discussions on job creation options in agriculture for the youth need a gender-sensitive approach so that no one is marginalised and expected impact is realised.
44. In the agricultural sector of many developing countries including Ghana, women represent the main driving force and spend considerable amount of time planting, weeding, ridging, and harvesting, while simultaneously doing their regular chores. However, women are often found to be less productive than their male counterparts in the agricultural sector due to a number of discriminating factors. Indeed, empirical evidence suggests that women's deficits in agricultural productivity range from 4 to 50% across the world, but lie between 20 and 30% in the Sub-Saharan Africa region (FAO, 2011; Kilic et al, 2013). Some of the discriminating factors generally encompass land constraints (small land size, unequal land tenure systems and property rights), low application of modern inputs (such as chemical fertilizer, improved seeds, and pesticides), and limited access to advisory service.
45. Ghana, over the years, recognises that the fight against gender bias in agriculture is crucial to sustaining economic growth and ensuring food security. This is particularly germane in Ghana where the vast majority of the populations earn their incomes from agriculture-based activities. If the country could harness the full potential of the agricultural sector, then the impacts at household and national levels would be substantial.
46. To address the identified gender gap, the sector plan is gender-sensitive through the implementation of the Gender and Agricultural Development Strategy (GADS) which empowers the Ministry to be more gender-responsive in programme planning and implementation. To ensure inclusive development, the Ministry also employs the strategy of affirmative action in the delivery of its services. This allows the Ministry to target and support less privileged women, youth and physically challenged farmers. Women are a driving force in agricultural production, processing

and trade. They produce about 80% of the food and account for nearly 50% of the workforce in the sector. However, women often lack access to essential knowledge and training opportunities due to existing socio-cultural barriers. As a result, the potentials of women to increase agricultural productivity and profitability in Ghana remain untapped. There is need for women to go beyond reach and benefits of technologies to empowerment (Gender transformative approach) to sustain the role women play in agricultural development.

1.1.7 Poverty, Inequality and Social Protection

47. Ghana has done relatively well by meeting the UN Millennium Development Goals (MDGs) by reducing poverty by over 50%. According to the Ghana Living Standards Survey 6 (GLSS 6), poverty in Ghana declined from 51.7% in 1992 to 31.9% in 2006 and to 24.2% in 2013. Extreme poverty also declined from 16.5% in 2006 to 8.4% in 2013 (GSS, 2013). Poverty is a major cause and consequence of food insecurity. Thus generally, there has been significant reduction in Ghana's food insecurity. It is however important to note that the reduction has been varied across geographical areas and that overall, inequality has increased.
48. A Gini decomposition procedure was applied to the fifth and sixth rounds of the Ghana Living Standards Surveys. The results suggest that, in general, income inequality has increased marginally over the years (Gini coefficient of 0.66 in 2013 and 0.62 in 2006). Inequality was however higher in urban areas than in rural areas in 2013 with a reverse situation observed in 2006. The income component analysis suggests that wage employment income dominated household income in both rural and urban areas, even though the magnitude was higher in urban areas. Farm income was only dominant in rural communities in 2006. Self-employment and remittance income had consistent equalising effects on total household income distribution. The findings suggest that directing poverty reduction strategies towards specific income components will be crucial for effective pro-poor income distribution, (Jacob Novignon and Genevieve Aryeetey, 2015). According to the World Bank, in 2017, the poverty

1 The GII is a composite measure of differences in the distribution of achievements between women and men in three (3) dimensions: reproductive health, empowerment, and labour markets.

gap at the rural poverty line is 13.1%. Poverty headcount ratio at rural poverty line (% of rural population), is 37.9%.

1.1.8 Food and Nutrition Security

49. The malnutrition situations have worsened in recent years among most developing countries in sub-Saharan Africa, South-Eastern Asia and Western Asia (FAO, 2017). In Ghana, 19% of children under five are stunted, 5% wasted and 11% underweight (GDHS, 2014)² - an improvement in all three nutritional status indices in the last decade. Successive governments have addressed these challenges with key interventions. Notable among the past interventions is the release and promotion of Orange Fleshed Sweet Potato (OFSP) varieties to address vitamin A deficiency. Programmes and projects such as the West Africa Agricultural Productivity Programme (WAAPP), World Food Programme (WFP), Resilience in Northern Ghana (RING) and Jump Start OFSP Initiative in parts of Volta, Northern and Greater Accra regions have promoted awareness on malnutrition over the past years.

50. Further efforts toward food security improvement include investment in food security and emergency preparedness programme which aimed at increasing productivity and total production and improving food distribution through better agricultural mechanisation, irrigation development and the promotion of selected

staple crops and livestock. It is also aimed at improving food distribution to vulnerable groups to enhance the food and nutrition security status of poor and disadvantaged groups especially in times of disasters and crisis.

51. It is worth mentioning that Ghana is food self-sufficient in all the major staple crops except rice and millet (2017) as indicated in Table 1.6. The net food surplus for most staple increased significantly. The deficits in rice and millet production levels can be attributed to high national demand compared to quantity produced. From 2014 to 2017, staple crops such as roots and tubers (cassava, yam, and cocoyam) recorded sustained growth in production levels resulting in surpluses. This was stimulated by the high adoption of improved root and tuber varieties and related technologies introduced by interventions such as WAAPP, Cassava Adding Value for Africa (CAVA) and RTIMP. Maize for instance recorded an increment of about 227% in 2017 over 2016 estimates. Soybean, cowpea and groundnut also recorded surpluses in 2017. Milled rice has been recording deficits over the years. The marginal increase in rice (milled) deficit over the previous year could largely be attributed to high demand for rice.

52. The impressive surpluses recorded for maize and soybean could largely be attributed to the 'Planting for Food and Jobs' campaign, as these two crops were specifically targeted by the campaign.

Table 1.6: Deficit/Surplus of Selected Staple Crops (MT)

Crops	Deficit/Surplus (MT)							
	2011	2012	2013	2014	2015	2016	2017	% Change
Maize	90,359	230,070	45,784	21,069	-61,007	-68,537	87,012	3.0
Rice (Milled)	-354,205	-540,280	-503,875	-497,515	-608,602	-577,977	-580,300	3.1
Millet	35,762	26,775	2,814	-88	-5,904	-3,197	-1,508	-9.5
Sorghum	125,497	114,035	91,210	90,115	85,692	58,214	96,677	8.8
Cassava	6,169,042	6,221,456	7,151,811	7,431,688	7,681,605	8,130,414	8,969,099	2.1
Yam	1,930,112	2,072,344	2,355,910	2,314,737	2,266,545	2,413,745	2,982,777	-3.9
Cocoyam	240,663	170,353	141,199	152,304	93,602	144,209	159,663	4.0
Plantain	969,579	825,877	882,737	924,762	937,416	999,816	1,181,490	5.4
Groundnuts	133,121	116,630	50,773	59,137	32,723	43,543	46,516	5.4
Cowpea	79,115	60,215	38,194	35,759	30,004	33,879	34,966	-2.8
Soya bean	90,134	77,133	65,012	66,163	63,880	65,117	87,004	1.8

Source: SRID, 2017

² The Ghana Demographic Health Survey (GDHS) is conducted in every four years.

1.6 Summary of Issues under the GSGDA II

53. The activities of the agricultural sector fall under the third thematic area of GSGDA- accelerated agricultural modernisation and sustainable national resource management. Key performance issues identified include: (i) inadequate post-production infrastructure; (ii) limited funding of food and agricultural research and extension

services; (iii) low use of improved technologies in crops, livestock and fisheries; (iv) low use and high cost of improved inputs; (v) low access to mechanisation services along the value chain and low use of intermediate technologies (e.g. animal traction); and (vi) inadequate disaggregated data /statistics on the sector. Details are enumerated in Table 1.7.

Table 1.7: Summary of Issues of GSGDA II

Thematic areas of GSGDA II	Identified issues (from performance review and profile)
Ensuring and Sustaining Macro-Economic Stability	Inability of the sector to effectively facilitate sustainable food security, export and stable prices of foodstuffs.
Enhancing Competitiveness of Ghana's Private Sector	<ol style="list-style-type: none"> 1. Lack of conducive enabling agricultural environment for private sector activities e.g. infrastructure. 2. Poor quality of agricultural produce. 3. Low value addition.
Accelerated Agricultural Modernisation and Sustainable Natural Resource Management	<p>Component 1: Agriculture Productivity</p> <ol style="list-style-type: none"> 1. Inadequate post-production infrastructure. * 2. Limited funding of food and agricultural research and extension services. * 3. Low use of improved technologies in crops, livestock and fisheries. * 4. Low use and high cost of improved inputs. * 5. Low access to mechanisation services along the value chain and low use of intermediate technologies (e.g. animal traction). * 6. Inadequate disaggregated data /statistics on the sector. * <p>Component 2: Accelerated creation of decent jobs</p> <ol style="list-style-type: none"> 1. Limited numbers of commercially-oriented farms that can create high value jobs. * 2. High risks in agriculture. * <p>Component 3: Agricultural competitiveness and integration into domestic and international markets</p> <ol style="list-style-type: none"> 1. Low standardisation, grading and product differentiation in domestic and international markets. * 2. Agricultural production not driven by market demands. * 3. High post-harvest losses along the value chain. * 4. Low integration of commodity markets. * 5. Inadequate agricultural commodity volumes with the required specifications and quality to supply the international markets. * 6. High consumer preference for imported commodities that have local substitutes.



Thematic areas of GSGDA II	Identified issues (from performance review and profile)
	<p>Component 4: Production risks and bottlenecks in agricultural industry</p> <ol style="list-style-type: none">1. Poor rural infrastructure (poor road network, limited rural industries, inadequate energy and access to potable water etc.). *2. Limited value chain development and mainstreaming. *3. High cost of production and inadequate access to appropriate financial products. *4. Over-dependence on rainfall and inadequate measures to mitigate climate change effects. *5. High levels of environmental degradation. * <p>Component 5: Irrigation Development</p> <ol style="list-style-type: none">1. Climate variability, unpredictability and over-dependence on rain-fed agriculture. *2. Inefficient use of and low productivity of existing irrigation systems. *3. High cost of development and running of irrigation systems. *4. Poor construction of some irrigation infrastructure. *5. Low level of attention paid to small scale (informal) irrigation systems. * <p>Component 6: Agricultural Financing</p> <ol style="list-style-type: none">1. Limited flow of financial resources to agriculture and aquaculture. *2. Lack of targeting in subsidy provision. *3. Limited insurance products targeted at the agriculture sector. *5. Inadequate access to appropriate financial products. * <p>Component 7: Sustainable environment, land and water management</p> <ol style="list-style-type: none">1. Weak implementation of sustainable land management (SLM) policies and strategies at the community level. *2. Weak collaboration among relevant agencies to ensure SLM mainstreaming. *3. Lack of joint planning and implementation of SLM programmes with relevant institutions. * <p>Component 8: Crop development for food and nutrition security, exports and industry</p> <ol style="list-style-type: none">1. Inadequate diversification and competitiveness in staples and cash crops. *

Thematic areas of GSGDA II	Identified issues (from performance review and profile)
	<p>2. Inadequate development of, and investment in processing and value addition of the non-traditional cash crops including shea nuts, dawadawa and cotton. *</p> <p>3. High deficiency levels of vitamin A, iron and iodine in many foods consumed. *</p> <p>Component 9: Development of Agricultural Estates</p> <p>1. Limited commercial farms and inadequate agriculture estates. *</p> <hr/> <p>2. Difficulties in land acquisition for large-scale agricultural production and establishment of agriculture estates. *</p> <p>3. Constraints in provision of infrastructure (e.g. feeder roads, power etc.) for agriculture including irrigated production. *</p> <p>Component 10: Livestock and poultry development</p> <p>1. Low productivity of animal breeds. *</p> <p>2. High cost of feed and poor management practices. *</p> <p>3. Limited market linkages for livestock and poultry products. *</p> <p>Component 11: Fisheries and aquaculture development for food security and income generation</p> <p>1. Limited availability of improved fish seed and feed. *</p> <p>2. Weak institutional framework for collaboration for extension, training and research delivery. *</p> <p>3. Insufficient monitoring and control to ensure compliance with laws and regulations on fisheries. *</p> <p>4. Low production of culture fish to meet increasing demand. *</p> <p>Component 12: Improved institutional collaboration for agricultural development</p> <p>1. Inadequate capacity for planning, execution, policy analysis and M&E at national, regional and district levels. *</p> <p>2. Ineffective communication within and among MoFA directorates. *</p> <p>3. Inadequate and ineffective functioning of platforms for engagement of Private Sector and Civil Society with agricultural sector agencies at national, regional and district levels. *</p> <p>5. Weak sustainability of interventions. *</p>
Oil and Gas Development	Under-development of the petro-chemical industry to take advantage of the production of agro-inputs such as fertilizers.
Infrastructure and Human Settlements	<p>1. Use of urban and peri-urban fertile lands for real estate.</p> <p>2. Poor rural infrastructure.</p>

Thematic areas of GSGDA II	Identified issues (from performance review and profile)
Human Development, Productivity and Employment	<ol style="list-style-type: none"> 1. Inappropriate curricula of agricultural training institutions to address challenges in the agricultural sector. 2. Trained agriculturists do not go into farming. 3. Lack of enabling framework for Agricultural Technical and Vocational Education and Training.
Transparent, Responsive and Accountable Governance	Slow integration of District Department of Agriculture into the District Assemblies.

*** Issues asterisked are those of high priority. It must, however, be noted that most of the issues are interrelated.**



Mechanized land preparation

Chapter Two: Development Issues for the Medium Term

1 Development Issues for the Medium Term

54. The Government of Ghana has made significant effort in developing the agricultural sector. However, the sector is still faced with many development issues and challenges that need to be addressed to ensure that the modernisation goal being pursued is achieved. This Chapter outlines these development issues/challenges and prioritises those that need to be addressed immediately. The Chapter also links the development issues to the relevant development dimensions of the Medium-Term National Development Policy Framework (MTNDPF) 2018 – 2021. The development issues are classified into; (i) institutional; (ii) technical; and (iii) support services.

2.1 Development Issues and Challenges

Institutional

55. **Low level of public sector investment in the sector.** Ghana's public sector spending in the agricultural sector is among the lowest in Africa (FAO, 2016). The average agriculture expenditure from 2001 to 2015 including cocoa is 8.21% (below the CAADP 10% target) of the total national spending, of which about two-thirds was spent on operational expenses. Non-recurrent spending in the sector is predominantly donor driven with Development Partners contributing about 70% (World Bank, 2015). Thus, the need for the Government of Ghana to increase allocation to the sector to leverage investment from both Development Partners and Private Sector to drive production and job creation.

56. **Low institutional capacity of the public sector at all the three levels of government – national, regional and district levels to deliver the enabling environment for the growth of the sector.** The Ministries, Departments and Agencies (MDAs) in the agricultural sector have inadequate resources to deliver their mandate. The inadequate resources coupled with weak coordination among the MDAs and the challenges with the implementation of the

decentralisation policy are impairing the public sector in its effort to modernise the sector.

Technical

57. **The technical challenges include but not limited to:** (i) poor marketing systems; (ii) inadequate access to land and security of tenure for agriculture production; (iii) low transfer and uptake of research finding; (iv) low application of science and technology especially among smallholder farmers; (v) low quality of genetic material for crop, livestock and fish species; (vi) poor agronomic practices; (vii) poor husbandry practices and handling of livestock/ poultry products; (viii) inadequate quality feed and water standards for livestock and poultry; (ix) lack of modern housing for livestock and poultry production; (x) inadequate disease monitoring and surveillance system; (xi) inadequate access to appropriate mechanisation services; (xii) lack of appropriate water management systems for agricultural production; and (xiii) poor construction and management of irrigation infrastructure.

Support Services

58. **In addition to the institutional and technical challenges, the essential services to support proper functioning of the sector are inadequate.**

The prime development issues with these essential services include: (i) limited insurance for farming activities; (ii) inadequate start-up capital for the youth; (iii) lack of credit for agriculture; (iv) absence of risk mitigation measures and innovative financing mechanism for agricultural lending; and (v) limited and uncoordinated funding for research and technology development for the sector.

59. **The complexity of these development issues is stifling the agriculture modernisation and its catalytic role of transforming the economy.**

This has resulted in: (i) high average production cost; (ii) low productivity in all sub-sectors; (iii) inadequate development of/and investment in processing and value addition for agricultural

produce; (iv) high cost of conventional storage solutions for smallholder farmers; (v) high seasonal variability in food supply and prices; (vi) inadequate agribusiness enterprises along agricultural commodity value chains; and (vii) lack of youth interest in agriculture vis-a-vis ageing farmer population.

2.2. Prioritisation of Development Issues Linked to Development Dimensions of the Agenda for Jobs, 2018 - 2021

60. Table 2.1 outlines the prioritised development issues categorised under the development dimensions of the Agenda for Jobs, 2018-2021. This prioritisation was done using the Potential Opportunity Constraints and Challenges (POCC) analysis.

Table 2.1: Prioritised Development issues as categorised under Development Dimensions

DEVELOPMENT DIMENSION	FOCUS AREAS OF SMTDP 2018-2021	ADOPTED SUSTAINABLE PRIORITISED ISSUES
Economic Development	Agriculture and Rural Development:	<ol style="list-style-type: none"> 1. Poor marketing systems; * 2. High cost of production; * 3. Seasonal variability in food supply and prices; * 4. High dependence on seasonal and erratic rainfall; 5. Encroachment on designated irrigation sites; 6. High cost of energy for irrigation; 7. Poor storage and transportation systems; * 8. Poor farm-level practices; * 9. High cost of conventional storage solutions for smallholder farmers; * 10. Low quality and inadequate agricultural infrastructure; * 11. Inadequacy of farmer insurance; * 12. Inadequate agribusiness enterprise along the value chain; 13. Low levels of mechanisation; * 14. Low application of technology, especially among smallholder farmers, leading to comparatively low yields; * 15. Low transfer and uptake of research findings by stakeholders 16. Under-funding of Research Extension Liaison Committees (RELCs); * 17. Ageing farmer population and declining youth interest in agriculture; 18. Inadequate start-up capital for the youth; 19. Lack of long term credit for agriculture; * 20. Inadequate access to land for agriculture; 22. Untimely release of planting materials and certified seeds;

DEVELOPMENT DIMENSION	FOCUS AREAS OF SMTDP 2018-2021	ADOPTED SUSTAINABLE PRIORITISED ISSUES
		23. Inadequate private investment in agribusiness ventures; * 24. Inadequate dissemination of information on business opportunities along the agriculture value chain; 25. Weak regulatory regime to enforce standards. * 26. Low-quality genetic material of livestock species; * 27. Low level of husbandry practices; * 28. Low productivity and poor handling of livestock; * 29. Inadequate feed and water quality standards for livestock/ poultry; and 30. Inadequate disease monitoring and surveillance system.*
Social Development	Education and Training	1. Poor quality of education at all levels 2. Negative perception of TVET
	Food and Nutrition Security	1. Prevalence of hunger in certain areas* 2. Household food insecurity* 3. Prevalence of micro and macro-nutritional deficiencies 4. Inadequate efforts in managing food maintenance systems 5. Weak nutrition sensitive food production systems* 6. Infant and adult malnutrition 7. Increased incidence of diet related diseases 8. Weak FNS institutional framework and coordination* 9. Poorly coordinated M&E for FNS across sectors 10. Inadequate FNS research, data and information systems 11. Inadequate social mobilisation, advocacy and communication on nutrition 12. Inadequate nutrition education 13. Inadequate staff training on FNS at all levels 14. Weak nutrition sensitive planning and programming 15. Weak food control System*
	Population Management	1. High Youth Unemployment * 2. Increasing trend of irregular and precarious migration

*** Issues asterisked are those of high priority. It must, however, be noted that most of the issues are interrelated.**



Chicken Layers

Chapter Three: Development Policy Objectives and Strategies

61. Overview of the sector policy and national overarching policies: In the medium-term, government's overall goal is to "build a prosperous society" as enshrined in the National Medium Term Development Policy Framework (NMTDPF), "Agenda for Jobs: Creating Prosperity and Opportunity for All" (2018-2021). This goal entails: (i) optimising the key sources of economic growth; (ii) building a strong and resilient economy, capable of withstanding internal and external shocks; (iii) establishing a competitive and enabling business environment; (iv) transforming agriculture and industry; and (v) developing a robust tourism and creative arts industry.

62. In order to achieve this goal, the government has strategised around five (5) Development Dimensions namely; (i) Economic Development; (ii) Social Development; (iii) Environment, Infrastructure and Rural Development; (iv) Governance, Corruption and Public Accountability; and (v) Ghana's Role in International Affairs. The development of this plan was informed by the NMTDPF; and four out of the five development dimensions under the "Agenda for Jobs" impinge on the issues that the IFJ addresses. The agricultural sector will play a key role by mainly contributing to the first four development dimensions, however, the sector is expected to contribute significantly to the achievement of the fifth as well.

3.1 Policy Objectives and Strategies

63. The Government of Ghana under the Agenda for Jobs outlines the vision and approaches in addressing the socio-economic challenges through specific set of policies, strategies and programmes. The policies and programmes seek to remove the bottlenecks stifling the growth of the private sector and provide the enabling environment for growth, job creation and prosperity for all. The thrust of the Government's medium-term development programmes is to stabilise the economy characterised by strong, diversified and resilient growth through the

effective and efficient implementation of flagship programmes and projects such as; Planting for Food and Jobs, Rearing for Food and Jobs, One District - One Factory, One District - One Warehouse, and One Village - One Dam.

64. The Government is committed to transforming the agricultural sector with the aim to modernise the sector to catalyse industrial transformation of the rural economy resulting in national economic development. The IFJ was developed based on the identified development issues and the seven agricultural sector policy objectives and their respective strategies as listed below:

i. Promote a demand driven approach to agricultural development:

This will be done with a focus on adequate quantity, quality and timely delivery of agricultural produce. The capacity of value chain actors in negotiation and contracting will be built to enhance trade. The actions of actors will be guided by setting grades, standards and regulations within the market space.

ii. Ensure improved public investment:

Through enhanced inter-ministerial coordination, prioritised public investment in agricultural infrastructure such as development of feeder roads, market infrastructure, efficient transportation systems, industry grade power and irrigation will be pursued. At the decentralised level, the DCACT will be introduced to promote industry development through agriculture.

iii. Improve production efficiency and yield:

The government will ensure effective implementation of yield improvement programme through: (a) establishment of modalities and regulation framework for production of seed/planting materials and other agro-inputs; (b) increased investment in research and development; (c) provision of appropriate irrigation infrastructure; (d) intensification of agricultural mechanisation; (e) reinvigoration of agricultural extension

services; and (f) promotion of commercial and block farming.

iv. Improve post-harvest management:

Post-harvest activities such as storage, transportation, processing, packaging and distribution for selected food commodities, especially staples will be supported for the reduction of losses. Incentives to the private sector and district assemblies to invest in post-harvest activities will be made with a view to supporting sustained raw material supply to markets, small and medium scale agro-enterprises. This will feed into the one-district-one-factory agenda of government. National Food Buffer Stock Agency will be re-organised to be more efficient and market oriented to give incentives for private sector participation. At the decentralised levels, the government will provide storage infrastructure, with drying system and a warehouse receipt system.

v. Enhance the application of science, technology and innovation:

Operational cost along the agricultural value chains will be minimised through the application of ICT. This will include setting up a database on all farmers, drawn from the national identification system; promotion of an electronic payments system; technology transfer and input delivery; and dissemination of information on weather and prices.

vi. Promote agriculture as a viable business among the youth:

Agribusiness will be promoted among the youth through extensive sensitisation, education and re-orientation. The youth will be encouraged and supported to go into agricultural enterprises along the value chain by: (a) linking the youth to financial institutions for start-up capital; (b) capacity building in agricultural operations; and (c) access to land.

vii. Promote livestock and poultry development for food and nutrition security and income generation:

Livestock and poultry development will be pursued through the development of improved breeds, livestock housing, appropriate and cost effective feed development including the development of paddocks. Animal health will be ensured through the deployment of efficient veterinary

health care across the country to combat especially zoonotic and epidemic diseases.

65. To achieve these policy objectives, the plan will employ instrument based approach to stimulate the needed investments to comprehensively address the development issues impairing the sector.
66. A primary strategy is to promote enterprise-based agriculture and inclusive value chains through the implementation of PFJ and RFJ as the main driver of the 1D1F initiative. These will promote demand-driven agricultural development, focusing on improving productivity through the application of knowledge, information and technology to enhance the quantity, quality and timely delivery of agricultural produce for value addition. Another strategy is to engender a viable and competitive private sector by developing a business-friendly mind-set among the public sector agencies with the aim of fostering an enabling environment such that rural and agri-food system-investments can respond to market demands and supply bottlenecks. Government will ensure the provision of: (i) critical public infrastructure; (ii) tailor-made agricultural financing; (iii) need-based technical assistance or extension support system; and (iv) tax relief and incentives. The key features of the transformed agricultural sector of Ghana, among others are:
 - i. Organised agricultural landscape;
 - ii. Secured land tenure system;
 - iii. Availability of effective de-risking measures;
 - iv. Upgraded value chain organisation;
 - v. Increased agro-processing;
 - vi. Upgraded food distribution systems;
 - vii. Defined routes to markets;
 - viii. Enterprise based agriculture;
 - ix. Efficient small holder farmer organisations;
 - x. Drudgery taken out of primary production; and
 - xi. Generation of decent employment for the youth.
67. The specific strategies for the policy objectives of the Agenda for Jobs (2018 – 2021) are presented in Table 3.1.

Table 3.1: Specific Strategies for the Identified Development Issues and Policy Objectives³

Issues	Policy Objectives	Strategies
Poor marketing systems High cost of production Inputs	4.1 Promote a Demand driven approach to agricultural development	<p>4.1.1 Facilitate capacity building in negotiations, standards, regulations and skills development in contracting for actors along the value chain (SDG Targets 4.4, 17.9);</p> <p>4.1.2 Ensure implementation of the Ghana Commercial Agriculture Project (GCAP) to link both smallholder and commercial producers to industry (SDG Targets 2.3, 2.c)</p> <p>4.1.3 Develop market support services for selected horticulture, food and industrial crops to enhance production for export (SDG Target 2.3)</p> <p>4.1.4 Facilitate and support the establishment of stakeholder-controlled marketing companies for grains and selected products, including a Cashew Marketing Authority (SDG Target 9.3)</p> <p>4.1.5 Promote and expand organic farming to enable producers to access growing world demand for organic products (SDG Targets 2.3, 12.2)</p>
Inadequate development of and investment in processing and value addition	4.2 Ensure improved Public Investment	<p>4.2.1 Accelerate the provision of critical public infrastructure such as feeder roads, electricity and water (SDG Targets 2.a, 9.1)</p> <p>4.2.2 Develop tailor-made agricultural financing, especially long-term instruments (SDG Targets 2.3, 2.a, 9.3, 17.3)</p> <p>4.2.3 Design and implement needs-based technical assistance and extension support (SDG Target 2.a)</p> <p>4.2.4 Institute tax relief and incentives for agriculture investment (SDG Targets 1.4, 2.a, 9.3)</p> <p>4.2.5 Restructure MOFA to have a marketing department to work with MOTI to support the demand-driven agenda (SDG Target 16.6)</p> <p>4.2.6 Introduce District Chambers of Agriculture, Commerce and Technology (DCACT) with the mandate to promote agribusiness through an enhanced interface between the private and public sectors at district level (SDG Target 16.6)</p> <p>4.2.7 Support the development of at least two exportable agricultural commodities in each district (SDG Targets 1.1, 1.2, 17.11)</p> <p>4.2.8 Create District Agriculture Advisory Services (DAAS) to provide advice on productivity enhancing technologies (SDG Targets 2.3, 2.a, 16.6)</p>

³ The agricultural sector policy objectives in the Economic Development Dimension is numbered 4; hence numbering system in this table (Columns 2 & 3) are adopted for ease of referencing.

Issues	Policy Objectives	Strategies
<p>Low application of technology especially among smallholder farmers leading to comparatively lower yields</p> <p>Low level of irrigated agriculture</p> <p>Seasonal variability in food supply and prices</p> <p>Erratic rainfall patterns</p> <p>Encroachment of designated irrigation sites</p> <p>Ineffective gender and disability engagement in irrigation</p> <p>High cost of energy for irrigation</p>	<p>4.3 Improve production efficiency and yield</p>	<p>4.3.1 Establish modalities and regulatory frameworks for production of seed/planting materials, and other agro inputs, (SDG Targets 2.5, 2.a)</p> <p>4.3.2 Increase investment in research and development of climate resilient, high yielding disease and pest resistant, short duration crop varieties, taking into account consumer health and safety (SDG Targets 2.1, 2.a, 2.4)</p> <p>4.3.3 Reinvigorate extension services (SDG Target 2.a)</p> <p>4.3.4 Ensure effective implementation of the yield improvement programme (SDG Targets 2.1, 2.4)</p> <p>4.3.5 Intensify and increase access to mechanisation along the agriculture value chain (SDG Targets 2.3)</p> <p>4.3.6 Promote commercial and block farming (SDG Targets 2.3, 2.4)</p> <p>4.3.7 Implement the Government flagship intervention of “One Village, One dam” to facilitate the provision of community-owned and managed small scale irrigation, especially in the Afram Plains and northern savannah (SDG Targets 1.1, 1.4, 1.5,2.3, 2.4)</p> <p>4.3.8 Mobilise investment to expand and rehabilitate irrigation infrastructure including formal schemes, dams and dugouts (SDG Targets 1.1, 1.4, 1.5, 1.a, 2.a, 17.3)</p> <p>4.3.9 Support the development of both public and private sector large-scale irrigation schemes (SDG Targets 2.4, 17.17)</p> <p>4.3.10 Develop systems to harvest excess water for irrigation (SDG Targets 2.4 and 12.2)</p> <p>4.3.11 Develop and promote appropriate and affordable and modern irrigation technologies for all agro-ecological zones (SDG Targets 2.4, 12.2)</p> <p>4.3.12 Promote the use of solar and wind energy for irrigation (SDG Target 7.2)</p>
		<p>4.3.13 Advocate for differential energy pricing for irrigation schemes (SDG Targets 2.3, 2.a)</p> <p>4.3.14 Secure land title for designated irrigation sites (SDG Target 16.6)</p> <p>4.3.15 Mainstream gender and disability issues in irrigated agriculture (SDG Targets 1.4, 5.1, 10.2, 10.3)</p> <p>4.3.16 Develop policies and legal regime, and appropriate tenure arrangements for irrigation facilities (SDG Target 16.6)</p> <p>4.3.17 Develop the capacity of farmers to use meteorological information (SDG Target 12.8)</p>



Issues	Policy Objectives	Strategies
<p>Poor storage and transportation systems</p> <p>Poor farm-level practices,</p> <p>High cost of conventional storage solutions for smallholder farmers</p> <p>Low quality and inadequate agriculture infrastructure</p>	<p>4.4 Improve Post-Harvest Management</p>	<p>4.4.1 Support selected products beyond the farm gate in post-harvest activities, including storage, transportation, processing, packaging and distribution (SDG Target 12.3)</p> <p>4.4.2 Provide incentives to the private sector and District Assemblies to invest in post-harvest activities (SDG Target 17.17)</p> <p>4.4.3 Provide support for small- and medium-scale agro-processing enterprises through the One District, One Factory initiative (SDG Targets 1.2, 1.4, 2.3, 2.4, 2.a, 2.c, 8.3, 9.3, 9.4)</p> <p>4.4.4 Ensure continuous expansion and upgrading of road infrastructure connecting farms to marketing centres (SDG Targets 1.4, 2.3, 2.c)</p> <p>4.4.5 Re-organise the National Food Buffer Stock Agency to be more efficient and market oriented to give incentives for private sector participation (SDG Targets 16.6, 17.17)</p> <p>4.4.6 Facilitate the provision of storage infrastructure with drying systems at district level, and a warehouse receipt system (SDG Targets 2.3, 12.1, 12.3, 12.a)</p> <p>4.4.7 Facilitate trade and improve the environment for commercial activities (SDG Targets 2.b, 17.10, 17.12)</p> <p>4.4.8 Implement commodities trading centres (i.e. modern farmers' markets) across all MMDAs focusing on grain, vegetable and tuber marketing (SDG Target 2.c)</p>

Issues	Policy Objectives	Strategies
<p>Lack of database on farmers</p> <p>Limited insurance for farming activities</p> <p>Inadequate agribusiness enterprise along the value chain</p> <p>Low transfer and uptake of research finding</p> <p>Limited application of science and technology</p>	<p>4.5 Enhance the application of science, technology and innovation</p>	<p>4.5.1 Promote the application of information and communications technology (ICT) in the agricultural value chain in order to minimise cost in all operations (SDG Targets 2.4, 2.c, 5.b, 9.c, 17.8)</p> <p>4.5.2 Improve the effectiveness of Research-Extension-Farmer Liaison Committees (RELCs) and integrate the concept in the agriculture research system to increase participation of end users in technology development (SDG Target 2.a)</p> <p>4.5.3 Establish a database on all farmers, drawn from the national identification system (SDG Targets 16.9, 17.18)</p> <p>4.5.4 Promote insurance schemes to cover agriculture risks (SDG Targets 8.10, 10.5)</p> <p>4.5.5 Disseminate information on weather and prices (SDG Target 12.8)</p> <p>4.5.6 Strengthen research programmes of the Council for Scientific and Industrial Research (CSIR), as well as of the agricultural and related sciences departments of public universities and other institutions (SDG Target 2.a)</p> <p>4.5.7 Develop local fertilizer industry based on gas and petroleum resources to improve agricultural yield and save foreign exchange (SDG Target 2.3)</p>
<p>Ageing farmer population</p> <p>Lack of youth interest in agriculture</p> <p>Inadequate start-up capital for the youth</p> <p>Lack of credit for agriculture</p> <p>Inadequate access to land for agriculture production</p>	<p>4.6 Promote agriculture as a viable business among the youth</p>	<p>4.6.1 Support youth to go into agricultural enterprise along the value chain (SDG Targets 2.1, 2.3, 8.6)</p> <p>4.6.2 Develop and implement demand driven and competency-based training programmes to attract youth into off-farm activities such as handling, processing, packaging and transportation (SDG Targets 1.1, 2.1, 2.3, 8.6)</p> <p>4.6.3 Provide financial support for youth by linking them to financial institutions for the provision of start-up capital (SDG Target 8.3)</p> <p>4.6.4 Design and implement special programmes to build the capacity of the youth in agricultural operations (SDG Target 4.4)</p> <p>4.6.5 Support the youth to have access to land (SDG Target 1.4)</p>



Issues	Policy Objectives	Strategies
<p>Low quality genetic material of livestock species</p> <p>Low level of husbandry practices,</p> <p>Low productivity and poor handling of livestock/poultry products</p> <p>Inadequate feed and water quality standards for livestock</p> <p>Inadequate and poor quality data</p> <p>Inadequate disease monitoring and surveillance system</p> <p>Low levels of value addition to livestock and poultry produce</p>	<p>4.7 Promote livestock and Poultry development for food security and income generation</p>	<p>4.7.1 Finalize the Veterinary Services and Animal Production Bill and amend the Veterinary Surgeon's Law of 1992 (SDG Target 16.6)</p> <p>4.7.2 Enact legislation to cover poultry hatchery, livestock breeding, meat inspection and dumping of poultry (SDG Target 16.6)</p> <p>4.7.3 Ensure effective implementation of this Plan to modernise livestock and poultry industry development (SDG Target 2.3)</p> <p>4.7.4 Strengthen research into large-scale breeding and production of livestock across the country (SDG Targets 2.3, 2.a)</p> <p>4.7.5 Strengthen training facilities and establish additional ones in animal health (SDG Target 2.a)</p> <p>4.7.6 Intensify disease control and surveillance, especially for zoonotic and scheduled diseases (SDG Target 2.3)</p> <p>4.7.7 Promote cattle ranching and provide incentives to the private sector to develop grazing reserves for ruminants and livestock (SDG Targets 2.4, 16.1)</p> <p>4.7.8 Facilitate the establishment of Livestock Development Centres in the three agro-climatic zones in collaboration with the private sector, to promote the production of cattle and small ruminants like sheep and goats (SDG Target 2.4)</p> <p>4.7.9 Facilitate access to credit by the industry (SDG Targets 8.3, 8.10)</p> <p>4.7.10 Strengthen livestock and poultry research and adoption (SDG Target 2.a)</p>

68. This Plan provides a comprehensive instrument-based framework with well-crafted policy tools designed based on adopted policy objectives and strategies. In addition, it also took into consideration other development dimensions of the “Agenda for Jobs” that have bearing in agricultural development. The instrument based framework will empower the Government to: (i) align all donor interventions in the agricultural sector to Government priorities and flagship programmes; (ii) harmonise all interventions with the Government policy tools; (iii) effectively stimulate and leverage private sector investments; (iv) plan and manage for results; and (v) keep all partners accountable.
69. For Agricultural and Rural Development, the IFJ provides policy actions to support the implementation of flagship programmes, including; (i) Planting for Food and Jobs, (ii) Aquaculture for Food and Jobs, (iii) One Village One Dam, (iv) One District One Warehouse, (v) Planting for Export and Rural Development, and provides clear mechanisms to support other initiatives in other sectors including One District One Factory, and Ghana Beyond Aid. The approach employed provides explicit sub-programmes and specific policy implementation tools to support the implementation of each of these flagship programmes. The specific policy tool is structured to ensure that the target beneficiaries under each flagship programme can be reached with the strategic intervention(s) the government intends to roll out.

3.2 Alignment to International Frameworks

70. The IFJ is aligned to both the CAADP at the continental level and the SDGs at the global level. The formulation of the Plan employed the

CAADP principles to critically review the state of Ghana’s agricultural sector and have outlined the critical investments that will inure to the optimal impact and returns that will transform the agricultural sector and put it on a growth to attain a 6% annual growth rate in agricultural GDP. The IFJ provides a framework and the mechanisms to ensure that at least 10% of the public sector spending is allocated to the sector to develop the critical infrastructure, build the agricultural sector and direct transfer payments to actors along the agriculture value chains. The Plan is formulated to enhance the sectors performance through its direct impact on: (i) jobs creation and commercially viable opportunities for women and youth to create wealth; (ii) increase productivity to ensure food security and improved nutrition; (iii) smallholder farmers to have access to all the improved and climate smart technologies to strengthen resilience to climate change; among others as stipulated in the international frameworks.

71. In the same vein the IFJ encompasses the SDGs by providing the implementing policy actions to end poverty, protect the planet and ensure all people enjoy peace and prosperity. The 2018 -2021 investment plan for Ghana’s agri-food system provides clear and concise policies to promote: wealth creation, zero hunger, decent work and economic growth, industry, innovation and infrastructure, reduce inequality, promote sustainable agri-food communities, responsible consumption and production, climate action, protect our water bodies, life under water and create platforms for partnerships among governments, development partners, private sector actors, Civil Society Organisations, academia and smallholder farmers.



Cultivated rice field

Chapter Four: Development Programmes and Sub-Programmes

4 Development Programmes and Sub-Programmes

72. Chapter Four provides the programmes and sub-programmes areas as well as the strategic framework within which the IFJ will operate. These were developed from the Policy Objectives and Strategies of the NMTDPF (2018 – 2021) as described in Chapter Three to address identified

development issues as outlined in Chapter Two.

4.1 Strategic Framework

73. To achieve the objectives of the sector the plan adopts the Instrument-Based approach which has a menu of policy tools, informed by the Theory of Change as describe in Figure 4.1.

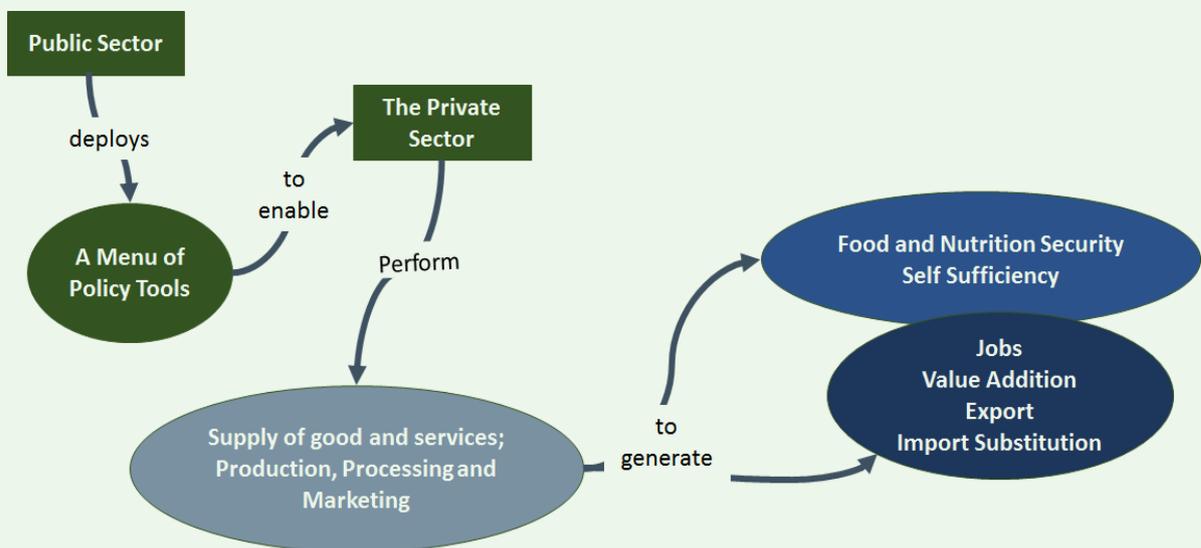


Figure 4.1: Theory of Change

4.2 The Instrument Based Approach

74. This approach consists of exclusive Programmes. Each programme consists of distinct Sub-Programmes (SP), and each SP consists of distinct Investment Areas (IA). Finally, under each IA, the Policy Tools (PT) to be implemented by the Government is presented (see Figure 4.2). Each policy tool is clearly spelled-out by providing clear answers to the following 8 questions: (1) What is the rationale; (2) What is Government's aim in implementing this measure; (3) What expenditures are eligible; (4) Which agencies are eligible to implement the policy tool; (5) Who are

the eligible beneficiaries; (6) What are the target results; (7) What is the budget (what amount of resources Government is going to devote to implementing the policy tool); and (8) What are the implementation modalities.

75. The approach empowers Government to: (i) align all donor interventions in the agricultural sector to Government priorities and flagship programmes; (ii) harmonise all interventions with the Government policy tools; (iii) effectively stimulate and leverage private sector investments; (iv) plan and manage for results; and (v) keep all partners accountable.

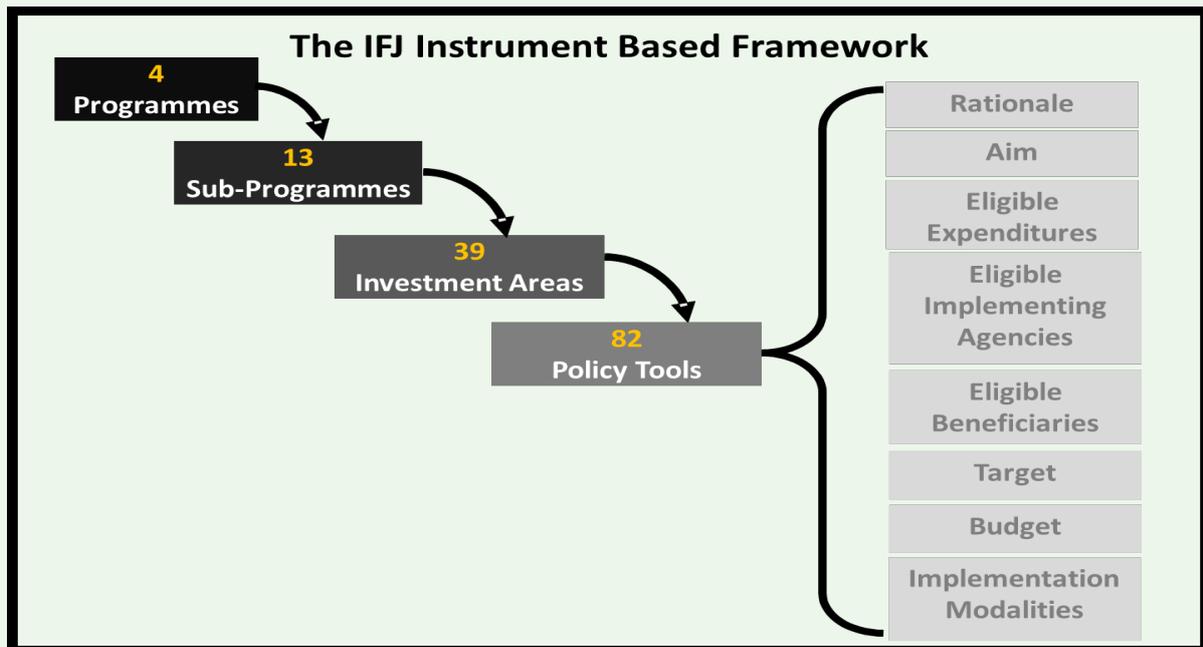


Figure 4.2: The IFJ Instrument Based Framework

76. The plan has 4 exclusive Programmes (Figure 4.3), 13 Sub-Programme, 39 Investment Areas, and 82 Policy Tools (Figure 4.2). The breakdown per programme is as follows:

- **Programme 1 – Sector Management and Administration:** 4 Sub-programmes and 18 Investment Areas.
- **Programme 2 – Crops and Livestock Development:** 5 Sub-programmes, 13 Investment Areas and a total of 56 Policy Tools.
- **Programme 3 – Agribusiness Development:** 2 Sub-programmes, 5 Investment Areas and a total of 15 Policy Tools.
- **Programme 4 – Sustainable Management of Land and Environment:** 2 Sub-programmes, 3 Investment Areas and a total of 11 Policy Tools.

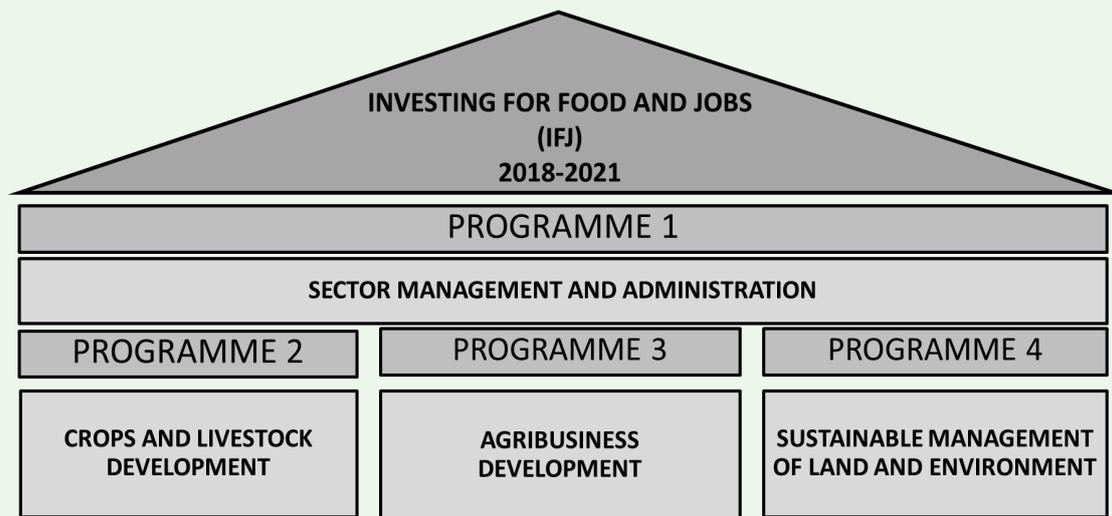


Figure 4.3: The 4 Programme Areas

4.3 Programme Description

4.3.1 Programme 1: Sector Management and Administration

77. The objectives of this programme are to: (i) improve institutional coordination within MoFA and other relevant stakeholder institutions; (ii) strengthen institutions within the Ministry; (iii) provide policy direction through the reviews, formulation and coordination of policies and programmes; and (iv) manage human resource, budget, finance, procurement & logistics, ICT services, public relations, and organisational development.
78. The programme consists of four (4) sub-programmes: SP.1.1 Finance and Administration; SP.1.2 Human Resource Development and Management; SP.1.3 Policy, Planning, Budgeting, Monitoring, Evaluation and Coordination; and SP.1.4 Research, Statistics, Information, Communication and Public Relations.

4.3.1.1 Sub-Programme 1.1: Finance and Administration

79. This sub-programme seeks to support an effective and efficient financial and administrative management within the Ministry. This is to be done by developing an effective electronic framework for financial management, asset management and administrative reporting. It also seeks to ensure the provision of adequate logistics for implementation of planned activities.
80. Government will provide services in the following five (5) Investment Areas: IA.1.1.1 Management of Assets and Liabilities; IA.1.1.2 Procurement

processes; IA.1.1.3 Policy development processes and related issues; IA.1.1.4 Auditing financial transaction; and IA.1.1.5 Provision of legal services.

4.3.1.2 Sub-Programme 1.2: Human Resource Development and Management

81. This sub-programme seeks to manage and improve the human resource capacity for all MoFA directorates and agencies through capacity building to enhance agricultural productivity. In addition, it will support the training of middle level personnel and vocational training. It will also ensure collaboration between HRDMD and other tertiary institutions on graduate and post-graduate training.
82. This sub-programme will be implemented through three (3) Investment Areas: IA.1.2.1 Facilitate staff training; IA 1.2.2 Conducting tracer studies and outreach programmes; and IA1.2.3 coordinate staff progression activities.

4.3.1.3 Sub-Programme 1.3: Policy Planning, Budgeting, Monitoring, Evaluation and Coordination

83. This sub-programme aims at improving policy formulation, planning and implementation in the agricultural sector. It seeks to strengthen engagements among stakeholders to enhance monitoring & evaluation, and coordination of policies and programmes that address issues and mitigate risks to achieving the sector objectives.
84. This sub-programme has four (4) Investment Areas: IA 1.3.1 Conduct monitoring and evaluation of all policies, programmes, and projects; IA 1.3.2 Develop and implement policies, plans and annual budgets; IA 1.3.3 Prepare investment guide for the

agricultural sector in Ghana; and IA 1.3.4 Coordinate programmes and projects implementation in the agricultural sector.

4.3.1.4 Sub-Programme 1.4: Research, Statistics, Information, Communication and Public Relations

85. The main aim of this sub-programme is to provide, timely and reliable data for policy formulation and decision making. This is to be done through: establishment and maintenance of a computer database for the agricultural sector; collaborating with relevant institutions to provide statistics; promoting e-agriculture to support operations of the agricultural sector; and strengthen the convergence of agricultural information to improve knowledge sharing and public access to information.
86. This sub-programme has six (6) Investment Areas: IA 1.4.1 Collection, processing and analysing crop production related data; IA 1.4.2 Collaboration with relevant stakeholders to collect, process and analyse livestock and poultry data; IA 1.4.3 Monitoring agricultural trade statistics, producer prices, farm input prices and transport charges for agricultural commodities; IA 1.4.4 Collection and analysis of weekly market prices of various agricultural produce at wholesale and retail levels; IA 1.4.5 Preparation of annual crop budget for major crops; and IA 1.4.6 Establish and maintain a national operational and geo-database.

4.3.2 Programme 2: Crops and Livestock Development

87. This programme seeks to increase agricultural productivity through modernisation of the agricultural sector resulting in increased food and raw material production, improved incomes and jobs for the youth. As part of the strategies to achieve these, the government will motivate farmers to adopt certified seeds, fertilizers, improved livestock and poultry breeds through the implementation of all Government flagship programmes in agricultural sector including the PFJ, RFJ, PERD and Green House Villages.
88. The government, through this programme is also committed to creating an enabling environment for more farmers to invest in the sector by subsidising agricultural inputs, provision of extension, mechanisation services, irrigation services and ready markets for the produce. The programme also seeks to improve warehousing and cold chain facility with the focus on reducing post-harvest losses. Nutrition sensitive agriculture and livelihood

diversification options will also be promoted through this programme.

89. This programme consists of five Sub-programmes: SP 2.1 Productivity Improvement; SP2.2 Mechanisation, Irrigation and Water management; SP 2.3 Post-harvest management and Agricultural Marketing; SP 2.4 Nutrition Sensitive Agriculture; and SP 2.5 Emergency Preparedness.

4.3.2.1 Sub-Programme 2.1: Production and Productivity Improvement

90. The agricultural value chain players require the use of improved technology to enhance productivity. Quality agricultural inputs such as certified seeds, fertilizers and improved livestock breeds are major determinants of high productivity and production in the agricultural sector. The high cost, coupled with unavailability of improved agro-inputs including seeds and fertilizers constrain farmers to low adoption and utilisation of these inputs. Inadequate and uncoordinated agricultural research and limited number of Agricultural Extension Agents (resulting in high AEA – farmer ratio of 1:1,885 *as at 2017*) are also challenges to value chain development.
91. Under the sub-programme, farmers' access to improved inputs will be enhanced through: the adoption of regulation on certification procedures; enhanced capacity of certification agencies; provision of incentives to farmers. The Government will improve extension service delivery through: the use of e-Agriculture; recruiting more AEAs to improve on technical service provision and technology dissemination to farmers; and building capacities of actors along the value chain.
92. Sub-programme 2.1 will be implemented through five (5) Investment Areas: IA 2.1.1 Promoting Improved Genetic Resources; IA 2.1.2 Enhancing Farmers' Access to Fertilizers, Agro-chemicals and Veterinary Medicines; IA 2.1.3 Promoting the Production and Use of Quality Feed; IA 2.1.4 Promoting Cost Effective Technology Development and Adaptation; and IA 2.1.5 Promoting Technology Dissemination.
- 93. Investment Area 2.1.1: Promoting Improved Genetic Resources**
- 94. PT 2.1.1.1 – Promotion of genetic improvements in livestock and plants to increase productivity and disease resistance:** The Government is committed to ensuring adequate production of high quality (high yielding, resistance to diseases, climate resilient, etc.) genetic resources (seeds, plant propagating

materials, livestock breeds, etc.) on a sustainable basis for priority commodities to enhance competitiveness. Government is committed to providing logistic support to researchers and protect their intellectual properties for the purpose of developing improved breeds of priority crops and livestock through grants and legislations. It is expected that at least one improved breed will be developed to address the specific needs of each priority commodity by 2021.

- 95. PT 2.1.1.2 – Enhancing seed certification capacity:** Certified seed is the starting point to a successful crop (productivity and competitiveness) as well as an important risk management tool. Government is therefore committed to maintain genetic identity and genetic purity of notified kind and varieties of high quality seeds and propagating materials through a robust certification system. This will be done by regulating certification procedures, strengthening certification agencies, bearing administrative cost and providing subsidy to enhance capacities of certification bodies. It is expected that the policy tool will enhance the national seed certification capacity to meet the national requirements.
- 96. PT 2.1.1.3 – Enhancing the production and utilisation of certified seeds (including plant propagating materials):** Use of good quality seed is a prerequisite for increased production. High quality seeds contribute to: increase agricultural productivity; improve food security; lower food prices and imports; and raise domestic economic activity. Government is therefore committed to promoting sustainable access to commercially viable high quality seeds through provision of matching grants to seed producing enterprises and providing subsidized seeds to farmers.
- 97. PT 2.1.1.4 – Enhancing the production and utilisation of improved livestock breeds:** Just like crops, high quality animal breeds help to increase livestock productivity; improve food security; lower food prices and imports and raise domestic economic activity. Government is committed to promoting sustainable access to commercially viable improved livestock breeds through promotion of private breeding ventures, matching grant support to breeding enterprises and provision of incentives to livestock farmers to use improved breeds. The six livestock stations will be strengthened to deliver more effectively

on their mandate. This will cover improved breed requirements for all the priority livestock species by 2021.

98. Investment Area 2.1.2: Enhancing Access to Fertilizer, Agro-Chemicals and Veterinary Medicines

99. PT 2.1.2.1 - Promotion of fertilizer blending:

To ensure efficiency in fertilizer use, Government is committed to promoting fertilizer blends that suit soil types and crop requirements. These blends include inorganic and organic fertilizers. Government will support fertilizer blending companies through tax incentives on fertilizer blending equipment and revenues. The target is to get the required number of fertilizer blending plants to meet the demand for blended fertilizers by smallholder farmers based on the value chain profiling by 2021.

100. PT 2.1.2.2 - Promotion of soil testing services:

Even though Government has been subsidizing fertilizer since 2008, yields have not increased significantly. Soil testing is not only useful, but also indispensable for economically sound fertilizer recommendations. Government is committed to ensuring the delivery of sustainable and commercially viable soil testing services to farmers to complement and enhance the effectiveness of the fertilizers as yield enhancing inputs by subsidising training of soil testing service providers, establishment of soil information system and supporting farmers to carry out soil testing. The target is to have soil testing services readily available to 3 million smallholder farmers in the production clusters by 2021.

101. PT 2.1.2.3 - Enhancing access to blended fertilizer:

Government is committed to providing financial incentives for farmers and fertilizer dealers to enhance farmers' access to blended fertilizer that meets their soils and crops requirements during the plan period. Government will provide a digressive fertilizer subsidy. The subsidy will target smallholder farmers in well-organised value chains. The target is to reach 3 million smallholder farmers aggregated into the inclusive value chains.

PT 2.1.2.4 - Promoting the safe use of agro-chemicals:

Effective use of agrochemicals ensures increased crop production, while wrongful use of these chemicals have severe effects on environment,

the health and safety of smallholder farmers. The Government is committed to ensuring that agro-chemicals are of the right quality and applied appropriately to enhance productivity and environmental sustainability. This will be achieved through developing and implementing strong regulatory system on quality of agro-chemicals and improving capacity of the users to handle agro-chemicals. The target is to reach all the users involved in the production clusters by 2021.

102. PT 2.1.2.5 - Promoting access to veterinary medicines: Effective use of veterinary medicines ensures increased livestock production. However, livestock producers have limited access to these medicines and in most cases livestock producers have limited know-how to effectively administer these medicines. Improper administration of veterinary medicines has severe effects on public health and safety. The Government is committed to ensuring that veterinary medicines are of the right quality, right quantity and are administered per producer recommendations to enhance productivity through regulation, tax incentives and subsidy. The target is to reach all the livestock production clusters including smallholder farmers in poor communities by 2021.

103. PT 2.1.2.6 - Promoting access to plant disease prevention and control methods: Loss of crops from plant disease is a perennial problem which often causes poor yields and stunts economic growth. Prevention, diagnosis, treatment and control of plant diseases are key to high yields and for thriving agricultural economy. Ensuring that farmers have access to plant disease prevention and control methods should be a priority. To ensure farmers access to quality plant disease prevention and control methods, Government will bear the cost of the design and operation of early warning systems to detect pest diseases and develop and implement a riposte plan by 2021.

104. Investment Area 2.1.3: Promoting the Production and Use of Quality Feed

105. PT 2.1.3.1 - Promotion of feed production: Improved feed is critical in enhancing livestock productivity and competitiveness. Government will promote the production of quality feed including pasture and fodder banks for livestock and aquaculture to enhance productivity and competitiveness of the sub-sectors through incentives and capacity building. The target is to

support feed production enterprises to produce high quality feed for livestock and aquaculture by 2021.

106. PT 2.1.3.2 - Enhancing access to quality feed: Access to improved feed is critical in enhancing livestock and aquaculture productivity and competitiveness. Government will promote access to quality feed for livestock and aquaculture to enhance productivity and competitiveness, to generate value addition and jobs. This will be achieved through digressive subsidy. The target is to reach all livestock and aquaculture production clusters by 2021.

107. Investment Area 2.1.4: Promoting Technology Development and Adaptation

108. PT 2.1.4.1 - Development and adaptation of technologies: Government recognises the critical role of research and knowledge generation for the transformation of the agri-food sector and is committed to enhancing the capacity of research institutions to respond to the needs of value chain actors. Government will support the setting-up of a mechanism to keep research institutions accountable to value-chain actors and promote the development and adaptation of technologies that targets the needs of value chain actors through provision of research grants as well as support to apex industry association to establish their own research fund.

109. PT 2.1.4.2 - Development and adaptation of knowledge packages for smallholder farmers: Farmers need functional literacy and knowledge to move from subsistence farming to enterprise based agriculture. Knowledge packages on the basic know-how to enhance the capacity of smallholder farmers for inclusion in the upgraded commodity value chains are important. The knowledge packages will be developed in various formats for easy dissemination among all categories of smallholder farmers. It is expected that the knowledge packages will be developed and disseminated to all the 3 million smallholder farmers enrolled in FBOs by 2021.

110. PT 2.1.4.3 - Promotion of agricultural research for plant/livestock breeding and disease and pest control: Agricultural research is vital for generating new knowledge and technology that drive productivity. In that vein, Governments should fund and promote agricultural research on plant/

livestock breeding and disease & pest control to generate new knowledge and technology for improvement. Government will bear the cost of developing a government run agricultural research facility to fund research institutions, universities, to engage in more agricultural research, also provide grants to private citizens and value chain players to fund innovative projects and initiations, cost of knowledge transfer to the farmers and other value chain actors, and tax breaks to private firms who will meet the government set requirements for agricultural research and development.

111. Investment Area 2.1.5: Promoting Technology Dissemination and Adoption

112. PT 2.1.5.1 - Dissemination of technologies to meet value chain players' demand: Value chain players require the use of improved technologies to enhance productivity of their operations in order to be competitive in both domestic and export markets. The limited number of Agricultural Extension Agents (1:1,885 as at 2017) is a challenge to extension service delivery. Government will improve extension service delivery by investing in the required infrastructure and logistics for public sector agricultural extension agents. In addition, Government will employ multiple approaches and methods and engage the private sector to participate in the operation and funding of extension service delivery. The e-Agriculture system will make knowledge and technology dissemination more effective and readily available to meet the need of value chain players, particularly women. The support for accessing the e-Agriculture system will be part of the incentives for smallholders to form FBOs.

113. PT 2.1.5.2 - Dissemination of knowledge packages: Knowledge packages developed by research and extension to enhance the efficiency of actors along value chains will be disseminated in various formats. Government will support the development, adaptation and dissemination of knowledge packages on functional literacy and agriculture targeting youth, women and the vulnerable. It is expected that the knowledge packages will be developed and disseminated to all the 3 million smallholder farmers enrolled in FBOs by 2021.

114. PT 2.1.5.3 - Promotion of access to skill-based trainings for the Youth: The Government is

committed to creating sustainable jobs in the agri-food sector for young women and men through access to innovative knowledge and skills using Competency Based Training (CBT) approach through existing government programmes such as Agricultural Technical Vocational and Educational Training (ATVET). This will be done through curriculum review and equipping the existing training centres and building capacity of tutors. It will also include grant for trainees to establish their businesses. A total of 15,000 youth (at least 40% women) will be targeted for training by 2021.

4.3.2.2 Sub-Programme 2.2: Mechanisation, Irrigation and Water Management

115. Agricultural mechanisation is essential for increased production and productivity. However, there are many challenges that need to be addressed to ensure mechanisation increases agricultural production and productivity to support the agricultural transformation agenda. These challenges include: the spatial arrangement of farm lands is not conducive for mechanisation service delivery; premature breakdown of farm machinery occasioned by low capacity of machinery operators; inadequate capacity of mechanics to diagnose and fix machinery problems; lack of genuine spare parts; high cost of developing agricultural lands; low level of local manufacturing and fabrication of agricultural machinery and implements. As part of a broad strategy to intensify the usage of mechanisation services, Government will support the re-organisation of farmlands into clusters to facilitate their access to agricultural machinery and thus create a thriving market for mechanisation services. Government will also facilitate the establishment of Farm Service Centres which will provide services along the value chain (land preparation to post-harvest) as well as backup spare parts for all agricultural machinery and equipment, in line with the Ghana Agricultural Engineering Policy (GAEP). It is expected that about 1 million additional hectares will be put under mechanisation through this process by 2021.

116. Agriculture in Ghana is predominantly rain fed which contributes to low productivity in the crop sub-sector. This sub-programme seeks to expand access to irrigated agriculture. In order to

ensure sustainability and efficiency of irrigation schemes, there should be: farmer participation in scheme management (operation and maintenance); expansion and improvement in irrigation infrastructure; facilitation of the setting and collection of irrigation service charges; and strengthening of the irrigation value chain.

117. Government will also incentivise the private sector to invest in irrigation development through: de-risking investment in irrigation; using innovative financing schemes such as taxation, insurance of bonds etc; using Public-Private-Producer-Partnership (PPPP), joint ventures; strengthening governance in the irrigation sector; and support effective linkages between actors in the irrigation value chain.

118. Sub-programme 2.2 will be implemented through two (2) Investment Areas: IA 2.2.1 Promoting Agricultural Mechanisation; and IA.2.2.2 Promoting Irrigation and Water Management.

119. Investment Area 2.2.1: Promoting Agricultural Mechanisation

120. PT 2.2.1.1 - Promoting re-organisation of farm lands to enable the delivery of mechanisation services to smallholder farmers: The current spatial arrangement of farm lands is not conducive for the delivery of mechanisation services to smallholder farmers. Another key constraint is the state of agriculture lands that are not properly developed for mechanisation. Thirdly, the available technology use by many smallholder farmers is obsolete. Government is committed to providing incentives for farmers to organise and properly clear and develop their farmlands to create a thriving market for mechanisation services. Government will bear the cost of subsidy for farm lands clearing and development. These incentives will be provided to farmers who have been properly organised within agricultural clusters, linked to an ACSE and profiled. It is expected that about 1 million additional hectares will be put under mechanisation through this process by 2021.

121. PT 2.2.1.2 - Promoting mechanisation service enterprises: There is ample evidence which suggests that productivity of smallholder farmers improves dramatically with usage of more farm power. Establishment of agricultural mechanisation hiring enterprises and development of an institutional framework for

managing these centres are essential to enhance access of mechanisation services to smallholder farmers. Government will continue to promote agricultural mechanisation hiring enterprises in collaboration with ACSEs to provide full range custom hiring services from land development to harvesting for the smallholder farmers. This would include small agricultural machinery and equipment that can be owned and operated by smallholders including women. These will be done by establishing more Agricultural Service Centres and upgrading the existing AMSECs to the same level. Government will achieve this through joint venture arrangements, financial arrangements and support repairs and maintenance service providers. It is expected that institutional framework for custom hiring mechanisation services will be in place by 2021.

122. PT 2.2.1.3 - Promotion of farm and post farm machinery manufacturing: The domestic supply of agricultural machinery, farm implements and equipment, primary processing machines is critical for the transformation of the agri-food sector and job creation. Government is committed to developing the domestic manufacturing of quality and functionally advanced machinery, farm implements and equipment at competitive prices to drive the transformation of the agri-food sector. It is expected that five production enclaves for the manufacturing of farm and post farm machinery are to be revamped along the production clusters by 2021.

123. PT 2.2.1.4 - Modernisation of agricultural holdings: Agricultural modernisation is essential to the increase in food production. Many African farmers still employ manual farming, which is the least efficient of farming methods. Modernisation of farms means investing in machinery and mechanisation to improve farm productivity and efficiency and ultimately the intensification of agricultural growth countrywide. Government is committed to helping farmers get the funds needed to invest in modernising their farms. Government's aim of improving the efficiency of the agricultural sector through modernisation will be achieved through trainings and incentives for machinery imports and financial institutions to give loans. These will be implemented mainly through the banks and other financial institutions to finance the modernisation of Ghana's agriculture.

- 124. PT 2.2.1.5 – Support to livestock housing:** Livestock Housing and Management Systems are usually treated from the standpoint of the level of intensification and three (3) are identified in the country, namely, (i) intensive system, (ii) semi-intensive system and (iii) extensive / free range. Generally, only commercial poultry and pig farmers use the intensive system of keeping in Ghana. This category of farmers invests substantially in housing, feed and equipment necessary for effective feeding, watering and for safety of eggs. The non-conventional livestock such as rabbits and grass-cutters are predominantly kept under intensive management systems with very low investment in housing. Farmers, particularly in the rural areas (who raise poultry of all types and pigs) use the free range system with little investment in housing. Cattle, sheep and goats are also kept mainly under extensive system with very low investment in housing (kraal) and equipment, but a few keepers use the semi-intensive system.
125. Government in its commitment to modernise agriculture will support farmers with long-term agricultural credit facilities through innovative financial products such as the GIRSAL to invest in livestock housing and equipment. The Government will also undertake the necessary trainings for livestock farmers to appreciate the importance of appropriate livestock housing. This will be accomplished through the establishment of efficient and improved model livestock housing units for training purposes.
- 126. Investment Area 2.2.2: Promoting Irrigation**
- 127. PT 2.2.2.1 - Delegation of public sector role in the development and management of large scale irrigation schemes:** Irrigation has mainly been supply-driven with Government providing the infrastructure and the management at full cost. Government is committed to supporting demand-driven instead of supply-led schemes for smallholder farmers. Under the demand orientation, Government responsibilities will be limited to major rehabilitation works on irrigation schemes, facilitate establishment of scheme management body, improve energy efficiency on the scheme and build capacities of Water User Associations. It is expected that all government irrigation schemes will be transferred to demand oriented schemes by December 2021.
- 128. PT 2.2.2.2 - Promoting community based managed small and medium scale irrigation schemes:** The current management of irrigation schemes needs to be improved and made more effective by reducing government involvement in frequent rehabilitation. Government is committed to ensuring sustainability and efficiency through farmer participation in scheme management (operation and maintenance). Government will provide main irrigation infrastructures, facilitate setting and collection of irrigation service charges and strengthen the irrigation value chain. It is expected that about 34,000 ha of irrigated land will be under community management by 2021.
- 129. PT 2.2.2.3 - Promoting individual micro and small-scale irrigation schemes:** A major constraint to the development of micro and small private schemes is the high cost of basic irrigation infrastructure. This includes construction of runoff reservoirs, drilling of underground water and use of perennial water bodies and rivers. Government is committed to addressing the constraints to investment and encouraging private investment in micro and small-scale irrigation: surface water, ground water and rainwater harvesting schemes. It is expected that about 5,000 ha will be supported under micro and small scale irrigation for production of high value crops.
- 130. PT 2.2.2.4 - Promoting enhanced water management in rain-fed agriculture:** The main challenge to enhancing productivity under rain-fed agriculture is the lack of improved water management systems in Ghana. Though the average annual rainfall in Ghana is about 1000 mm, its distribution poses problem for crop production because the critical crop water requirements are not met. Government is committed to ensuring water availability at critical production periods of crop growth by promoting simple techniques of water conservation, building capacity of farmers to store water for increased crop yield. It is expected that about 3000 ha will be supported under enhanced water management in rain-fed agriculture.
- 131. PT 2.2.2.5 - Promoting market-oriented irrigation development:** The growth in irrigated agriculture has been very slow due to the dependence on public investment. Government is committed to improving the growth in irrigation development through risk sharing and incentives to increase

investment in irrigation development through blended financing for efficient and effective water service delivery. This will be achieved through the development of effective Public-Private-Producer-Partnership (PPPP), joint ventures, strengthening governance in the irrigation sector and support effective linkages between actors in the irrigation value chain. It is expected that about 10,000 ha will be supported to develop irrigation under PPPP arrangement by 2021.

132. PT 2.2.2.6 - Addressing irrigation sector risks⁴:

Risks associated with irrigation development impede private sector investment in irrigation schemes. Government seeks to address these risks by partnering and providing the needed incentives to leverage private investment in irrigation. Government is committed to de-risking investment in irrigation development and management in order to incentivise private sector engagement in PPPP schemes. It is expected that a set of de-risking tools are designed and operational by end of 2021.

133. PT 2.2.2.7 - Mobilising public resources to finance the development of irrigation schemes:

Government is to provide the enabling environment to attract private investment for irrigation development. Government will use innovative financing schemes to attract investment required to develop the needed irrigation schemes. This will include taxation and issuance of bonds, among others. It is expected that the irrigation and drainage fund/facility is designed and operational by end of 2020.

3.1.2.3 Sub-Programme 2.3: Post-harvest Management and Agricultural Marketing

134. Government recognises that reducing post-harvest losses is critical for the development and profitability of value chains and thereby promoting access to markets. In order to increase farmers' access to markets, government must promote the aggregation of smallholder farmers into upgraded value chains. This will provide the value chain players access to the goods and services they need, including seed money subsidy in a commercially viable way. This enhanced system will reduce their cost of production and consequently increase their competitiveness

and wealth. It is also important to develop feeder roads and other infrastructure specifically the geographic areas where value chain clusters are located to reduce transaction cost, post-harvest losses and drive private sector investment. To foster the penetration of produce into the market, this sub-programme will: create a national market information system to gather, analyse and disseminate relevant information for agricultural sector; promote farmers' and community markets; promote SPS measures; quality foods and establish quality assurance certification process in food production, processing and distribution.

135. Sub-programme 2.3 will be implemented through three (3) Investment Areas: IA.2.5.1 Value Chain Development; IA.2.5.2 Market Intervention Schemes; and IA.2.5.3 Promotion of Quality Measures.

136. Investment Area 2.3.1: Value Chain Development

137. PT 2.3.1.1 - Promoting the aggregation of smallholder farmers into upgraded value chains:

Government is committed to promoting the aggregation of smallholder farmers into banks of production clusters. The inclusion of these clusters in upgraded value chain is critical for improving the competitiveness of the agricultural sector and wealth creation. In upgraded agri-food-systems, all value chain players have access to the goods and services they need, including seed money subsidy in a commercially viable way. It is expected that about 3 million smallholder farmers will be aggregated into agricultural production clusters by 2021.

138. PT 2.3.1.2 - Promoting the development of private sector led post-harvest facilities:

Government recognises that reducing post-harvest losses is critical for the development of value chains. Government is therefore committed to effectively addressing this challenge by supporting the private sector to develop post-harvest facilities and promote the management of these facilities. This will enhance the performance of the agri-food-systems and leverage these facilities to reduce market risk.

139. PT 2.3.1.3 - Development of feeder roads and other transport infrastructure:

Government

⁴ Country risks, commercial risks, water-specific risks, matching currencies, grace or transition period at commencement, financial third party partial risk guarantees, and termination payments.

will develop feeder roads and other transport infrastructure in the districts, specifically, the geographic areas where value chain clusters are located to reduce the transaction cost, post-harvest losses and drive private sector investment. The Government would promote the utilisation of locally developed and cost effective soil stabilisation materials for road construction. The development of feeder roads and other transport infrastructure provide incentives for value chain actors to engage in upgrading agri-food-systems. It is expected that the roads and other transport infrastructure will be provided for all production clusters that will be established.

140. PT 2.3.1.4 - Creating a national market information system to gather, analyse and disseminate relevant information for agricultural sector:

Government is committed to investing in market intelligence that will track developments in the domestic, regional and global markets to inform public and private investments. The aim is to provide the agriculture and food sector with accurate information and smart analyses on the current market trends. To implement this policy measure, Government will support the establishment, operationalisation and management of market observatory for priority commodities.

141. PT 2.3.1.5 - Promotion of farmer and community markets:

Smallholder farmers require easy access to markets to sell their produce. The Government is committed to providing accessible markets to enable easy trading of agricultural commodities in the bank of agricultural clusters. The aim is to provide modern infrastructure that will ease the trading of agricultural commodities. To implement this policy tool, Government will bear the cost of providing public lands and facilities for agricultural commodity markets. This policy will be implemented by the MLGRD and the MMDAs.

142. Investment Area 2.3.2: Market Intervention Schemes

143. PT 2.3.2.1 - Developing and enacting market intervention schemes for specific agricultural products:

Market Intervention Scheme is a price support mechanism implemented by the Government for storage of agricultural commodities in the event of a fall in market prices. Typically, an ad-hoc mechanism, its objective

is to protect farmers from making distress sales in the event of bumper harvest during the peak arrival period when prices fall to very low level. Government is prepared to enact market intervention schemes when needed to stabilise agri-food market. Government will develop a robust criterion that will be used to determine the commodities that require such an intervention. This policy will be implemented by both DADs and MoFA (SRID-Market Observatory unit) - providing the technical determination of the market. Market studies conducted by the Market Observatory Unit to determine market stabilisation prices and providing advisory services to producers through the MLGRD – DDAs. MoTI will provide information on the regional trade implications of the stabilisation prices and restrictions on the importation of such commodities from neighboring countries. This policy measure will introduce the commodity registers using the VC profiling to register all farmers that will benefit from the scheme and using the market information system to model the Government support.

144. PT 2.3.2.2 - Establishing support price mechanism for key commodities:

A support price mechanism will be put in place and enforced by the government for key commodities to assist farmers and protect them from unsustainable markets prices. This will be implemented by the NAFCO and other relevant agencies to protect smallholder farmers and stabilise markets by undertaken studies to determine the optimum prices.

145. PT 2.3.2.3 - Government procurement from domestic farmers:

When market prices for certain agricultural products fall below a predetermined level, the government may intervene to stabilise the market by purchasing surplus supplies, through standardisation which may then be stored until the market price increases. The government also intervenes to buy and store products to influence markets and to build up reserves for emergencies. This aims at stabilising markets in emergency situations and building up Ghana's food reserves. NAFCO will be the main implementing agency.

146. Investment Area 2.3.3: Promotion of Quality Measures

147. PT 2.3.3.1 - Promoting Sanitary and Phytosanitary Measures (SPS): SPS agreements are measures to protect humans, animals, and plants from diseases, pests, or contaminants. The Government is committed to set and enforce standards that meet the requirements of the WTO's SPS agreement to ensure that food is safe for consumers, and to prevent the spread of pests or diseases among animals and plants. This will require the strong collaboration among MoFA-PPRSD, Food and Drugs Authority (FDA) and the Ghana Standards Authority (GSA).

148. PT 2.3.3.2 - Promoting food quality labels: Quality food labels are critical to ensure tradability of commodities, competitiveness in the global market and compliance to sanitary norms. Government's aim is to promote food quality in all aspects of food production, processing and distribution. To implement this tool, Government will strengthen capacity of actors in food safety activities along the value chain and enhance the capacity of quality agencies to enforce the regulation.

149. PT 2.3.3.3 - Establishing quality assurance certification process in food production, processing and distribution: To ensure food safety, the government is committed to strengthening PPRSD, FDA and GSA to provide quality assurance in food production, processing and distribution to enhance the growth of Ghana's agricultural market, both domestically and internationally. To implement this PT, Government will update, develop and enforce standards in food production, processing & distribution sectors. Government will also provide equipment & infrastructure for testing and enforcing assurance schemes.

150. PT 2.3.3.4 - Participation of farmers in food quality schemes: Food quality schemes are critical to ensure food safety and quality standards are adhered through the food production, processing and distribution processes. Government will provide the required regulatory and market environment as well as support farmers to invest in food safety and quality schemes. These food safety and quality schemes will be designed to ensure the farmers derived benefits from the schemes using traceability and good market information system. The Government will promote food safety and quality schemes by

providing one-time cost sharing incentive for the certification and traceability systems to farmer organisation who will want to participate in such schemes.

4.3.2.4 Sub-Programme 2.4: Nutrition Sensitive Agriculture

151. Ghana continues to make progress in improving nutritional status of children. In recent times, Ghana has not suffered widely from food insecurity due to improved food production. The domestic production of selected staples continues to exceed national requirements. However, there is household food insecurity in some parts of the country. There is also high child malnutrition and prevalence of micro nutritional deficiencies and increased incidence of diet-related non-communicable diseases.

152. This sub-programme seeks to sustain and improve upon the gains made over the years with regard to nutrition and address the associated challenges. Over the medium-term, this sub-programme aims at addressing: prevalence of hunger; weak nutrition-sensitive agriculture; inadequate public education on nutrition.

153. Sub-programme 2.4 will be implemented through one (1) Investment Area IA.4.2.1 Promotion of nutrient rich foods.

154. Investment Area 2.4.1: Promotion of Nutrient Rich Foods

155. PT 2.4.1.1: Implementing food fortification measures: Micronutrient deficiencies are more likely to be found amongst the most resource poor, food insecure and vulnerable households in the country. Food fortification programmes make an important contribution to the reduction of micronutrient malnutrition. This is especially important where existing food supplies, due to limited access, fails to provide adequate levels of some micronutrients and essential vitamins in the diet. This policy tool aims at implementing food fortification programs to combat malnutrition in vulnerable populations, with a particular focus on women and children. Government will set fortification standards, especially Rice and Maize (flour and corn mill) fortification and create the necessary legislation and enforce them.

156. PT 2.4.1.2 - Promoting measures to strengthen dietary diversity: The more diverse a households' diet is, the healthier it will be. This is especially important amongst resource poor and food insecure communities and households. Hence, this policy tool aims at promoting measures to strengthen dietary diversity. Government will educate and train consumers on appropriate food combinations of available foods to improve nutrition. It will also develop and enforce policies for serving locally available foods (Fresh foods, vegetables) at workplaces and public functions. Government will also develop and promote food-base dietary guidelines. Government will again promote the production and consumption of bio-fortified crops (e.g. Orange Fleshed Sweet Potato, Yellow Cassava and Maize, etc.) and kitchen garden and food preservation.

157. Policy Tool 2.4.1.4 – Enhancing the production and consumption of improved livestock breeds. High quality animal breeds help to increase livestock productivity; improve food security; lower food prices and imports and raise domestic economic activity. Government is committed to promoting farmers' access to sustainable and commercially viable improved livestock breeds. The Government will bear the cost of: (i) promoting private breeding enterprises including as a joint venture between livestock value chain actors (ACSE model); (ii) matching grant to private breeding enterprises (farms and hatcheries) to cover the cost of infrastructure, equipment, bio-security systems and training of staff; (iii) subsidy to farmers (50%) to cover the cost of improved breeds the first 2 years. (iv) Government will strengthen the six breeding stations (improved infrastructure and restocking of improved breeds where necessary). This will cover the improved breed requirements for all the priority livestock species by 2021.

4.3.2.5 Sub-Programme 2.5: Early Warning Systems and Emergency Preparedness

158. Emergency preparedness describes the country's readiness to respond to need of victims of natural hazards and other calamities such as floods, pest and disease outbreaks, climate change etc. This can be attained by building capacities to respond to such emergencies. This sub-programme aims at ensuring appropriate and efficient emergency preparedness and response in-country with

respect to agricultural commodity supply.

159. Sub-programme 2.5 will be implemented through two (2) Investment Areas IA.2.5.1 Emergency Readiness; And IA.2.5.2 Emergency Response.

160. Investment Area 2.5.1: Emergency Readiness

161. PT 2.5.1.1 - Surveillance and prevention of plant pest and diseases: Effective national capacity to detect and monitor plant pests and diseases is critical in creating an enabling environment for private-sector-led agricultural transformation. Hence, this policy tool aims at preventing and controlling plant pest and diseases that may have substantial effect on the stability of food supply through direct losses. Government will bear the cost of: (i) design and operation of early warning systems to detect pest diseases; (ii) develop and implement riposte plans; and (iii) strengthening the capacity of SPS services (laboratory equipment, training of staff, international accreditation, establishing of plant clinics).

162. PT 2.5.1.2 - Surveillance and prevention of animal pests and diseases: Effective national capacity to detect and monitor animal diseases is critical in creating an enabling environment for private-sector-led agricultural transformation. Hence, this policy tool aims at preventing and controlling animal diseases. Government will bear the cost of: (i) developing a veterinary legislation on the prevention and control of animal diseases; (ii) the design and operation of early warning systems to detect animal diseases and implement a riposte plan; and (iii) livestock vaccinations.

163. PT 2.5.1.3 - Early warning systems for natural disasters: Early warning systems are a means by which farmers and affected communities are given relevant and timely information in a systematic way prior to a disaster in order to be able to make informed decisions and take action. Hence, this policy tool aims at establishing functional early warning systems for natural disasters. Government will bear the cost of: (i) creating a national agency responsible for coordinating hazard identification, vulnerability and risk assessment; (ii) creating a monitoring and warning service; (iii) creating functional communication channels; (iv) instituting appropriate disaster preparedness measures and; (v) administrative cost for the preparation and adoption of an early warning systems regulation.

164. PT 2.5.1.4 - Knowledge dissemination measures and training of farmers in disaster preparedness methods:

Disaster preparedness is essential to the reduction of disaster risk and to quick recovery from disasters. Effective disaster preparedness requires the heavy involvement of farmers and communities at risk because they would be the ones instituting disaster preparedness methods on their farms to minimise damage by unavoidable disasters. Hence, this policy tool aims at informing and training farmers in disaster preparedness methods. Government will bear the cost of: (i) developing best disaster preparedness farm practices; and (ii) training and knowledge dissemination measures to educate farmers.

165. PT 2.5.1.5 - Provision of subsidised disaster insurance products:

Farmers and other value chain players are incredibly vulnerable to the unpredictable nature of weather. Flooding from rainfall, monsoons, tornadoes etc. which farmers have no control over, can severely set farming operations back or even sound a death knell to a farmer's business. Disaster insurance is a cost which most smallholder farmers cannot afford but is essential to helping them recoup their losses and recover from the damage of unpredictable weather phenomena. Farmers who are covered by insurance are also more likely to invest more in their farms, move toward cash crops which are more lucrative and be eligible for capital loans which grow their enterprises. Governments which subsidise disaster insurance to vulnerable farmers see their agricultural sector grow substantively as a result. Hence, this policy tool aims at protecting farmers against lasting damage from disasters. To implement this policy measure, Government will bear the cost of: (i) incentivising insurance companies to provide disaster insurance packages; (ii) subsidising of disaster insurance; and (iii) educating farmers on the importance of disaster insurance.

166. PT 2.5.1.6 - Promotion of seed and grazing reserves, and storage facilities:

Access to quality seed is essential to crop production and the livelihood of farmers. Disasters, both natural and man-made, can have a devastating effect on seed availability and consequently, the agricultural market. Governments do well to invest in and encourage investment into seed reserves and storage facilities to ensure farmers have seed security after disasters. Hence, this policy tool

aims to promote disaster preparedness measures in the form of seed, grazing reserves and storage. Government will bear the cost of: (i) knowledge dissemination of the importance of seed storage and storage measures; (ii) building warehouses and storage facilities for national seed reserves; (iii) subsidising seed and grain storage for qualifying farmers; and (iv) cost of managing storage facilities and minimising deterioration of stored seeds.

167. Investment Area 2.5.2: Emergency Response

168. PT 2.5.2.1 - Rapid response and control of plant pest and diseases:

While prevention is the most effective pest management strategy, it is vital to have a rapid response strategy in place to address inevitable plant pests and diseases. Hence, this policy tool aims at establishing a rapid response strategy for plant pests and diseases. Government will bear the cost of: (i) establishment/strengthening of plant pest disease control agency; (ii) information dissemination and training of farmers to recognise signs of an infestation; (iii) establishment of communication channels to allow farmers to report incidents of infestations; and (iv) incentivising research institutions to research and provide rapid response solutions for pests and diseases.

169. PT 2.5.2.2 - Rapid response and control of animal pests and diseases:

While prevention is the most effective pest management strategy, it is vital to have a rapid response strategy in place to address inevitable animal pests and diseases. Hence, this policy tool aims at establishing a rapid response strategy for animal pests and diseases. Government will bear the cost of: (i) establishing/strengthening animal pest and disease regulation bodies; (ii) information dissemination and gender-sensitive training of farmers to recognise signs of an infestation; (iii) establishment of communication channels to allow farmers to report incidents of infestations; (iv) incentivising research institutions to research and provide rapid response solutions for pest diseases; and (v) promotion of bio-safety through enforcement of the Ghana Biosafety Act, 2011 (Act 831).

170. PT 2.5.2.3 - Rapid Response and control of natural disasters:

This aims at establishing a system for rapid response to the incidence of natural disasters in order to control the impact of the natural disasters on farmers, their activities

and on other stakeholders in commodity value chains. It seeks to strengthen the links between the appropriate disaster management institutions and the farmers in order to reduce the devastating impacts of natural disasters on farming populations and farm operations. This will be achieved by strengthening collaboration with the National Disaster Management Organization (NADMO) and other CSOs which are active in that space. The capacities of these identified institutions will also be built to enable them carry out their mandates effectively.

171. PT 2.5.2.4 - Provision of ex-post/ante aid to compensate for natural disasters and disease epidemics:

Disasters and disease epidemics often do lasting damage to farm enterprises because farmers often do not have the financial means to recover from them. Governments should make a commitment to provide post and ante aid to help farmers recover after natural disasters and epidemics. Hence, this policy tool aims at helping farmers recover from natural disasters and disease epidemics. Government will continue to support: (i) the running of the national disaster relief agency and; (ii) direct payments to farmers for damages not covered by insurance.

172. PT 2.5.2.5 - Rehabilitation of affected areas:

Rehabilitation and reconstruction are often required after a natural disaster if the economy is to recoup and recover from it. Governments should make a commitment to help in rebuilding efforts after disasters. Hence this policy tool aims at rehabilitating disaster affected areas. Government will bear the cost of: (i) funding the rebuilding and rehabilitation of damaged agricultural infrastructure; (ii) supporting NGOs who engage in rehabilitation and rebuilding work; and (iii) offering tax breaks to for profit organisation supporting the rehabilitation of affected areas.

4.3.3 Programme 3: Agribusiness Development

173. Agriculture in Ghana is private sector led. The key role of the public sector therefore, is to create an enabling environment for private sector to invest and grow. This Programme is mainly aimed at achieving this goal by facilitating access to appropriate/innovative agricultural finance; investing in adequate public infrastructure to leverage private sector investment in the sector; and promoting agricultural trade.

174. This programme consists of 2 Sub-programmes (SP): SP. 3.1: Promotion of Private Sector Investment in Agriculture; SP. 3.2: Agricultural Financing.

4.3.3.1 Sub-Programme 3.1: Promotion of Private Sector Investment in Agriculture

175. The role of private sector in agricultural development in Ghana cannot be over emphasised. Majority of investment in the sector is borne by the private sector. In order to take advantage of public sector investments and optimise returns, the private sector needs to coordinate and collaborate effectively among each other. This coordination however is weak and needs to be strengthened. This sub-programme seeks to create a platform to promote private sector operations and linkages in the agricultural sector.

176. Sub-programme 3.1 will be implemented through two (2) Investment Areas: IA.3.1.1 Promoting a Nexus of Essential Agricultural and Food Systems Private Enterprises; and IA.3.1.2 Promoting Agricultural Industry Associations.

Investment Area 3.1.1 Promoting a Nexus of Essential Agricultural and Food Systems Private Enterprises

177. PT 3.1.1.1 - Promoting Agricultural Cluster Service Enterprises (ACSE) and their sector or regional apexes:

The aim is to promote ACSEs as value chain driver enterprises. The ACSEs can own and operate processing plants. These hub enterprises will be set-up as joint ventures between farmer organisations, private operators, and Government which will progressively transfer its shares to the general public through equities or debts. ACSEs will be licensed to manage warehouses as collateral.

178. PT 3.1.1.2 - Promoting Market Hub Enterprises (MHEs):

The aim is to promote MHEs as drivers to transform food distribution systems in Ghana. MHEs will own and operate food market hubs equipped with adequate infrastructure close to major cities. They will be specialised in grouping food commodities and distributing to wholesalers. MHEs will be promoted as joint venture between ACSEs, Banks, private firms, and Government that will progressively transfer its shares to the general public through equities or debts.

179. PT 3.1.1.3 - Promoting Small and Medium Rural Enterprises (SMRE):

Government's aim is

to promote a wide range of small and medium enterprises needed to provide required goods and services to enhance the effectiveness and efficiency of commodity value chains. This will also create off-farm employment especially for the youth.

180. Investment Area.3.1.2: Promoting Agricultural Industry Associations

181. PT 3.1.2.1 - Promoting the creation of an industry apex agency: Government's aim is to promote the setting-up and operation of the AFIA as the apex organisation to protect the interest of all commodity value chain players. AFIA will facilitate and support government to manage the GADF to ensure proper accountability. AFIA will be an autonomous (administration and finance) private sector agency, equipped with a corporate governance system that meets international standards. Under this PT the AFIA is expected to reach its financial autonomy by end of year 3.

4.3.3.2 Sub-Programme 3.2: Agricultural Financing

182. This sub-programme aims at ensuring increased and sustainable access to innovative financing by agri-food enterprises and agribusinesses along commercially viable and competitive agricultural value chains. The focus of this sub-programme is to de-risk and eliminate bottlenecks regarding financing the agricultural sector through the use of innovative instruments.

183. Sub-programme 3.2 will be implemented through 3 Investment Areas: IA.3.2.1 Agricultural Risk Sharing; IA.3.2.2 Agricultural Finance and Credit Facilities; and IA.3.2.3 Capital Market Instruments for Agriculture.

184. Investment Area 3.2.1: Agricultural Risk Sharing

185. PT 3.2.1.1 - Developing and enacting regulation on agricultural clusters and monitoring its implementation: The aim is to secure formal contractual relationships between value chain players, specifically, farmers and ACSEs and other firms. This will contribute to creating an enabling environment for smallholders' inclusive value chains. Government will support the process of developing, validating, and enacting the regulation, and monitoring its implementation.

186. PT 3.2.1.2 - Promotion of specific market and production contracts: The aim is to strengthen farmers and firms' capacity with regard to

signing and implementing specific market and production contracts, e.g. derivative contracts or future contracts, and option contracts. Under this PT, Government's expenditures will focus on developing and disseminating knowledge material (i.e. models, guidelines, and training materials) on such contracts.

187. PT 3.2.1.3 - Promotion of agricultural insurance instruments:

Government's aim is to provide a suite of agricultural insurance products to value chain players in order to enhance their access to finance and mitigate climate shocks. Government will facilitate the development of insurance packages by insurance companies as well as provide tax break as incentive for insurance companies that offer agricultural insurance instruments such as peri-crop insurance, index-based crop insurance, livestock insurance and reinsurance schemes.

188. PT 3.2.1.4 - Promoting warehouse receipts system:

The aim is to promote the use of warehouse receipts as collateral. This is critical in enabling smallholder farmers' access to bank financing. To implement this policy measure, Government will facilitate the enactment of a regulation on warehouse receipts as collateral. Government will also revamp and monitor the implementation of warehouse receipts systems and build the capacity of firms licensed to manage stocks in warehouses as collateral.

189. PT 3.2.1.5 - Setting-up of public mutual funds for residual risks:

The aim is to provide alternative short-term and long-term finance to the agri-food sector. Government is committed to creating an enabling environment for the public to invest in agriculture by pooling funds through mutual fund schemes. Under this policy tool, Government will design, facilitate the private sector to set-up and invest in the mutual fund.

190. Investment Area 3.2.2: Agricultural Finance and Credit Facilities

191. PT 3.2.2.1 - Promoting agency banking: The aim is to promote Agency Banking as a means to expand the outreach of banks in rural areas. Agency Banking allows banks to expand their outreach in rural areas by delivering a series of services to farmers at their door step: cash deposit, cash withdrawal, third party payments, payment of goods and services. To implement this

policy measure, Government will bear the cost of packaging and disseminating Agency Banking as a means to expand the outreach of banks in rural areas. Also, Government will incentivise financial institutions to expand their reach in rural areas to deliver financial services to the rural smallholder actors in commodity value chains.

- 192. PT 3.2.2.2 - Subsidising interest rates to facilitate access to credit:** Government's aim is to provide a window to support the acquisition of productivity enhancing technologies to drive the transformation of the agri-food-systems. High interest rate on equipment financing is one of the main reasons for the low level of technology in agriculture. To implement this measure, Government will cover the cost of subsidies of interest rates on smallholder farmer loans for long term investments, specifically farm equipment that will enhance productivity and quality.
- 193. PT 3.2.2.3 - Promoting adjusted requirements for small loans:** Majority of smallholder farmers and other value chain players might not be able to meet banking loan requirements, therefore making it difficult to obtain capital and achieve growth. It may be necessary that banks and other financial institutions offer adjusted loan requirements to make small loans accessible to value chain players. Government will incentivise financial institutions to make loans accessible to value chain players. To implement this measure, Government will facilitate the development of adjusted loan packages and disseminate knowledge packages.
- 194. PT 3.2.2.4 - Providing support to farmers through financial institutions that manage public resources for agricultural purposes:** Traditional banks are less likely to lend to small farmers and other value chain players. Where necessary, Government can incentivise such institutions to provide continued support to the agricultural market by using institutional mechanism through structured farmer organisations such as the ACSEs and MHEs. The aim is to enhance smallholders' access to financial resources. To implement this measure, Government will cover the cost of: incentivising traditional banks and other financial institutions to use institutional lending mechanisms to reach out to the smallholders through the various ACSEs and MHEs.

195. Investment Area 3.2.3: Capital Market Instruments for Agriculture

- 196. PT 3.2.3.1 - Creation of a capital market for the agricultural sector:** Financing instruments for agricultural activities in Ghana has been mainly short term instruments which do not support the needed technologies to modernise the sector. Coupled with this are the regulatory constraints on the percentage of depositors' funds that financial institutions can lend and the interest rates. To address these triple constraints to agricultural financing, the Government will facilitate the creation of a capital market to mobilise financial resources that will be channelled to finance the medium and long term investment required to modernise agriculture at competitive interest rate. The aim of this measure is to mobilise private resources to finance agri-food-systems development. Government's expenditure under the PT will cover the cost of developing – enhancing and operating capital market instruments for agriculture, within the framework of the Ghana Securities and Capital Markets. The agricultural capital market is expected to be in operation by end of 2020.
- 197. PT 3.2.3.2 - Instituting relevant capital market instruments for agriculture:** To facilitate access to private resources to finance agri-food systems there will be need to institute the relevant capital market instruments to be traded on the capital markets. These instruments will have to be developed to meet the specific requirements of the agri-food capital markets. The Government will facilitate the development of the specific capital market instruments that farmer organisations and other value chain actors can trade on the capital markets to raise short, medium and long term financing at competitive rates. Government will bear the cost of developing the financing instruments and promoting the use of such instruments among farmer organisations and financial institutions. These instruments will be developed by the end of 2020.

4.3.4 Programme 4: Sustainable Management of Land and Environment

198. Agricultural activities including mechanisation and the use of agro-chemicals to enhance agricultural productivity impact the land and environment. This programme seeks to facilitate the implementation of Sustainable Land and

Environmental Management (SLEM) practices in agriculture. This involves: promoting SLEM technologies; creating awareness; and building institutional capacity. This programme will be achieved through Conservation of Natural Resources; and Climate Change Mitigation and Resilience Scheme.

199. This programme consists of two (2) sub-programmes (SP): SP. 4.1: Conservation of Natural Resources; SP 4.2: Climate Change Mitigation and Resilience Scheme.

4.3.4.1 Sub-Programme 4.1: Conservation of Natural Resources

200. Over the years, SLEM has been a challenge due to inappropriate practices including bush burning, environmental degradation and artisanal mining that lead to the destruction of flora and fauna. MoFA promotes conservation practices through the implementation of the Agricultural Land Management Strategy. However, a number of challenges have been encountered in scaling up these practices. These include inadequate awareness creation for the practices, low adoption and weak collaboration among relevant agencies to mainstream these good practices. As a measure to curtail these challenges, this sub-programme seeks to promote conservation of natural resources, protect biodiversity and ensure sustainable management of forest resources.

201. Sub-programme 4.1 will be implemented through one (1) Investment Area: IA.4.1.1 Conservation Agriculture

202. Investment Area 4.1.1: Conservation Agriculture

203. PT 4.1.1.1 - Conservation of natural resources management schemes: Natural resource management refers to the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations. Natural resource management specifically focuses on a scientific and technical understanding of resources, ecology, the life-supporting capacity of those resources and how they are affected by human interactions. Government should lead the mobilisation of resources to bear the cost of: (i) studies on natural resource conservation; (ii) disseminating information on the importance of natural resource conservation and; (iii) conferring

benefits to farmers and stakeholders who engage in natural resource conservation.

204. PT 4.1.1.2 - Promoting the protection, conservation and sustainable use of biologically diverse ecosystems and habitats: Biological diversity means the variability among living organisms both within species and between different species in ecosystems. Human actions left unchecked can and has had devastating effects on the earth's biodiversity. It is important to enact protective measures to ensure that biodiversity does not continue to suffer due to human tampering. Hence, this policy tool aims to promote agricultural practices that protect and conserve biological diversity of ecosystems, such as the use of agroforestry, organic plant nutrient sources, enforcement of anti-bush-fire regulations, and limit the inappropriate use of inorganic pesticides whilst promoting botanicals.

205. PT 4.1.1.3 - Promoting the conservation and sustainable management of forestry resources: Sustainable use of forestry resources is essential to conservation of these resources. Hence, this policy tool aims to protect and conserve forests. Government will bear the cost of: (i) creating and enforcing conservation and sustainable use regulations; (ii) disseminating information on the importance of forestry conservation and; (iii) benefiting individuals and organizations who engage in sustainable use practices.

206. PT 4.1.1.4 - Promoting land banking along with secured land tenure: Many farmers and value chain players lack clear, secure rights to the land, resources, and property they use, occupy, and depend on for their livelihoods and business. Land insecurity impacts investment, credit availability, poverty rates, land values, and agricultural productivity, which are all linked to economic growth. In contrast, secure land tenure may lead to economic growth by: allowing farmers to invest in better seeds or tools, see returns on those investments, and pass land to their heirs; making it easier to gain credit to finance investments in agriculture or other entrepreneurial activities; and attracting external investments necessary for economic growth. It is clear that securing land rights for farmers is a positive step towards economic growth and development, particularly for women. Hence, this policy tool aims at collaborating with the MLNR

to facilitate land tenure security for farmers, such as land titling, creation and management of land banks to stimulate agricultural growth.

4.3.4.2 Sub-Programme 4.2: Climate Change Mitigation and Resilience Scheme

207. The effects of climate change resulting from rainfall and temperature variability is significantly devastating for actors in agricultural value chains, especially in the Savannah zone. This is due to the fact that majority of farmers are smallholders and rely mostly on rain-fed agriculture which is largely unreliable. Climate change has also introduced challenges such as pest and disease incidences which negatively affects production. This sub-programme therefore seeks to support the implementation of the Climate Smart Action Plan which supports farmers' resilience to climate change through adaptation and mitigation. It is also responsible for promoting green/growth agriculture concepts, principles and the use of energy generated from natural sources.

208. Sub-programme 4.2 will be implemented through two (2) Investment Areas: IA.4.2.1 Climate Change Mitigation and Resilience Scheme, and IA.4.2.2 Renewable Energy and Energy Efficiency Measures.

209. Investment Area 4.2.1: Climate Change Mitigation and Resilience Scheme

210. PT 4.2.1.1 – Climate change mitigation and adaptation schemes: Adequate response to climate change is critical for creating an enabling environment for the growth and transformation of agri-food systems. Government is committed to investing in tackling climate change to minimise its impacts on agriculture, rural economy, and vulnerable people. The aim is to promote the mitigation and adaptation measures through the implementation of the National Climate Smart Agriculture and Food Security Action Plan.

211. PT 4.2.1.2 – Climate change resilience schemes: Government is committed to building farmers' resilience to climate change. The aim is to enhance the capacity of farmers to withstand climate shock. To implement this policy tool, Government will bear the cost of developing and promoting climate resilient cropping systems, support water conservation and irrigation system, risk transfer and alternative livelihood systems and post-harvest management.

212. PT 4.2.1.3 - Promoting the reduction of deforestation and adopting afforestation measures: Deforestation is the long-term or permanent conversion of forest to other land uses. Deforestation can have significant impacts on societies and the environment. Globally, deforestation and forest degradation contribute about one-fifth of total greenhouse gas emissions. Other environmental impacts of deforestation include damage to ecosystem habitats and the resultant loss of biodiversity; the disruption of water cycles; soil erosion; and desertification. Governments will work towards reducing the rate of deforestation in Ghana and reversing the damages done to forests through afforestation and reforestation measures. Hence, this policy tool aims to protect forests by reducing deforestation and adopting afforestation and reforestation measures.

213. PT 4.2.1.4 - Promoting research, and knowledge dissemination on climate change mitigation and adaptation schemes: Mitigation and adaptation strategies are essential to combating the real effects of climate change in the 21st century. Hence, this policy tool aims to promote research, and knowledge dissemination on climate change mitigation and adaptation schemes.

214. PT 4.2.1.5 – Promoting green agriculture concepts and principles: Government is committed to investing in technologies that work to improve productivity for farmers, and does not cause undue harm to society and the environment. The aim is to foster agricultural growth and development, while preventing environmental degradation, biodiversity loss and unsustainable natural resource use. Government will invest in: (i) organic farming and (ii) conservation agriculture. This is crucial to rebuild natural capital by restoring and maintaining soil fertility; reduce soil erosion and inorganic agro-chemical pollution; increase water-use efficiency; reduce deforestation, biodiversity loss and other land use impacts; protect the soil, water and climate to produce healthy food and significantly reduce agricultural GHG emissions.

215. PT 4.2.1.6 - Promoting Climate Information Services: For adaptation to contribute to climate resilience it should not only focus on 'hardware' issues, for example providing drought tolerant seeds, but also on 'software' issues such as

enabling better access to accurate and timely climate information that farmers can use to decide for themselves what seeds to plant and when to plant them. MoFA will collaborate with Ghana Meteorological Agency and other stakeholder institutions to provide farmers with timely, accurate and affordable climate and weather information. Main investment areas will include: (i) establishment of community weather stations; and (ii) capacity building for data collection, analysis, interpretation and dissemination of weather information to farmers through appropriate media - community gatherings/fora, workshops, FM stations and mobile phones.

216. Investment Area 4.2.2: Renewable Energy and Energy Efficiency Measures

217. PT 4.2.2.1 - Promoting the use of energy generated from natural sources: The use of renewable energy is encouraged because fossil fuels are non-renewable resources. In contrast, renewable energy resources such as wind and solar energy are constantly replenished and will never run out. They are more environmentally friendly and can be more economically affordable. Hence, this policy tool aims to protect the environment by promoting the use of renewable energy sources for agricultural activities. Government will bear the cost of (i) incentivising the local production and use of renewable energy sources; (ii) educating the public on the benefits of using renewable energy sources; and (iii) creation of regulations that will promote the use of renewable energy sources over fossil fuels along the agri-food value chains.

4.4 Priority Initiatives in the Medium Term

218. Strategically the plan provides a framework to galvanise the modernisation of the sector through the government's flagship initiatives introduced to address the identified myriad of challenges and issues in attaining the goals of the sector. These initiatives are rooted in this medium term plan which provides a menu of policy tools that will empower the government to: (i) harmonise all the Government interventions and flagship programmes in the sector; (ii) align Donor interventions to Government priorities; (iii) manage investments for results; (iv) leverage private sector investments effectively; and (v) account for results. In addition, the plan provides a mechanism for financing investments from both

national and development partner resources.

219. IFJ will be rolled out through the implementation of independent Policy Tools or by a combination of a number of them to form projects and/or programmes (priority initiatives). Examples of these projects and programmes outlined in this medium term plan include: (a) Planting for Food and Jobs (PFJ); (b) Rearing for Food and Jobs (RFJ) (c) Planting for Export and Rural Development (PERD); (d) One Village - One Dam (1V1D) i.e. Irrigation and water management; (e) Agricultural Marketing and Post-Harvest Management including One District - One Warehouse (1D1W) and One District - One Factory (1D1F); (f) Greenhouse Villages; and (g) Agriculture Mechanisation Services Centres (AMSECs), (h) West African Agricultural Transformation Programme (WAATP), (i) Ghana Commercial Agricultural Project (GCAP), (j) Ghana Agricultural Sector Investment Programme (GASIP), and (k) Savannah Agricultural Productivity Improvement Project (SAPIP).

220. These projects and programmes are the prioritised interventions within the medium term. Some of these projects are already being rolled out but additional investments would be made to scale them up and increase their impact. Other new initiatives may also be introduced in the course of implementation of the Plan.

4.4.1 Planting for Food and Jobs Campaign

221. The PFJ is one of Government's flagship programmes in the agricultural sector. It is aimed at ensuring food security, increased employment opportunities particularly for the teeming youth, supply raw material for industry and increase agricultural export. The initiative was designed based on identified myriad of challenges facing the sector and the zeal to exploit the untapped potential. These challenges include: (a) lack of access and low utilisation of certified seeds; (b) low fertilizer usage; (c) weak extension Service; (d) poor post-harvest management and linkages to market; (e) low application of ICT to support agriculture; among others. The PFJ campaign was therefore designed to focus on five pillars – provision of improved seeds, fertilizers, extension services, marketing and e-agriculture. The campaign innovatively implements a number of policy tools under the Crops and Livestock Programme to support value chain development.

- 222. Provision of improved seeds:** The campaign would identify credible and existing private sector seed producers in the country and support them with the necessary financial and technical capacity to produce quality and affordable selected commodity seeds for distribution to farmers. The seed will be distributed to participating farmers at a subsidised cost through existing structures established by MoFA and its partners. Also, extensive sensitisation programmes would be implemented by using various media and approaches.
- 223. Supply of fertilizers:** In line with the National Fertilizer Subsidy Programme, fertilizer prices will be subsidised for participating farmers and delivered to them at the district level. In the medium term, PPRSD of MoFA would be supported with modern laboratory equipment to enable testing and regulation of the quality of fertilizers and other agro-inputs imported or produced in the country. This would complement the work of the Ghana Standards Authority (GSA) in ensuring that only good quality fertilizer is imported. In the medium to long term, the Ministry would collaborate with other relevant MDAs to support domestic fertilizer production. This could lower fertilizer prices, eliminating the need for subsidies.
- 224. Provision of extension services:** The Government will recruit and resource AEAs for all MMDAs to support participating farmers. Extension service will be delivered in partnership with DPs, the local government and private input and service providers. Another important deliverable of the extension system will be to facilitate linkages with service providers and also serve as a point of contact for both data/information collection/collation and dissemination.
- 225. Marketing:** Government's intervention in marketing will only be a facilitation role by promoting partnerships amongst farmers, nucleus farmers, farmer associations, farmer based organisations and private aggregators and marketing of both the inputs and outputs. It is envisaged that the facilitation of increased uptake of inputs will lead to increase in production of the targeted crops. New storage warehouses will be constructed in areas closer to the production and where necessary, the old warehouses will be rehabilitated and rendered functional. The PFJ will also assist farmers in marketing their farm outputs to: (i) ensure the recovery of the remaining payment for the subsidised inputs; (ii) minimise any effects of price volatility through increased participation and competition by private players; and (iii) widen the benefits of increased production by establishing linkages with value addition and other food purchase programmes.
- 226. E-Agriculture:** The PFJ Campaign would improve on the existing MoFA e-agriculture platform to make it more robust, effective and efficient. The platform would leverage on other software applications created by individual Ghanaians to ensure effective implementation of the seed and fertilizer distribution programmes, use of Radio-Frequency Identification (RFID) to monitor distribution units, improve extension service delivery, track and monitor purchase/sale of farm produce, facilitate timely and efficient data collection, among others. Under this pillar, a national farmer database is being created and linked to the national identification system and existing platform at MoFA. This will involve registering farmers, location, pictures and farm size digitally for database and also for purposes of monitoring. This will be a bedrock of our M&E plan which we are developing around the thematic areas of yield, incomes of participating farmers in line with development indicators.
227. To achieve the objectives of the PFJ, some approaches are being adopted. These include the use of the value chain approach with a focus on the nucleus-outgrower schemes, registered Farmer-Based Organizations (FBOs), inclusiveness of youth and women (at least 40%), value addition and appropriate agricultural financing. The initial priority commodities under the PFJ include the cereals (maize, rice, and sorghum), legumes (soybean and groundnut), vegetables (tomato, onion, pepper, cabbage, cucumber, lettuce and carrot) and root and tubers (cassava). The commodity base will be expanded annually as the PFJ is rolled out. The expanded PFJ modules will be implemented employing policy tools under Programme 2 and 3 in particular sub programmes SP 2.1 Productivity Improvement; SP 2.2 Mechanisation, Irrigation and Water Management; SP 2.3 Post-harvest Management and Agricultural Marketing; SP 3.1: Promotion of Private Sector Investment in Agriculture and SP 3.2 Agricultural Financing.

228. It is expected that the campaign will in the short and medium term, contribute to a structural transformation of the economy with evidence in food security through increased productivity and yields, increased employment along commodity value chains and increased incomes for actors in these value chains.

4.4.2 Planting for Export and Rural Development

229. The Planting for Export and Rural Development (PERD) is the Government's priority initiative to develop the tree crops subsector in the medium term. It aims at increasing the raw material base in order to drive the One-District-One-Factory initiative and provide employment opportunities to the youth and farmers nationwide. The initial priority crops are cashew, coffee, coconut, citrus, cotton, mango, oil palm and shea. The thematic focus areas of the PERD include farmer networking, production, post-harvest/processing, marketing, extension and business support. The pillars of PERD include research and extension support services, agricultural information and database management, and value chain reinforcement through capacity building and business support. In the implementation modalities of the PERD, each district is to identify and select two tree crops with socio-economic importance to be promoted within the district. PERD will be implemented employing Policy Tools under Programmes 2 and 3 in particular sub programmes SP 2.1 Productivity Improvement; SP 2.2 Mechanisation, Irrigation and Water management; SP 2.3 Post-harvest management and Agricultural Marketing and SP 3.1 Promotion of Private Sector Investment in Agriculture.

4.4.3 Rearing for Food and Jobs Campaign

230. This campaign is to stimulate rapid growth of the livestock sub-sector. The primary objective is to ensure immediate and adequate availability of meat and other livestock/poultry products in the country through improved productivity and intensification of targeted support to private sector service providers and livestock farmers/prospective livestock farmers. It also aims at: (i) providing job opportunities in the agriculture and allied sector for the unemployed youth; (ii) creating awareness for all formal workers to establish livestock farms (sheep, goats, pigs or poultry, rabbit and grass cutter).

231. The RFJ addresses key challenges in the livestock subsector in order to harness its potentials. These challenges include: (i) the lack of access and low utilisation of improved breeds; (ii) inadequate agricultural extension service; (iii) inadequate market infrastructure and linkage to markets; (iv) poor and inadequate livestock housing structures, plant and equipment; (v) poor animal health, inadequate staffing and equipment; (vi) low use of ICT to support agriculture; and (vii) weak baseline information on farmers.

232. The campaign focuses on seven key value chains; sheep, goats, pigs, poultry, rabbits, apiculture (bee keeping), and peri-urban diary production. These value chains were selected because they thrive in every part of the country. They also have a high propensity for income generation and export revenue. In addition, products from these seven types of livestock have relatively high nutritional value for human consumption. The main approach for delivering on this task is based on managing the risks associated with livestock farming through a deliberate strategy to support the agricultural sector.

233. The initiative is therefore centred on 5 pillars namely: Breeding Stocks; Feed and Nutrition; Housing structures, plants and equipment; Animal health; and marketing. RFJ will be implemented by employing Policy Tools under Programmes 2 and 3 in particular sub programmes SP 2.1 Productivity Improvement; SP 2.2 Mechanisation, Irrigation and Water management; SP 2.3 Post-harvest management and Agricultural Marketing; SP 3.1: Promotion of Private Sector Investment in Agriculture and SP 3.2 Agricultural Financing.

4.4.4 Agricultural Mechanisation Services Centres

234. Mechanisation is a crucial input for agricultural development. As part of the PFJ, the Government will revamp and upgrade the existing AMSECs to strengthen the operations and optimise the full benefits of mechanisation services delivery in agricultural production.

The overall objective of AMSECs is to improve availability and timely access to affordable agricultural machinery and mechanised services for agricultural operations. They are expected to provide timely and affordable mechanised services along the value chain to actors who

cannot afford agricultural machinery on their own or due to economy of scale option for service delivery. AMSECs have been faced with several challenges including low utilisation of machinery, limited access to AMSEC services by farmers, high premature breakdowns of tractors, poor management and lack of access and high cost of spares. These have contributed to it not being function and near collapse.

235. Policy interventions for strengthening AMSECs to meet its set objectives being proposed for consideration includes; building skill capacities of machinery operators and AMSEC managers on business management, engaging proactive local agents to deliver effective after sales support and redefining allocation modalities. Others include, introduction of hand held machinery, promotion of ICT in AMSEC delivery and developing land banks for comprehensive mechanization application.
236. Government will make effort to reduce the importation of agricultural machinery and increase Ghana's capacity to assemble and fabricate more agricultural machinery. The focus in the medium term will be to distribute small hand held machinery and equipment for men and women smallholders. The machinery and equipment include agro-processing machines to help strengthen agricultural products value chains.
237. Government will support mechanisation of commodity value chains to enhance productivity and also attract the youth to skilled employment along the priority commodity value chains. To ensure that mechanisation is properly promoted the Government will implement policy tools in Programme 2 and 3 specifically (SP): SP.2.1 Productivity Improvement; SP.2.2 Mechanisation, Irrigation and Water management; SP 2.3 Post-harvest management and Agricultural Marketing, SP.3.1: Promotion of Private Sector Investment in Agriculture; and SP.3.2: Agricultural Financing.

4.4.5 Promotion of Greenhouse Technology

238. As part of the government's efforts to open opportunities for increased production and exports of vegetables after the 2015 European Union export ban on selected vegetables, a new concept of greenhouse villages was introduced in 2017. The idea of the greenhouse village is to

establish strong agribusiness in the vegetable sector to attract both Ghanaian youth and international investors. The objective is to place Ghana as a key competitor in the export of fresh vegetables and cut flowers.

239. As part of the employment creation agenda of government, the Greenhouse Village initiative will have a training section which will train the youth on vegetable farming. Also, a commercial production section will as well be set up where the graduates from the training school can establish their own enterprise. The Greenhouse Village initiative was started at Dawhenya in the Greater Accra region and further expansion will be made to the village by adding facilities like a nursery, post-harvest packing house, cooling rooms, auditorium, accommodation, offices, access roads, electricity, among others. Also, as the project runs, it will be extended to the other parts of the country. Government will support the implementation of the Greenhouse Villages employing policy tools under Programme 2 specifically sub programmes (SP): SP.2.1 Productivity Improvement; SP.2.2 Mechanisation, Irrigation and Water management; SP 2.3 Post-harvest management and Agricultural Marketing, SP.3.1: Promotion of Private Sector Investment in Agriculture; and SP.3.2: Agricultural Financing.

4.4.6 Post-Harvest Management

240. With the implementation of the planting for food and jobs and other government interventions, it is anticipated that yields and production levels of commodities would increase. The key Government intervention to reduce post-harvest loses will be through implementation of the "One district One warehouse" and the promotion of value addition as well as the ware house receipt system and commodity exchange.

4.4.7 Irrigation and Water Management

241. Another complementary intervention in the agricultural sector is the "One Village - One Dam" initiative. This initiative is being introduced especially in the Upper West, Upper East and Northern Regions, to ensure availability of water for all-year farming. This is expected to improve food security, and curtail migration from the north to the south in search for jobs during the off-farm season. The Government will be employing

policy tools under Programme 2 specifically sub-programme SP2.2 Mechanisation, Irrigation and Water management.

4.4.8 Cocoa Sub-Sector Strategy

242. The vision for the cocoa sector development is “a modernized, resilient and competitive cocoa environment where all stakeholders strive towards a sustainable cocoa economy in which cocoa farmers and their communities thrive”. This vision is to be achieved through a number of strategic objectives which can be broadly classified into the following:

- a. Farm level productivity enhancement;
- b. Effective and efficient sector governance and pricing;
- c. Increasing domestic value addition in cocoa; and
- d. Raising demand for cocoa through promotion of cocoa consumption domestically and regionally, as well as exploration of non-traditional markets in Asia.

a. Productivity Enhancement Strategy

243. This strategy is aimed at increasing the output per unit area from the approximately 450kg/ha to 1,000kg/ha by 2027. Increased productivity will improve and sustain incomes above current levels in the midst of low cocoa production. The following programmes have been adopted for implementation to increase on-farm productivity.

244. Farm Rehabilitation: This intervention is a compensation-based rehabilitation of old/moribund farms, with targets of removing 162 million trees covering 147,000 ha by 2022 and an additional 162 million trees covering 147,000 ha by 2027. This target will require 311 million hybrid seedlings each and plantain suckers and 5 million economic trees by 2022. The treatment of CSSV-diseased trees will involve the removal of 120 million trees covering 108,000 ha by 2021. This will require 160 million cocoa seedlings, 130 million plantain suckers, and 2.2 million economic trees. The intervention also includes mass pruning of farms proposed to be sponsored by COCOBOD.

245. Diseases and Pest Control: Effective control of diseases and pests is fundamental to achieving the primary productivity goal of 1,000 kg/ha. Thus,

COCOBOD will involve the private sector in the distribution, sales, and application of chemicals for cocoa diseases and pest control. Emphasis will be on ensuring timely supply and accessibility of inputs to farmers at competitive prices. COCOBOD will also encourage the participation of the private sector in the delivery of farm spraying services.

246. Soil Fertility Management: To boost fertility of cocoa soils and ensure proper soil management, COCOBOD will intensify the cocoa HI-TECH programme by making fertilizer easily available to farmers. Key in this intervention is the gradual withdrawal of COCOBOD from the distribution of fertilizers directly to farmers. This phased withdrawal will allow private sector participants (fertilizer distributing companies) to prepare and position themselves strategically in cocoa communities to assume control of sales and distribution of fertilizer. The overall focus will be on ensuring sustainable supply of fertilizer.

247. COCOBOD shall encourage the formation of private input application (agricultural service delivery) companies to perform services for cocoa farmers. The objective is to get private companies to render professional input application services to farmers at a fee. Regular soil analysis will be carried out to monitor soil fertility and advise farmers on the appropriate fertilizers to use per location.

248. Irrigation on Cocoa Farms: Irrigation is a strategy to deal with the adverse effects of climate change and the associated harsh weather conditions. COCOBOD will support and promote the establishment of Irrigation systems within cocoa growing areas. The target is to irrigate about 30% of cocoa farms by 2027.

249. Artificial Pollination of Cocoa: This intervention is meant to directly increase the number of cocoa pods per tree, and can be undertaken through the year provided there are flowers on the cocoa trees. The successful implementation of this intervention requires the complementary effects of good agricultural practices (e.g. fertilizer application, pruning, weeding, irrigation,) to support the artificially pollinated cocoa trees. COCOBOD targets to train and deploy 30,000 youth under this intervention within the medium term, who will later undertake it as a business, offering paid pollination services to farmers.

250. Extension: Cocoa extension has passed through different phases. Since 2010, cocoa extension has reverted to COCOBOD on public- private arrangement with industry partners. The number of qualified extension agents has been identified to be inadequate to support the implementation of productivity enhancing programmes towards the long-term objective of 1,000 kg/ha. The current ratio of 1 agent to 2,500 farmers is five times lower than the recommended ratio of 1 agent to 500 farmers. The medium target is a ratio of 1 agent to 1000 farmers by 2022. COCOBOD extension services will be enhanced with adequate logistics and trained staff for efficient extension delivery. Modern tools of extension, including use of ICT which has already been piloted by COCOBOD will be deployed to increase access to extension services. Extension officers will also be aided with these technologies to facilitate information delivery and enhance their capacities in the service delivery.

251. The focus of cocoa extension will also include the development and use of labour saving technologies to encourage the youth to develop interest and adopt cocoa farming as a business. To this end, extension education will focus on and intensify the farmer business school concept as a tool to inculcate in the farmer the adoption and operation of cocoa farming as a business. COCOBOD will ensure that the industry partnership arrangement for extension delivery is strengthened for efficient extension delivery.

Value Addition

252. The target of this strategy is to increase domestic processing of cocoa beans to 50% of the annual output, from 30% in 2017/18. This will be achieved primarily by increasing capacity utilisation of existing facilities and encouraging the establishment of new processing units. In order to increase the value of processed cocoa to Ghana, COCOBOD is encouraging processing companies to move towards secondary and tertiary processing. From 2017/18, processing companies shall be licensed if they are prepared to process beyond the primary level. Priority will be given to processing companies undertaking secondary/tertiary processing in the Bean Supply Agreements (BSAs). The BSAs shall apply a graduated rate of discount on price of beans supplied to local processors, based on the level

of value addition which shall be negotiated and mutually agreed between COCOBOD and the domestic processing factories.

253. Importation of light crop beans to process in Ghana shall be allowed, but subject to COCOBOD's approval. Such cocoa bean imports shall be transported by sea only. COCOBOD shall identify and register all artisanal chocolate manufacturers, train and regulate their activities.

254. Pricing of Beans for Domestic Processing: COCOBOD shall ensure that, sale of cocoa beans to local processors will be in accordance with sales contract terms, which shall include among others, the prevailing terms of trade and the availability of the required grade/category and quantity of beans desired by the buyer.

255. To ensure effectiveness in the pricing of beans purchased by domestic processors, the following measures would be undertaken: Discount on the light crop and other lower bean size categories will be pegged to the prevailing market rates applicable in the world market. In addition, extra discounts will be determined by the stage of processing for which the cocoa bean is required at the following rates:

- i. Primary Processing - 2.5% discount above market;
- ii. Secondary Processing - 5.0% discount above market; and
- iii. Tertiary Processing - 7.5% discount above market.

256. By definition, the following products shall apply to the processing stages above:

- i. Primary processing: Liquor, butter, cake and powder;
- ii. Secondary processing: Liquid chocolate or coating (coverture); and
- iii. Tertiary processing: Finished chocolate or Confectionery products.

257. Sale of light crop and other smaller category beans will be undertaken on ex-store or equivalent terms to reflect what pertains on the international market.

258. Increasing demand for Ghana cocoa: As world production continues to rise, raising demand will be necessary to reduce the bearish effect of excess supply in the market. COCOBOD have

adopted a two-pronged approach to increasing the demand for Ghana cocoa, that is, promotion of cocoa utilisation in the domestic and sub-regional markets, and the expansion of demand in non-traditional markets.

259. Promotion of cocoa Consumption: The target for the promotion of cocoa consumption is to increase domestic consumption from the current rate of 0.5kg per capita to 1.5kg per capita by 2022. This will be achieved through increased awareness creation on the health and nutritional benefits of cocoa and utilisation of cocoa, with specific messages targeted at policy makers, cocoa industry players, researchers (food scientists, nutritionists, biochemists, food preparation and food service industry) and media. COCOBOD, in this plan period, shall promote the benefits of cocoa and inculcate cocoa as food for everyday consumption in Ghana and Africa. The strategy will be towards making cocoa part of a healthy African food culture.

260. Market Expansion: COCOBOD will pursue an aggressive marketing strategy comprising : (a) spreading customer base in our traditional markets by roping in end users who are currently not using Ghana cocoa beans; (b) penetrating new and emerging markets by encouraging cocoa processing and manufacturing companies to use more of Ghana cocoa beans; (c) greater differentiation of cocoa beans, thereby obtaining markets for super-main and super-light crop bean categories; (d) reviewing of the selling arrangements to be able to compete and reach out to all markets without language limitation; and (e) strengthening the market research machinery, market intelligence gathering and sales expansion programmes to stay ahead of the competition, thereby, increasing the base and premium on cocoa.

Pricing, Operations and Sector Governance

261. Producer Price: The Producer Price Review Committee (PPRC) mechanism for determining the minimum producer price for cocoa shall remain in place. The commitment to offer not less than 70% of net F.O.B price will continue to be implemented. Periodic review of the producer price will be undertaken, with the view to ensuring stable real income to the farmer. To ensure that other stakeholders are equitably compensated, COCOBOD will undertake the following activities:

(a) Establish an income balance between the farmer and the other stakeholders in the industry to ensure profitability among all stakeholders; (b) Progressively reduce industry cost from an average of 16% to 10% of F.O.B in the medium term, this will ensure that the net F.O.B is not depressed by the industry cost and guarantee fair remuneration to all stakeholders; (c) Analysis of relevant situation in neighbouring cocoa producing countries will be considered by the PPRC in the determination of the producer price; (d) Prompt response to price fluctuations within the crop season. This will ensure that Ghana's producer price remains competitive throughout the season. This will also serve as a check on smuggling to other countries; (e) Implementation of the stabilization fund. When F.O.B prices fall to very low levels, it will be used to cushion stakeholders, especially the farmer; (f) The producer price set will be linked to the achieved F.O.B price.

262. Internal Marketing of Cocoa: The internal marketing of cocoa will continue to be driven by the current policy of partial liberalisations, in which the purchases and transportation of cocoa beans to COCOBOD warehouses or take-over centres will be undertaken by licensed private entities. In spite of the low volume of purchases of many LBCs, no limit will be set for the maximum number of LBCs, in line with the liberalisation of the internal marketing. However, if a LBC fails to purchase a minimum tonnage set by COCOBOD per annum for two consecutive crop years, its licence would be withdrawn. COCOBOD will also withdraw the licence of a LBC which fails to operate for two consecutive crop years.

263. The Guidelines and Regulations governing the internal marketing of cocoa will be passed in to a Legislative Instrument (LI) to ensure strict enforcement of the sanctions on malpractices in the internal marketing. COCOBOD will from 2018 adopt payment arrangements that will progressively phase out the current cash system by 2027. COCOBOD will collaborate with key stakeholders including the financial sector to explore other alternative payment systems for cocoa farmers, including the use of electronic payment platforms.

264. Modernisation of Warehouses and Takeover

Operations: This strategy is aimed at increasing capacity of warehouses, efficiency in space utilisation, speed of operations at warehouses (taking-over and shipping), as well as cost effectiveness. COCOBOD will undertake adequate investments in the following areas: (a) Mechanisation and automation of operations at the take-over centres involving the acquisition of modern warehousing tools/equipment such as weigh bridges, conveyor belts, forklifts, stackers, etc.; (b) Automation of the cocoa taken-over receipting (CTOR) processes and payment system; (c) The Kumasi take-over centre will be strengthened and equipped as an inland port for container stuffing and direct shipping of cocoa to external destinations; (d) The private sector will continue to be engaged in the provision of terminal equipment for lifting containers to improve turnover in outbound distribution systems, besides the provision of bulk cocoa terminal storage and bulk carrier vessel loading. Presently there is only one company operating at Takoradi, thus providing an opening for other investors.

265. Increasing Private Sector Participation in Input

Delivery: Private sector distribution and sale of subsidised inputs to cocoa farmers shall be improved. Subsidies can thus be accessed only in the form of cocoa inputs from accredited input distributors. COCOBOD will encourage the formation of professional private spraying companies that will eventually take over and offer professional farm maintenance services at cost to cocoa farmers. Since farmers are expected to spray their farms to achieve the recommended spraying regime, COCOBOD will eventually relinquish input distribution to the private sector who will make chemicals available in the open market to be purchased by interested farmers.

266. Gender Mainstreaming:

Cocoa value chain interventions will be guided to mainstream gender issues in order to encourage social equity and inclusion to drive improvements in yields and incomes, especially among female farmers. This will help promote gender sensitive value chain activities. The strategy to be adopted include: (a) Establishment of a Gender Desk within COCOBOD to be responsible for gender related policy issues; (b) Develop institutional capacity for effective gender mainstreaming; (c) Integrate gender in

extension programming to ensure relevance of information to men and women and equitable access to services; (d) Sensitisation of traditional authorities and smallholder farmers on gender equality to enable them appreciate and overcome barriers to social exclusion in the cocoa value chain.

267. Youth in Cocoa Farming:

The objective of the Youth in Cocoa Farming is to encourage the youth to establish and own cocoa farms as viable businesses. The following strategies incentives shall be provided: (a) Facilitation of land acquisition. Acquired lands will be owned by the youth; (b) Provision of dedicated technical support (extension) and inputs; and (c) Training of youth to improve their capacity in managing cocoa as a business and provide the platform for them to access funds intended for cocoa farming.

268. The successful implementation of these strategies will require a concerted effort on the part of COCOBOD and solid framework of coordination and engagement between COCOBOD and key stakeholders including MDAs, the private sector and civil society. COCOBOD will therefore foster strong partnerships with relevant stakeholders to ensure the effective implementation of the Medium Term Strategy.

2.5 Mobilising resources to finance the implementation of the menu of key activities

269. The Government in its effort to finance the agricultural transformation agenda, will facilitate the setting up of two (2) exclusive agricultural development funds through legislation, namely: (a) *the Ghana Agricultural Infrastructure Development Fund (GAIDF)*; and (b) *Ghana Agri-Food Systems Development Fund (GADF)*. The GADF will have a private sector orientation whilst the GAIDF will be devoted to investments on public infrastructure in order to leverage private sector investment in the sector.

Ghana Agricultural Infrastructure Development Fund (GAIDF):

The focus of this fund is to invest in public agriculture infrastructure such as feeder roads, warehouses, irrigation, green-houses etc. The Government will make its contribution through the Annual Budget Funding Amount (ABFA) and other sources such as mobilising complementary resources from development partners. It will also

implement a smart policy of small taxes and levies (e.g. on food imports) that do not burden consumer prices to mobilise public resources to finance the fund.

- **Ghana Agri-Food Systems Development Fund (GADF):** This is a proposed sustainable funding mechanism for commodity value chains. It will have a private sector orientation and use the taxing mechanism. This kind of funding usually is effective in a structured and well-defined commodity value chains. Thus, establishing, strengthening and facilitating the proper functioning of well-defined and structured commodity value chain is critical in this plan period. For examples, MoFA has already adopted championing this approach through this plan, by facilitating the establishment of the **Tree Crops Industry Association**. This will be replicated for other priority commodities. Various commodity industry associations will make contribution to the funds in a form of industry out-put levies. Thus, the more the industry grows the higher the revenue to be generated. Smart subsidies provided as direct transfer to farmer organisations and agri-food firms and other forms of support targeting production, research and training would be considered as forms of supports to association players. Likewise, the resources will be used to capitalise promoted enterprises and transferred later to the general public as equities or debts. Government will provide the seed money for the funds and entrust GADF to the industry association to manage the operations of the funds.

270. Government will implement the menu of policy tools to address 3 categories of investments, with the aim to leverage private investments. It is expected that GHS 1 of public expenditure (devoted to implementing adequate key activities) will leverage at least GHS 20 of private investment. The 3 investment categories are:

271. Investment Category 1 – Building the systems (public and private sectors) that will generate the outcome results. These include: (i) the public-sector governance and accountability system; (ii) a nexus of private sector enterprises; and (iii) Commodity Associations (iv) Agri-Food Industry Association (AFIA). The primary function of the public sector governance system is to ensure that the structured

arrangements for the effective functioning of the agri-food system are adhered to by all the actors. The governance system provides a set of rules and procedures for implementing the structured arrangement such as contract farming with smallholders, accounting for public resources, co-operate governance procedures for PPPs, and the transfer of resources to the private sector.

272. A nexus of private sector enterprises will be promoted to deliver the goods and services required for the effective operation of the agri-food system. These services include input delivery, mechanisation services, market access, knowledge and skills delivery, transport services and other related services such as management and information systems, accounting, etc. Other enabling services such as laboratories, certification, and collateral management services would also be provided by the private sector. Producers, both small and large, would be encouraged to form commodity associations that would be structured from their communities through to the national level. These commodity associations would be the backbone for organising all producers of the commodity in a structured manner to participate in the agri-food system. An apex association comprising all the commodity associations at the national level would form the agri-food system.

- **The public-sector governance and accountability system** – The aim is to ensure sound sector management and build transparency and trust among sector stakeholders. The system will include 2 components:
 - **A Planning, Monitoring & Evaluation, and Reporting System**, that would be designed to empower MoFA to ensure alignment and harmonisation of Government and Donor interventions and account for results.
 - **A Financial management system** that: (i) links sector funding to medium term expenditure framework; (ii) allocate sector resources to specific key activities; (iii) entrusts private agencies to manage some of the implementation of key activities; (iv) accommodates various donor financing mechanisms and harmonise them with Government's tools; (v) enhances the mechanisms for effective oversight of parliament on sector budget and expenditure; and (vi) ensures periodic audit and review.

- **A nexus of private sector enterprises**
- **The Agricultural Clusters Service Enterprises (ACSEs)** as drivers of commodity value chains. ACSEs will be promoted as joint venture between farmer organisations, private operators, and Local Government that will progressively transfer its shares to the general public through equities or debts. These enterprises will be licensed to manage warehouses as collateral.
- **The Market Hub Firms (MHFs)** is critical for the transformation of the Ghana food distribution chains. As for the ACSEs, The Government will promote MHFs as a joint venture between ACSEs, Banks, private firms, and Government (Central, or Local) that will progressively transfer its shares to the general public through equities or debts.
- **Other Micro, Small and Medium Enterprises** will be promoted to deliver a wide range of goods and services to farmers and other value chain players, including mechanisation services, soil testing services, earth warm provision, compost provision, certified seeds provision, veterinary services, and livestock breeding services including artificial insemination, milk collection, feed provision, business management services, among others.
- **The Agri-Food Industry Association (AFIA).** AFIA will be promoted as an association that represents all the players (farmers, farmer organisations, and private firms) of the agri-food systems. The agency will be equipped with **a corporate governance system complying with international norms**. This will ensure members effectively keep managers accountable. In

addition, because Government can keep the agency accountable, AFIA will be entrusted to implement the Ghana Agri-food-systems Development Fund.

273. Investment Category 2 – Developing critical infrastructures. These include irrigation schemes in accordance with ‘1 Village – 1 Dam’, feeder roads, market hub infrastructures and warehouses. The institutional arrangements regarding ownership, operation and maintenance of these infrastructures will be duly clarified.

274. Investment Category 3 – Direct transfer to farmers and firms through smart subsidies, crafted to incentivise private financing. Most of these subsidies are one-time expenditure by the public sector to enable value chain players, specifically farmers and small and medium enterprises to enhance their productivity and competitiveness.

275. The three categories of public sector investment will represent approximately 20% of the total budget for direct transfers, 30% for building agri-food systems, and 50% for the critical infrastructure.

4.6 Alignment of Policy objectives, Strategies and Programmes

276. Table 4.1 shows the linkages between the policy objectives and the IFJ Programme areas. As shown in the table, each of the prescribed strategies is to be implemented through programme and sub-programmes with a combination of specific policy tools, under various investment areas.

Table 4.1: Alignment of Policy Objective and Strategies to the IFJ Programmes Areas

Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<ul style="list-style-type: none"> · Poor marketing systems · High cost of production Inputs 	<p>4.1 Promote a Demand driven approach to agricultural development</p>	<p>4.1.1 Facilitate capacity building in negotiations, standards, regulations and skills development in contracting for actors along the value chain</p> <p>4.1.2 Ensure implementation of the Ghana Commercial Agriculture Project (GCAP) to link both smallholder and commercial producers to industry</p> <p>4.1.3 Develop market support services for selected horticulture, food and industrial crops to enhance production for export</p> <p>4.1.4 Facilitate and support the establishment of stakeholder controlled marketing companies for grains and selected products, including a Cashew Marketing Authority</p> <p>4.1.5 Promote and expand organic farming to enable producers access the growing world demand for organic products</p>	<p>1. Sector Management and Administration</p> <p>2. Crops and Livestock Development</p>	<p>1.2 Human Resource, Development and Management</p> <p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.3 Post-harvest Management and Agricultural marketing</p> <p>2.4 Nutrition Sensitive Agriculture</p>

Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<p>Inadequate development of and investment in processing and value addition</p>	<p>4.2 Ensure improved Public Investment</p>	<p>4.2.1 Accelerate the provision of critical public infrastructure such as feeder roads, electricity and water</p> <p>4.2.2 Develop tailor-made agricultural financing, especially long-term Instrument</p> <p>4.2.3 Design and implement needs-based technical assistance and extension support</p> <p>4.2.4 Institute tax relief and incentives for agriculture investment</p> <p>4.2.5 Restructure MOFA to have a marketing department to work with MOTI to support the demand-driven agenda</p> <p>4.2.6 Introduce District Chamber of Agriculture, Commerce and Technology (DCACT) with the mandate to promote agri-business through enhanced interface between the private and public sectors at the district level</p> <p>4.2.7 Support the development of at least two exportable agricultural commodities in each district</p> <p>4.2.8 Create District Agriculture Advisory Services (DAAS) to provide advice on productivity enhancing technologies</p>	<p>1. Sector Management and Administration</p> <p>2. Crops and Livestock Development</p> <p>3. Agribusiness Development</p>	<p>1.1 Finance and Administration</p> <p>1.4 Research, Statistics, Information, Communication and Public Relations</p> <p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.3 Post-harvest Management and Agricultural marketing</p> <p>3.1 Promotion of Private Sector Investment in Agriculture</p> <p>3.2 Agricultural Finance</p>



Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<ul style="list-style-type: none"> · Low application of technology especially among smallholder farmers leading to comparatively lower yields · Low level of irrigated agriculture · Seasonal variability in food supply and prices · Erratic rainfall patterns · Encroachment of designated irrigation sites · Ineffective gender and disability engagement in irrigation · High cost of energy for irrigation 	4.3 Improve production efficiency and yield	4.3.1 Establish modalities and regulatory frameworks for production of seed/planting materials, and other agro inputs, 4.3.2 Increase investment in research and development of climate resilient, high yielding disease and pest resistant, short duration crop varieties, taking into account consumer health and safety 4.3.3 Reinvigorate extension services 4.3.4 Ensure effective implementation of the yield improvement Programme 4.3.5 Intensify and increase access to agricultural mechanisation along the value chain 4.3.6 Promote commercial and block farming 4.3.7 Implement Government's flagship intervention of 'One village One dam to facilitate the provision of community-owned and managed small-scale irrigation, especially in the Afram Plains and Northern Savannah 4.3.8 Mobilise investment to expand and rehabilitate irrigation infrastructure including formal schemes, dams and dugouts	1. Sector Management and Administration 2. Crops and Livestock Development 3. Agribusiness Development	1.1 Finance and Administration 1.3 Policy, Planning, Monitoring, Evaluation, Budgeting and Coordination 1.5 Early Warning Systems and Emergency Preparedness 2.1 Crops and Livestock Production and Productivity Improvement 2.2 Mechanisation, Irrigation and Water Management 2.3 Post-harvest Management and Agricultural marketing 2.4 Nutrition Sensitive Agriculture 3.1 Promotion of Private Sector Investment in Agriculture 3.2 – Agricultural Finance
		4.3.9 Support the development of both public and private sector large scale irrigation schemes		

Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
		<p>4.3.10 Develop systems to harvest excess water for irrigation</p> <p>4.3.11 Develop and promote appropriate and affordable and modern irrigation technologies for all agro ecological zones</p> <p>4.3.12 Promote the use of solar and wind energy for irrigation</p> <p>4.3.13 Advocate for differential energy pricing for irrigation schemes</p> <p>4.3.14 Secure land title for designated irrigation sites</p> <p>4.3.15 Mainstream gender and disability issues into irrigated agriculture</p> <p>4.3.16 Develop policies and legal regime, and appropriate tenure arrangement for use of irrigation facilities</p> <p>4.3.17 Develop the capacity of farmers to use meteorological information</p>		



Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<ul style="list-style-type: none"> · Poor storage and transportation systems · Poor farm-level practices, · High cost of conventional storage solutions for smallholder farmers · Low quality and inadequate agriculture infrastructure 	4.4 Improve Post-Harvest Management	<p>4.4.1 Support selected products beyond the farm gate in post-harvest activities, including storage, transportation, processing, packaging and distribution</p> <p>4.4.2 Provide incentives to the private sector and district assemblies to invest in post-harvest activities</p> <p>4.4.3 Provide support for small- and medium-scale agro-processing enterprises through the One District, One Factory initiative</p> <p>4.4.4 Ensure continuous expansion and upgrading of road infrastructure connecting farms to marketing centres</p> <p>4.4.5 Reorganize the national food buffer stock agency to be more efficient and market oriented to give incentives for private sector participation</p> <p>4.4.6 Facilitate the provision of storage infrastructure with a drying system at the district level and a warehouse receipt system</p> <p>4.4.7 Facilitate trade and improve the environment for commercial activities</p> <p>4.4.8 Implement commodities trading centres (i.e. Modern Farmers' Market) across all MMDAs focusing on grains, vegetables and tubers marketing</p>	<p>3. Agribusiness Development</p> <p>2. Crops and Livestock Development</p>	<p>3.1 Promotion of Private Sector Investment in Agriculture</p> <p>3.2 – Agricultural Finance</p> <p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.2 Mechanisation, Irrigation and Water Management</p> <p>2.3 Post-harvest Management and Agricultural marketing</p> <p>2.4 Nutrition Sensitive Agriculture</p> <p>2.5 Diversification of Livelihood options</p>

Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<p>Lack of database on farmers</p> <ul style="list-style-type: none"> · Limited insurance for farming activities · Inadequate agribusiness enterprise along the value chain · Low transfer and uptake of research finding · Limited application of science and technology 	<p>4.5 Enhance the application of science, technology and innovation</p>	<p>4.5.1 Promote the application of information and communications technology (ICT) in the agricultural value chain in order to minimize cost in all operations</p> <p>4.5.2 Improve the effectiveness of Research-Extension-Farmer Liaison Committees (RELCs) and integrate the concept into the agriculture research system to increase participation of end users in technology development</p> <p>4.5.3 Establish a database on all farmers, drawn from the national identification system</p> <p>4.5.4 Promote agriculture insurance schemes to cover agriculture risks</p> <p>4.5.5 Disseminate information on weather and prices</p> <p>4.5.6 Strengthen research programmes of the Council for Scientific and Industrial Research (CSIR), as well as of the agricultural and related sciences departments of public universities and other institutions</p> <p>4.5.7 Develop local fertilizers industry based on gas and petroleum resources to improve agricultural yield and save foreign exchange</p>	<p>2. Crops and Livestock Development</p> <p>3. Agribusiness Development</p> <p>4. Sustainable management of Land and Environment</p>	<p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.2 Mechanisation, Irrigation and Water Management</p> <p>2.3 Post-harvest Management and Agricultural marketing</p> <p>2.4 Nutrition Sensitive Agriculture</p> <p>3.2 Agricultural Finance</p> <p>4.1 Conservation of Natural Resources</p> <p>4.2 Climate Change Mitigation and Resilience Scheme.</p>



Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<ul style="list-style-type: none"> · Ageing farmer population · Lack of youth interest in agriculture · Inadequate start-up capital for the youth · Lack of credit for agriculture · Inadequate access to land for agriculture production 	<p>4.6 Promote agriculture as a viable business among the youth</p>	<p>4.6.1 Support youth to go into agricultural enterprise along the value chain</p> <p>4.6.2 Develop and implement programmes to attract youth into off farm activities such as handling, processing, packaging and Transportation</p> <p>4.6.3 Provide financial support for youth by linking them to financial institutions for the provision of start-up capital</p> <p>4.6.4 Design and implement special programmes to build the capacity of the youth in agricultural operations</p> <p>4.6.5 Support the youth to have access to land</p>	<p>3. Agribusiness Development</p> <p>2. Crops and Livestock Development</p>	<p>3.1 Promotion of Private Sector Investment in Agriculture</p> <p>3.2 – Agricultural Finance</p> <p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.5 Diversification of livelihood options</p>
<ul style="list-style-type: none"> · Low quality genetic material of livestock species · Low level of husbandry practices, · Low productivity and poor handling of livestock/poultry products · Inadequate feed and water quality standards for livestock · Inadequate and poor quality data 	<p>4.7 Promote livestock and Poultry development for food security and income generation</p>	<p>4.7.1 Finalise the Veterinary Services and Animal Production Bill and amend the Veterinary Surgeon's Law of 1992</p> <p>4.7.2 Enact legislation to cover poultry hatchery, livestock breeding, meat inspection and anti-dumping of poultry</p> <p>4.7.3 Ensure effective implementation of METASIP to modernise livestock and poultry industry for development</p> <p>4.7.4 Strengthen research into large scale breeding and production of livestock across the country</p> <p>4.7.5 Strengthen existing training facilities and establish additional ones in animal health</p>	<p>1. Sector Management and Administration</p> <p>2. Crops and Livestock Development</p> <p>3. Agribusiness Development</p>	<p>1.1 Finance and Administration</p> <p>1.2 Human Resource, Development and Management</p> <p>1.3 Policy, Planning, Monitoring, Evaluation, Budgeting and Coordination.</p> <p>2.1 Crops and Livestock Production and Productivity Improvement</p> <p>2.2 Mechanisation, Irrigation and Water Management</p>

Issues	Adopted Policy Objectives	Adopted Strategies	IFJ Programme	Sub-Programmes
<ul style="list-style-type: none"> · Inadequate disease monitoring and surveillance system · Low levels of value addition to livestock and poultry produce 		<p>4.7.6 Intensify disease control and surveillance especially for zoonotic and scheduled diseases</p> <p>4.7.7 Promote cattle ranching and provide incentives to the private sector to develop grazing reserves for ruminant and livestock</p> <p>4.7.8 Facilitate the establishment of Livestock Development Centres in the three agro-climatic zones in collaboration with the private sector, to promote the production of cattle and small ruminants like sheep and goats</p> <p>4.7.9 Facilitate access to credit by the industry</p> <p>4.7.10 Strengthen livestock and poultry research and adoption</p>		<p>2.3 Post-harvest Management and Agricultural marketing</p> <p>2.4 Nutrition Sensitive Agriculture</p> <p>2.5 Diversification of Livelihood options</p> <p>3.1 Promotion of Private Sector Investment in Agriculture</p> <p>3.2 – Agricultural Finance</p>



Banana ready for harvesting

Chapter Five: Programme of Action

277. This Chapter presents the Programme of Action which outlines the Investment Areas and Policy Tools to be implemented and their corresponding indicative budget from 2018 to 2021. Table 5.1 shows the summary of the indicative budgets for implementing the four (4) programme areas for the entire period of the plan whilst Table 5.2 shows indicators, baseline, indicative budget and implementing agencies for each activity.
278. The costs of implementing this Plan (excluding that of the cocoa sub-sector strategy) was estimated by costing activities outlined to implement each Policy Tool. The costing structure corresponds to the hierarchy of Programmes, Sub-Programmes, Investment Areas and Policy Tools. This provides clear analytical links from the goal of the agriculture sector to the objectives, strategies, programmes and their expected outcomes for activities and to inputs. Input costing was applied wherever possible using inputs estimated. Where input costing was not possible, expert judgement and experience was applied to estimate costs for activities. The resulting cost estimates for the plan are therefore indicative.
279. The total indicative budget for the IFJ (4 years) is estimated at GH¢ 9,543.28 million as shown in Table 5.1. The government of Ghana is committed to contributing 65% (GH¢ 6,203.13 million) of the total cost of implementation within the medium term period whilst the donor community are expected to support the remaining 35% (GH¢ 3,340.15 million). About 36% (GH¢ 3,422.16 million) is/will be secured through the national annual budgets which include secured donor support whilst the remaining 64% (GH¢ 6,121.12 million) is established funding gap.

Table 5.1: IFJ Budget Estimates (GH¢)

Programme Areas	Indicative Budget (GH¢)				
	2018	2019	2020	2021	Total
Programme 1: Management and Administration	196,302,447	201,331,490	205,982,628	211,098,880	814,715,445
SP 1.1: Finance and Administration	154,820,105	154,820,105	154,820,105	154,820,105	619,280,420
SP 1.2: Human Resource Development and Management	26,667,220	29,900,176	32,890,193	36,179,212	125,636,801
SP 1.3: Policy, Planning, Budgeting, Monitoring and Evaluation	11,852,098	13,288,967	14,617,864	16,079,650	55,838,579
SP 1.4: Research, Statistics, ICT and Public Relations	2,963,024	3,322,242	3,654,466	4,019,913	13,959,645
Programme 2: Crops and Livestock Development	747,101,841	2,311,006,067	2,557,336,045	2,800,844,663	7,669,186,775
SP 2.1: Crops and Livestock Production and Productivity Improvement	529,567,018	1,145,951,043	1,235,083,067	1,320,304,449	3,701,338,559
SP 2.2: Mechanisation, Irrigation and Water Management	160,451,150	1,049,225,900	1,229,952,735	1,423,509,594	3,702,688,229
SP 2.3: Post Harvest Management and Agricultural Marketing	54,678,233	112,942,596	88,836,410	52,874,020	254,653,026
SP 2.4: Nutrition Sensitive Agriculture	2,405,440	2,886,528	3,463,834	4,156,600	10,506,962
SP 2.5: Emergency Preparedness	81,644,817	90,026,299	99,076,929	109,042,221	298,145,449
Programme 3: Agribusiness Development	21,405,000	31,202,000	34,592,200	35,951,820	123,151,020
SP 3.1: Promotion of Private Sector Investment in Agriculture	85,000	2,390,000	2,213,000	1,794,700	6,482,700
SP 3.2: Agricultural Finance	21,320,000	28,812,000	32,379,200	34,157,120	116,668,320
Programme 4: Sustainable Development of Land and Environment	201,898,053	222,226,925	244,650,097	267,449,989	936,225,064
SP 4.1: Conservation of Natural Resources	4,600,000	5,060,000	5,566,000	6,122,600	21,348,600
SP 4.2: Climate Change Mitigation and Resilience Schemes	197,298,053	217,166,925	239,084,097	261,327,389	914,876,464
Grand Total	1,166,707,341	2,765,766,482	3,042,560,970	3,315,345,352	9,543,278,304
Government of Ghana Contribution (GOG)	758,359,772	1,797,748,213	1,977,664,631	2,154,974,479	6,203,130,898
Expected Development Partner Contribution (Donor)	408,347,569	968,018,269	1,064,896,340	1,160,370,873	3,340,147,406
Total Secured		967,845,075	1,150,402,308	1,303,912,970	3,422,160,353
GAP (Total not Secured)		- 1,797,921,407	- 1,892,158,662	- 2,011,432,382	- 6,121,117,951
GoG (MoFA Secured)		471,226,566.00	673,661,929.00	803,448,315.00	1,948,336,810.00
GAP (GOG)		(1,326,521,647.24)	(1,304,002,701.63)	(1,351,526,163.75)	- 3,982,050,512.61
Donor (Secured)		496,618,509	476,740,379	500,464,655	1,473,823,543.00
GAP (Donor)		- 471,399,760	- 588,155,961	- 659,906,218	- 1,719,461,938.41

Table 5.2 A: Programme of Action (POA) for Programme 1

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies
							Lead Collaborating
1: Sector Management and Administration						814,715,445.00	F&A All MoFA Directorates
	1.1: Finance and administration			Timeliness in meeting deadlines for submission of program performance and financial reporting Number of districts (DADS) that have developed costed action plans derived from district plans		619,280,420.00	
		1.1.1 Management of Assets and Liabilities;		Number of MoFA, Regional & District Agriculture Department Staff that received training in management of assets and liabilities during the past three years		123,856,084.00	F&A All MoFA Directorates
		1.1.2 Procurement processes;		Number of procurement queries		123,856,084.00	F&A All MoFA Directorates

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
		1.1.3 Policy development processes and related issues;		Number of financial policies / regulations / administrative procedures in each of the following stages of development in each case: Stage 1: Analysed Stage 2: Drafted and presented for public/stakeholder consultation Stage 3: Presented for legislation Stage 4: Passed/approved Stage 5: Passed for which implementation has begun		185,784,126.00	PPMED	All MoFA Directorates
		1.1.4 Auditing financial transaction and responding to audit queries;		Number of DAD staff trained on financial management		123,856,084.00	F&A	All MoFA Directorates
		1.1.5 Provision of legal services.		Proportion of legal cases that were adjudicated		61,928,042.00	F&A	All MoFA Directorates
	1.2: Human resource development and management			Percent of requires staff for all MoFA directorates and agencies at posts Number of fully staffed RADs		125,636,801.00		
		1.2.1 Facilitate staff training		Number of trainings for RADs staff annually		106,465,182.10	HRDMD	All MoFA Directorates

Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
		1.2.2 Conduct tracer studies and outreach programmes		Number of tracer studies and outreach programme reports		6,607,938.80
		1.2.3 Coordinate staff progression activities		Percent of staff appraisal reports that meet deadlines for submission for promotion interviews		12,563,680.10
	1.3: Policy, planning, budgeting, monitoring and evaluation			Timeframe for carrying the development of policies / regulations / administrative procedures through to implementation		55,838,579.00
		1.3.1 Conduct monitoring and evaluation on all projects		1. Percent of performance indicators with complete data 2. Number of special studies conducted		27,919,289.50
		1.3.2 Prepare and implement policies, plans and annual budget		Number of districts (DADs) that have developed a district agricultural development plans		5,583,857.90

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
		1.3.3 Prepare investment guide for the agriculture sector in Ghana.		Number of agricultural commodities for which investments guide are available during the year		2,534,915.91	PPMED	GIPC, MoF, All MoFA Directorates
		1.3.4 Coordinate programmes and project implementation in the agriculture sector.		Number of ASWG meetings held in the year		16,751,573.70	PPMED	All MoFA Directorates
	1.4: Research, statistics, information, communication and public relations			Number of Evidence-based policy and management decisions		13,959,645.00	SRID	All MoFA Directorates
		1.4.1 Collection, processing and analysis of area, yield and production data on major crops		<ol style="list-style-type: none"> Number of RADs producing quarterly results-oriented reports Percent of DADs who report annually on cropped area, yield and production Number of districts collecting SRID required agricultural data 		4,187,893.50	SRID	All MoFA Directorates

Thematic Area: Agriculture and Rural Development									
Adopted MDA Goal (s): Transforming agriculture and industry									
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies		
							Lead	Collaborating	
		1.4.2 Collaboration with relevant stakeholders to collect, process and analyze livestock and poultry data		Percent of required livestock and poultry data available and analysed for scheduled reporting		1,395,964.50	SRID	All MoFA Directorates	
		1.4.3 Monitoring agricultural trade statistics, producer prices, farm input prices and transport charges for agricultural commodities		Number of agriculture trade related data compiled by SRID		1,395,964.50	SRID	All MoFA Directorates	
		1.4.4 Collection and analysis of weekly market prices of various agricultural produce at wholesale and retail levels		Average number days used for collection and analysis of National data on commodity prices		1,395,964.50	SRID	All MoFA Directorates	
		1.4.5 Preparation of annual crop budget for major crops		Date of the last production budgets for major selected crops prepared		4,187,893.50	SRID	All MoFA Directorates	

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
				Implementing Agencies			
				Lead	Collaborating		
		1.4.6 Establish and maintain a national operational and geo database		<p>1. Setting –up and operating a geo-referenced information system has evolved to one of the following stages: · Stage 1: Analysed · Stage 2: Drafted proposal and presented for public/stakeholder consultation · Stage 3: Presented for legislation · Stage 4: Passed/approved · Stage 5: Implementation has begun · Stage 6: Monitoring of implementation on-going</p> <p>2. Number of individuals accessing and using geo-referenced information from Ghana AGIS</p>		1,395,964.50	<p>SRID</p> <p>All MoFA Directorates</p>

Table 5.2 B: Programme of Action (POA) for Programme 2

Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
						Implementing Agencies
						Lead
						Collaborating
2: Crops and Livestock Development						7,669,186,775
	2.1: Crops and livestock production and productivity improvement			<p>Average on-farm yields (kg/ha) of targeted crops:</p> <p>Maize</p> <p>Rice (Paddy)</p> <p>Millet</p> <p>Sorghum</p> <p>Cassava</p> <p>Yam</p> <p>Cocoyam</p> <p>Plantain</p> <p>Groundnut</p> <p>Cowpea</p> <p>Soya bean</p> <p>Rate of growth in the production of livestock and poultry (%)</p> <p>Cattle</p> <p>Sheep</p> <p>Goat</p> <p>Pigs</p> <p>Poultry</p> <p>Percent contribution of the livestock sub-sector to AGDP</p>	<p>1,958.80</p> <p>721.61</p> <p>164.68</p> <p>277.54</p> <p>19,137.94</p> <p>8,252.94</p> <p>1,387.29</p> <p>4,278.83</p> <p>437.77</p> <p>211.47</p> <p>170.49</p> <p>4.7%</p> <p>4.9%</p> <p>6.1%</p> <p>5%</p> <p>2%</p> <p>5.4%</p>	3,701,338,559

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
		2.1.1 Promoting Improved Genetic Resources	2.1.1.1 – Promotion of genetic improvements in livestock and plants to increase productivity and disease resistance	<p>Number of improved varieties of plants and breeds of livestock made available</p> <p>Number of genetic resources in one of the following phases of improvement in: • Phase I: under research as a result of programme assistance</p> <p>• Phase II: under field testing as a result of programme assistance</p> <p>• Phase III: made available for transfer as a result of programme assistance</p>		6,028,000	MoFA (CSD, APD),	CSIR (ARI, CRI), PGRRI
			2.1.1.2 – Enhancing seed certification capacity	Number of entities providing seed certification services		871,600	PPRSD	CSD, NSC, NASTAG
			2.1.1.3 – Enhancing the production and utilisation of certified seeds (including plant propagating materials).	<p>Number of registered private seed companies supplying certified seeds</p> <p>Number of hectares planted to certified seeds of improved varieties of target crops under PFJ</p>		1,226,299,353	CSD	NASTAG, Wenchi, Mampong, Asuansi, Kpeve and Babile Agric. Stations

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.1.1.4 – Enhancing the production and utilisation of improved livestock breeds.	Number of improved livestock breeds produced and sold to farmers		273,238,580	APD Private Sector
				Quantities to imported Fertilizer, Agro-Chemicals and Veterinary Medicines			AESD CSD, PPRSD
		2.1.2 Enhancing farmers' access to fertilizer, agro-chemicals and veterinary medicines		Average Quantity of fertilizer used per hectare of target crop			
				Number of retail outlets for Fertilizer, Agro-Chemicals and Veterinary Medicines			
			2.1.2.1 - Promotion of fertilizer blending	Number of varieties of blended fertilizer		300,000	CSD, SRI DAES
			2.1.2.2 - Promotion of soil testing services	Number of soil testing providers in farming communities		18,457,200	CSD, SRI DAES
			2.1.2.3 - Enhancing farmers' access to blended fertilizer	Number of retail outlets with blended fertilizer		2,553,427,884	CSD, CSIR-SRI DAES
			2.1.2.4 - Promoting the safe use of agro-chemicals	Number of reported cases of unsafe application of agro-chemicals		2,752,200	MoFA – PPRSD, DCS, CSIR-SRI DAES
			2.1.2.5 - Promoting farmers' access to veterinary medicines	Number of retail outlets for veterinary medicine in rural communities		19,763,500	MoFA – VSD MoFA – APD, ARI, DAES

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.1.2.6 Promoting access to plant disease prevention and control methods	Cumulative number of plant disease prevention and control methods promoted		0	MoFA – PPRSD, MoFA, DCS, DEAS
		2.1.3 Promoting the production and use of quality feed		Percent share of local produce in national animal feed markets			
			2.1.3.1 Promotion of feed production	Quantity of locally produced commercial aquaculture, poultry and livestock feed		58,742,000	MoFA - APD DCS, GSA, FDA, Feed Producers Assoc.
			2.1.3.2 Enhancing farmers' access to quality feed	Number of retail outlets for aquaculture, poultry and livestock feed		7,408,800	MoFA - APD DCS, GSA, FDA, Feed Producers Assoc.
		2.1.4 Promoting technology development and adaptation		Number of farmers, processors and distributors that applied improved technology and management practices as result of agricultural extension service			

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.1.4.1 Development and adaptation of technologies	Number of RELC generated technologies disseminated Number of technologies for meeting farmers' needs in one of the following phases of development or adaptation during the planned period: - Phase I: under research - Phase II: under field testing - Phase III: made available for transfer Level of Farmer participation in Research Extension Farmer Linkages Committees (RELCs)		14,220,000	MESTI, CSIR, MoFA-DAES, APD, CSD, Universities
			2.1.4.2 Development and adaptation of knowledge packages for smallholder farmers	Number of farmer constraints/problems identified for CSIR research		3,200,000	CSIR, MoFA-DAES, MoFA – CSD, APD, VSD, PPMED



Thematic Area: Agriculture and Rural Development											
Adopted MDA Goal (s): Transforming agriculture and industry											
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies				
							<table border="1"> <tr> <th>Lead</th> <th>Collaborating</th> </tr> <tr> <td>CSIR, MoFA- DAES</td> <td>MoFA – CSD, APD, VSD, PPMED</td> </tr> </table>	Lead	Collaborating	CSIR, MoFA- DAES	MoFA – CSD, APD, VSD, PPMED
Lead	Collaborating										
CSIR, MoFA- DAES	MoFA – CSD, APD, VSD, PPMED										
			2.1.4.3 Promotion of agricultural research on plant breeding, and animal and plant disease control	<p>Number of research on plant breeding, and animal and plant disease control in one of the following phases of development or adaptation during the planned period:</p> <ul style="list-style-type: none"> - Phase I: under research - Phase II: under field testing - Phase III: made available for transfer 		7,863,060					
		2.1.5 Promoting technology dissemination		Number of improved technologies disseminated by the projects							



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.1.5.1 Dissemination of technologies to meet value chain players' demand	<p>Number of farmers who have received extension services through the PFJ program</p> <p>Percent of targeted farmers with access to E-extension and/or E-voucher schemes</p> <p>Number of extension SMS messages sent to Farmers by DADS</p> <p>Number of farmers who visit the Agriculture Information Centres (AICs)</p> <p>Number of Agriculture Information Centres (AICs) functional</p> <p>Percent of PFJ beneficiaries accessing extension information via ICT channels</p>		28,980,000	<p>MoFA DAES</p> <p>CSIR, Commodity Assoc., MoFA-APD, CSD, VSD, PPRSD</p>

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.1.5.2 Dissemination of knowledge packages	Number of extension demonstrations facilitated by AEAs or project staff Number of radio broadcasts on extension related materials Extension officer-farmer ratio (excluding cocoa extension officers)	1:1,500	2,600,000	MoFA DAES Commodity Assoc., MoFA-APD, CSD, VSD, PPRSD
			2.1.5.3 Promotion of youths' access to Competency Based Trainings through the ATVET approach	Number of individuals benefiting directly from programmed skill-based training Percent of resources budgeted for Skill Based Trainings for the Youth that was approved and disbursed		6,753,400	MoFA, HRDMD, Academia, ATVET
	2.2	Mechanisation, Irrigation and Water Management;		Total production of selected crops		3,702,688,229	



Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
				Implementing Agencies		
				Lead	Collaborating	
		2.2.1 Promoting agricultural mechanisation	2.2.1.1 Promoting reorganisation of farm lands to enable the delivery of mechanisation services to smallholder farmers	<p>Number of tractors per 1000 hectares of arable land</p> <p>Tractor/farmer ratio</p> <p>Number of hire tractor service contracts</p> <p>Number of farmers adopting mechanisation technologies for the following production and processing activities: • Land preparation • Sowing</p> <ul style="list-style-type: none"> • Fertilizer application • Irrigation • Spraying • Harvesting • Selling / Winnowing • Processing 		2,191,530,000
						MoFA – AESD, MLNR, MMDAs

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.2.1.2 Promoting mechanisation service enterprises	Number of small and medium enterprises providing services for mechanisation technologies for the following production activities: · Land preparation · Sowing · Irrigation · Spraying · Harvesting · Winnowing · Processing Number of agricultural mechanisation services centres established Total number of farmers trained in the proper use and handling farm machinery		133,440,000	MoFA – AESD, MLNR, MMDAs
			2.2.1.3 Promotion of farm and post farm machinery manufacturing	Number of local small and medium entities that manufacture machinery for the following production activities: · Land preparation · Sowing · Irrigation · Spraying · Harvesting · shelling/ Winnowing · Processing		11,000,000	MoFA -AESD
			2.2.1.4 Modernisation of agricultural holdings			8,010,000	MoFA
			2.2.1.5 Support to Livestock Housing				MoFA -APD GSA,

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)		
							Lead	Collaborating
		2.2.2 Promoting Irrigation And Water Management	2.2.2.1 Delegation of public sector role in the development and management of large scale irrigation schemes	Area (in hectares) provided with improved irrigation and drainage services (disaggregated by New & Existing) Length of canals newly constructed or rehabilitated. Percentage of cultivated lands under irrigation Number of firms/civil society organisations participated in the development of large-scale irrigation schemes Number of large-scale Irrigation Schemes that have private scheme management entities			GIDA	MoFA, MoF,
			2.2.2.2 Promoting community based managed small and medium scale irrigation schemes	Number of Operational WJAs established and functional		889,851,430	GIDA	MoFA
			2.2.2.3 Promoting individual micro and small-scale irrigation schemes.	Number of individuals investing in micro and small scale irrigation facilities Area of inland valley (Nasia-Nabogo) developed		1,132,119	GIDA	MoFA
						623,248,030	GIDA	MoFA



Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)		
							Lead	Collaborating
			2.2.2.4 Promoting enhanced water management in rain-fed agriculture.	Proportion of PFJ registered farmers adopting integrated soil fertility management techniques		171,800	GIDA	MoFA
			2.2.2.5 Promoting market-oriented irrigation development	Proportion of expected total irrigation service charges that is actually collected		1,556,000	GIDA	MoFA
			2.2.2.6 Addressing irrigation sector risks	Cumulative Number of PPPs for irrigation development		2,000,000	MoFA, PPMED, GIDA	NIC, GAIP, BOG-GIRSAL,
			2.2.2.7 Mobilizing public resources to finance the development of irrigation schemes	Value of public investments in irrigation		1,200,000	GIDA,	MoFA, MoF
				Percent post-harvest losses		254,653,026		
				Value of new private sector investment in the agriculture sector or food chain leveraged by implementation of GoG and Donor interventions (disaggregated by areas of investment)				
	2.3 Post-harvest Management and Agricultural Marketing							
		2.3.1 Value chain development						

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
				Implementing Agencies			
				Lead	Collaborating		
			2.3.1.1 Promoting the aggregation of smallholder farmers into upgraded value chains.	Number of farmers in functional commodity based FBOs/ Networks		80,577,113	DAES PPMED, Commodity Assoc. FBOs
			2.3.1.2 Promoting the development of private sector led post-harvest facilities	Number of functional storage warehouses in operational areas as a result of various projects including PFJ Size of national buffer stock (metric tonnes): Maize (white), Maize (yellow) and rice Change in installed storage capacity resulting from agricultural projects		127,023,520	MoFA – AESD,
			2.3.1.3 Development of feeder roads and other transport infrastructure.	Kilometres of feeder roads improved or constructed			DFR, COCOBOD MoFA, MoF, MMDAs
			2.3.1.4 Creating a national market information system to gather, analyse and disseminate relevant information for agricultural sector	Number of information dissemination tools used for different stake holders		422,000	MoTI MoFA, MILGRD, MMDAs,

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.3.1.5 Promotion of farmers markets and community markets	Cumulative number of active farmers markets and community markets		3,300,000	MoFA MoTI,
		2.3.2 Market intervention schemes		Percent of agri-food products of selected supermarkets sourced from local producers			
			2.3.2.1 Developing and enacting market intervention schemes for specific (perishable) agriculture products	Developing and enacting regulatory framework for marketing specific agricultural products is at one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation is on-going		11,440,000	MoFA, MoTI MJAGD
			2.3.2.2 Establishing minimum support price for key commodities.	Cumulative number of commodities with minimum support prices established		3,262,500	MoFA NAFCO, GCX

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.3.2.3 Government procurement from domestic farmers	Number of new marketing agreements between private food aggregators and public food programs Volume of selected grains sourced by public food programs		76,970,726	MoFA, NAFCO GCX, SFP
				Number of products that have SPS standards developed and disseminated			
		2.3.3 Promotion of quality measures	2.3.3.1 Promoting SPS measures	Active participation of SPS stakeholders in coordination mechanisms		728,000	MoFA- PPRSD FDA, GSA, MoTI, FAGE, VSD,
			2.3.3.2 Promoting food quality labels	Efforts at strengthening FDA to enforce the use of food quality labels has evolved to one of the follow states: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation is on-going		624,400	FDA, GSA, MoTI, FAGE, VSD,

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Lead	Collaborating Agencies	
			2.3.3.3 Establishing a quality assurance certification process in food production, processing and distribution	Legal and administrative framework for establishing a certification process for food production, processing and distribution is at one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun		4,843,000	FDA, GSA MoTI, FAGE, VSD, MoFA
			2.3.3.4 Participation of farmers in food quality schemes	Number of farmer/firms certified in good practices		140,000	MoFA MoTI, FDA, GSA
				Prevalence of anaemia among children 6-59 months			
2.4: Nutrition Sensitive Agriculture				Prevalence of anaemia among women of reproductive age		10,506,962	
		2.4.1 Promotion of nutrition rich foods		Percentage of national budget allocated to nutrition			
				Prevalence of wasted children under five years of age			

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.4.1.1 Implementing food fortification measures	<p>Number of nutrient-specific fortification programs</p> <p>Number of demonstrations conducted on food fortification</p> <p>Number of people that benefited from food fortification demonstrations</p>		699,665	MoFA - WIAD CSIR-FRI, MoH, GHS,
			2.4.1.2 Promoting measures to strengthen dietary diversity	Prevalence of children 6-23 months receiving a minimum acceptable diet		9,528,737	MoFA - WIAD CSIR-FRI, MoH, GHS,
			2.4.1.3 Implementation of measures to provide and distribute specific foods for therapeutic and nutritional purposes to targeted demographics where needed	<p>Total quantity of targeted nutrition-rich value chain commodities set aside for home consumption by direct beneficiary producer households</p>		1,610,400	MoFA - WIAD CSIR-FRI, MoH, GHS,
			2.4.1.4 Enhancing the production and consumption of improved livestock breeds	Number of improved livestock breeds made available to farmers through targeted projects.		1,073,600	MoFA – APD, CSIR-ARI, GHS, MoH, MLGRD



Thematic Area: Agriculture and Rural Development									
Adopted MDA Goal (s): Transforming agriculture and industry									
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)			
							Implementing Agencies	Collaborating	
	2.5 Emergency preparedness			Value of losses resulting from plant and animal disease outbreak Agriculture sector emergency preparedness plans are developed and contain as a minimum: (1) Hazard and vulnerability analysis and risk mapping; (2) mechanism for coordination and control; (3) description of roles and responsibilities of different partners; (4) Pre-arrangements with partners (e.g. logistics support, medical supplies); and (5) Provisions for implementation and operationalisation of the plan (e.g. SOP)		298,145,449			
		2.5.1 Emergency readiness							
			2.5.1.1 Surveillance and prevention of plant pest and diseases					MoFA - PPRSD	MoFA CSD, DAES, CSIR-CRI,
			2.5.1.2 Surveillance and prevention of animal pest and diseases					MoFA - VSD	MoFA – APD, DAES, CSIR-ARI
							228,600		
							11,602,500		



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.5.1.3 Early warning system for natural disasters	Number of Districts with functional climatic condition surveillance systems in place with regular reporting.		2,817,000	MoFA GMET, NADMO,
			2.5.1.4 Knowledge dissemination measures and training of farmers in disaster preparedness methods	Number of emergency preparedness training organised through programme intervention during the year		2,147,200	MoFA - DAES APD, CSD,
			2.5.1.5 Provision of subsidised disaster insurance products	Legal and administrative framework for providing subsidised disaster insurance products is at one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun			NIC, GAIP MoFA, MoF, BOG-GIRSAL
			2.5.1.6 Promotions of seed and grazing reserves and storage facilities	Cumulative hectare of grazing reserves created		142,547,466	MoFA-APD ARI, CRI

Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
		2.5.2 Emergency Response		Percent of emergencies that had been responded to within a day after occurrence		
		2.5.2.1 rapid response and control of plant pest and disease		MoFA, Regional and MMIDA Administration Offices can demonstrate readiness for rapid responses and control of plant pest and disease through the following: a. EPR focal points/units/persons responsible for Agriculture sector are appointed; b. Adequate resources and support are in place.		74,256,000
		2.5.2.2 Rapid response and control of animal's pest and disease		MoFA, Regional and MMIDA Administration Offices can demonstrate readiness for rapid responses and control of animal pest and disease through the following: a. Agriculture sector EPR focal points/units/persons responsible are identified; b. Adequate resources are provided and support is in place		6,961,500
		2.5.2.3 Rapid response and control of natural resources		Standard Operating Procedures (SOP) developed, documented and easily accessible to staff		-



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			2.5.2.4 Provision of ex-port and ante aid to compensate for –natural disaster and disease epidemics	Value of financial resources allocated for the provision of ex-post ante aid in supplies and equipment in facilities such as shelter, food, water to compensate for natural disasters and disease epidemic, and prepositioned in strategic locations		83,538,000	NADMO MoFA, GMET, MGJWSP
			2.5.2.5 Rehabilitation of affected areas	Hectares of land affected by natural disaster rehabilitated		55,692,000	MoFA MoF, MoWH



Table 5.2 C: Programme of Action (POA) for Programme 3 - Agribusiness Management

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	Implementing Agencies Lead Collaborating
3: Agribusiness Development						123,151,020	
	3.1: Promotion of Private Sector Investment in Agriculture			Total value of private sector participation in PPP		6,482,700	
		3.1.1 Promoting a nexus of essential agriculture and food system private enterprises		Extent of farmers' access to cluster services			



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
				Implementing Agencies			
				Lead	Collaborating		
			3.1.1.1 Promoting Agriculture Cluster Service Enterprises (ACSE) and their sector or regional apexes	Facilitation process for: a) setting-up Agriculture Cluster Service Enterprises (ACSE) and their sector or regional apexes and b) providing establishing legal procedures for handling investors in the sector have in each case evolved to one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Corporate Management tools developed - Stage 4: Public sector equities provided (Seed Money) - Stage 5: Implementation has begun by private sector - Stage 6: Monitoring of implementation		748,200	MoFA - PPMED MoTI, MBD, PEF, FAGE, Commodity Assoc.



Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
			3.1.1.3 Promoting Small and Medium Rural Enterprises (SMRE)	Number of Small and Medium Rural Enterprises that are in one of these five stages of improved enterprise capacity: <ul style="list-style-type: none"> • Stage 1: undergoing capacity/competency assessments • Stage 2: assessments presented for consultation • Stage 3: undertaking capacity/competency strengthening • Stage 4: making significant improvements • Stage 5: mature/viable 		1,675,000
		3.1.2 Promoting agricultural industry associations		Self-assessment and expert assessment of Agricultural Industry Associations		

Implementing Agencies

Lead	MoFA - PPMED
Collaborating	MoTI, MBD, PEF, FAGE, Commodity Assoc., FBOs

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
				Implementing Agencies			
				Lead	Collaborating		
			3.1.2.1 Promoting the creation of an industry apex agency	Facilitation process for setting-up AFIA has evolved to one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation on-going		266,700	MoFA - PPMED MoTI, MBD, AGI, PEF, FAGE, Commodity Assoc. FBOS
	3.2: Agricultural Finance			Value of Agricultural and Rural Loans Number of MSMEs receiving programme assistance that received business development and risk management services		116,668,320	
		3.2.1 Agricultural risk sharing					



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			3.2.1.1 Developing and enacting regulation on agricultural clusters and monitoring its implementation	Developing and enacting regulatory framework on agricultural clusters is at one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation is on-going		600,000	MoFA - PPMED MJAGD, MoTI, MBD, PEF, FAGE, Commodity Assoc.
			3.2.1.2 Promotion of specific market and production contracts	The Stage at which developing and enacting regulatory framework to govern contractual arrangements is: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation on-going		464,100	MoFA - PPMED MoTI, MBD, PEF, FAGE, Commodity Assoc. FBOs,



Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
					Implementing Agencies		
					Lead	Collaborating	
			3.2.1.3 Promotion of agriculture insurance instruments	The Stage at which developing and enacting regulatory framework for agricultural insurance instrument is: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/ stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation is on-going		423,820	MoFA - PPMED NIC, GAIP, BOG-GIRSAL, MoF, MoTI, MBD, PEF, FAGE, Commodity Assoc., CSOs
			3.2.1.4 Promoting warehouse receipts system	Number of project beneficiaries accessing warehouse receipt as collateral and commodity exchange schemes		2,187,050	MoFA MoTI, MBD, GCX, NAFCCO, Commodity Assoc., FBO

Thematic Area: Agriculture and Rural Development							
Adopted MDA Goal (s): Transforming agriculture and industry							
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)	
				Implementing Agencies			
				Lead	Collaborating		
			3.2.1.5 Setting-up of public mutual fund for residual risks	The Stage at which developing and enacting regulatory framework for Public Mutual Fund for risk reduction in agriculture is: - Stage 1 : Analysed - Stage 2 : Drafted proposal and presented for public/ stakeholder consultation - Stage 3 : Presented for legislation - Stage 4 : Passed/approved - Stage 5 : Implementation has begun - Stage 6 : Monitoring of implementation is on-going		1,020,000	MoF, MoFA BOG, GIRSAL, Fis, Commodity Assoc. FBOs
		3.2.2 Agricultural finance and credit facilities	3.2.2.1 Promoting agency banking. Subsidising interest rates to facilitate access to credit 3.2.2.3 Promoting adjusted requirements for small loans	Number of MSMEs receiving project assistance to access bank loans Number of new bank accounts with agency banks in rural areas Level of interest rate subsidy for agricultural credit Value of Agricultural and Rural Loans to micro and small enterprises		66,200 92,820,000 2,640,500	MoFA MoF, MoFA MoF, MoFA BOG, GIRSAL, Fis, CSOs, BOG, Fis, Commodity Assoc. FBOs

Thematic Area: Agriculture and Rural Development						
Adopted MDA Goal (s): Transforming agriculture and industry						
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline	Total Indicative Budget (GH¢)
				Implementing Agencies		
				Lead	Collaborating	
			3.2.2.4 Providing support to farmers through financial institutions that manage public resources for agricultural purposes	Number of farmers receiving programme assistance to access bank loans	MoFA, MoF	BOG, GIRSAL, Fls, Commodity Assoc. FBOs
		3.2.3 Capital market instruments for agriculture		Number of firms accessing capital market instruments for agriculture		
		3.2.3.1 Creation of a capital market for the agricultural sector		Creation of a capital market instrument for agriculture has evolved to one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun - Stage 6: Monitoring of implementation is on-going	Fls, MoF	BOG, MoFA, GIRSAL, Fls, Commodity Assoc.
		3.2.3.2 Instituting relevant capital market instruments for agriculture.		Percent of budget for creating and growing capital market instruments for agriculture approved and disbursed	MoF, MoFA	BOG, GIRSAL, Fls, Commodity Assoc. FBOs
						190,000

Table 5.2 D: Programme of Action (POA) for Programme 4 – Sustainable Management of Land and Environment

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline 2017	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
Programme 4: Sustainable Management of Land and Environment						936,225,064.00		
	4.1: Conservation of natural resources			Percent of farmers adopting sustainable land and water management practices	12%	21,348,600.00		
		4.1.1 Conservation Agriculture		Number of farmers rewarded for conservation of natural resources		21,348,600.00		
			4.1.1.1 Conservation of natural resources management schemes	Number of farmers participating in Government supported natural resource management schemes		6,961,500.00	MoFA – DCS,	EPA, MESTI, CSIR, MLNR
			4.1.1.2 Promoting the protecting, conservation and sustainable use of biologically diverse ecosystems and habitats	<ol style="list-style-type: none"> 1. Hectares of demonstrations of conservation farming 2. Number of PPPs subjected to Environmental Impact Assessment (EIA) 3. Number of PPPs that report annually on recommendations of EIA 		4,641,000.00	MoFA – DCS, VSD, PPRSD	EPA, MESTI, CSIR, MLNR

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline 2017	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
			4.1.1.3 Promoting the conservation and sustainable management of forestry resources	Reforms to the policy, legal and regulatory framework for managing forestry resources is at one of the following stages: - Stage 1: Analysed - Stage 2: Drafted proposal and presented for public/stakeholder consultation - Stage 3: Presented for legislation - Stage 4: Passed/approved - Stage 5: Implementation has begun		5,569,200.00	MLNR	EPA, MESTI, CSIR, MLNR, MoFA
			4.1.1.4 Promoting land banking along with secured land tenure	Area (hectares) entered in the Land Bank		4,176,900.00	MLNR	EPA, MESTI, CSIR, MLNR, MoFA
	4.2: Climate change mitigation and resilience scheme			% implementation of Climate-Smart Action Plan		914,876,464		
		4.2.1 Climate change mitigation and resilience scheme		Number of stakeholders using climate information in their decision making as a result of programme assistance		906,767,283.40		
			4.2.1.1 – Climate change mitigation and adaptation schemes	No of farmers participating in Climate Change mitigation and adaptation schemes		291,269,160.00	MoFA – DCS,	EPA, MESTI, CSIR, MLNR

Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline 2017	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
			4.2.1.2 – Climate change resilience schemes	Number of project beneficiaries trained on climate resilience		1,021,020.00	MoFA – DCS,	EPA, MESTI, CSIR, MLNR
			4.2.1.3 Promoting the reduction of deforestation and adopting afforestation measures	1. Hectares of land afforested as a result of programme/project assistance. 2. Value of investments for promoting the reduction of deforestation and adoption of afforestation		50,122,800.00	MLNR	EPA, MESTI, CSIR, MoFA
			4.2.1.4 Promoting research, and knowledge dissemination on climate change mitigation and adaption schemes	1. Number of climate change adaptation schemes in one of the following phases of adaptation: - Phase I: under research - Phase II: under field testing - Phase III: Disseminated to producers 2. Percent of budget for knowledge dissemination on climate change mitigation and adaption schemes approved and disbursed		544,843,539.40	CSIR	EPA, MESTI, MLNR, MoFA



Thematic Area: Agriculture and Rural Development								
Adopted MDA Goal (s): Transforming agriculture and industry								
Programme	Sub-Programme	Investment Area	Policy Tools	Indicators	Baseline 2017	Total Indicative Budget (GH¢)	Implementing Agencies	
							Lead	Collaborating
			4.2.1.5 – Promoting green/growth agriculture concepts and principles.	Number of promotional products disseminated for the promotion of green agriculture concepts		19,510,764.00	MoFA	EPA, MLNR,
		4.2.2 Renewable energy and energy efficiency measures		Number of programme/project beneficiary farmers that received rewards for production and use of renewable energy sources		8,109,180.60		
			4.2.2.1 Promoting the use of energy generated from natural sources	Percent of budget for implementing renewable energy and energy efficiency measures approved and disbursed		8,109,180.60	MoE	MoFA, GIDA



Fresh Tomatoes

Chapter Six: Implementation, Monitoring and Evaluation

Performance monitoring and evaluation of the investment plan contribute significantly to effectiveness, accountability, transparency, and learning of lessons in programme implementation. Provision of accurate, adequate and timely information on activities is critical in measuring the achievement of desired objectives. This Chapter presents the framework for the M&E plan. An elaborate M&E plan is to be prepared for the planned period. It will follow the Programme of Action and Projections presented in Chapter Five. The Chapter also discusses: Data collection, analysis and usage; Reporting; Dissemination and Communication strategy; and the evaluation plan for this medium term investment plan.

6.1 Implementation Arrangements of IFJ

6.1.1 Institutional arrangements

6.1.1.1 The Role of Other MDAs

280. Ghana's Parliament and other Ministries, Departments and Agencies (MDAs) will play critical roles in ensuring smooth implementation of the IFJ. Parliament will enforce the principle of allocating and approving public resources to implementing policy tools that are effective for the transformation of the agriculture and food system. The Parliamentary Select Committee on Agriculture will be active in approving and ensuring that the sectors allocated budget for the period of the IFJ is judiciously utilised to achieve the desired outcomes.
281. The Ministry of Finance will ensure that adequate resources are allocated to implement the policy tools that are effective for the transformation of the agriculture and food system. This will be done by scrutinising the cause to effect link between specific policy tools and results.
282. The Ministry of Local Government and Rural Development (MLGRD), Ministry of Trade and Industry (MOTI), Ministry of Environment and Science and Technology (MEST), Ministry of Health (MOH) and other relevant MDAs will be actively involved at all the decentralised levels in the implementation of the IFJ. The Development

Partners (DPs), Civil Society Organisations (CSOs), Non-Governmental Organisations (NGOs) and the Private Sector will all be actively involved in the implementation of the IFJ.

6.1.1.2 IFJ Steering Committee

283. The Steering Committee that had oversight responsibility for implementation of METASIP I and II will be reviewed and restructured for IFJ and will comprise representatives of all sector stakeholders (public and private). Its role will be to examine and approve periodic reports as well as the annual plan and budget before its transmission to Ministry of Finance and Parliament. The Steering Committee will focus on assessing the performance of the sector and the contributions by each partner, as well as the cause to effect link between policy tools and results.

6.1.1.3 Coordination

284. The Ministry of Food and Agriculture as the lead implementing agency will have the oversight responsibility and will play the lead role in the overall coordination of the sector. This will be done in collaboration with stakeholders such as MDAs, DPs and the Private sector, CSOs, etc. For that purpose, the Ministry will be equipped with an Accountability System that empowers Government to enhance its effectiveness in coordinating delivery of required enabling services to the private sector (farmers and firms). MoFA will sign implementation agreement (market contracts, Memorandum of Understanding, etc.) with public and private implementing agencies.
285. MoFA will collaborate with the Private Enterprise Federation (PEF) in ensuring the following: (i) implement the public sector window of the Ghana Rural Infrastructure Development Fund; (ii) coordinate activities with regards to enhancing the capacity of the public sector to deliver enabling results; (iii) support the setting-up of the ACSEs, Market Hub Enterprises and Industry Association; (iv) develop close collaboration with other MDAs on decision making with regard to

macro-economic, trade related, import and export, taxation and other policies; (v) the monitoring of commodity value chains; (vi) the management of the sector information system; and (vii) the compliance check of all interventions to the policy orientations.

6.1.1.4 Implementation Agencies

286. The IFJ will be implemented by a wide range of stakeholder institutions including MDAs (national level), RCCs (regional), MMDAs (district), private sector, civil society organisations and development partners across the sector. For each Policy Tool, a lead and collaborating responsible institutions for implementing the Policy Tool is indicated in Tables 5.1A, 5.1B, 5.1C and 5.1D. The District Assemblies under the MLGRDL will be in charge of delivery of extension services and other public goods at the local level.
287. The implementation of the Ghana Agri-food-systems Development Fund (GADF) will be entrusted to the AFIA that will be responsible for its management and disbursement. As such AFIA will be in charge of fully or partially implementing some of the policy tools. MoFA in collaboration with other sector stakeholders will keep AFIA accountable.

6.1.1.5 Accountability mechanisms

6.1.1.5.1 Harmonisation and alignment of interventions

288. The IFJ strategic framework empowers the Government to harmonize and align Government and Donor interventions. There is the need to bring all stakeholders on board the implementation of the IFJ to ensure synergy in activity implementation to avoid duplication and waste of resources.
289. All ongoing interventions will be mapped with one or more programmes and intervention areas. The policy tool being implemented, the financial contribution to the policy tool and targets to be accounted for will be spelt out clearly. New Government and donor financed operations will be linked to the intervention within the IFJ framework. Government's approval will be granted only if compliance check yields a positive outcome.

6.1.2 Monitoring Matrix

290. The monitoring matrix presents a framework for developing a detailed programme monitoring and evaluation plan. This Performance Measurement

Framework (PMF) or the result matrix or monitoring matrix provides the complete list of performance indicators. Information provided on each indicator will include: (i) the clear description of the indicators and its definition to eliminate possible ambiguity in data interpretation; (ii) primary source(s) of the data; (iii) the frequency with which data will be collected; (iv) levels of disaggregation; and (v) assumptions about each indicator. It also includes the baseline data and targets. Details of the PMF can be found in the IFJ M&E plan.

291. Sources of both primary and secondary data will be required for monitoring and evaluating the performance of IFJ implementation. Sources for primary data will include public and private entities that have management responsibilities for some components of IFJ. This includes but not limited to all operating units of MoFA, its projects and other implementing agencies. Other stakeholders such as other agriculture related MDAs, Private Sector Organisations, International Development Agencies, Research Institutions, and Producer/Input Associations, will be contacted for secondary data.
292. The disaggregation of key data types presents opportunities for better analysis. Data will be disaggregated in numerous ways, including gender, age, location, target organisation, in order to determine how the IFJ programmes affect different cohorts. Disaggregated data will help track whether or not specific groups participate in and benefit from activities and how the implementation of the plan impacted the beneficiaries differently. Targets are derived through objective procedures that ensure that they are realistic, attainable and better than what was achieved in the past. One must exhibit knowledge about resources to be employed and make judgment for targets based on those resources.

6.1.3 Data Collection, Analysis and Usage

293. The data collection strategy will employ the use of the Computer Assisted Personal Interview (CAPI) into a web-based data collection system in addition to paper-based interviews. Data will be collected, validated and verified at the district, regional and national levels. Templates for reporting data will be provided to implementing agencies at all the implementation levels. The

web-based application will be used for data entry, storage and reporting, while varying levels of access will be provided for use at District, Regional, National and Project levels. Training on the use of the web-based system will be provided prior to its engagement. In addition, a user manual will be provided for users' referencing. Data analysis will be carried out after data collection and collation are completed. A documentation of the procedures for data analysis, review and reporting for each indicator will be done. Data collection template can also be found in the IFJ M&E Plan.

6.1.4 Plans for Data Quality Assessment

294. As the implementation of the IFJ gets underway and data is collected, analysed and reported, it will be assessed for validity, reliability, precision, accessibility, methodological soundness, timeliness and assurance of integrity. The PPMED will schedule data quality assessments within each year to enhance the quality of data for reporting. The period for the actual assessment will be recorded as part of updates to the M&E Plan. Procedures for assessing the quality of data collected for the indicators will be documented to ensure consistency each time it is done, even if assessment is performed by different persons.

6.2 Reporting

295. As per Government of Ghana regulations, all entities are required to prepare periodic progress reports. This is an approach to enable the Government keep all implementing partners accountable. The M&E plan of IFJ will clarify the obligations for each partner with regard to reporting against its results framework: (i) periodicity; (ii) content; (iii) format; and (iv) audience. Every partner will report on the extent of implementation of activities in their respective work plans, expenditure, level of target achievement and outputs or outcomes generated.

296. The District Agriculture Departments (DADs) will submit quarterly and annual reports to the Regional Agriculture Departments (RADs). The RADs will collate the DADs quarterly and annual reports and in turn forward same to the PPMED of MoFA via the Chief Director. Similarly, National Directorates of MoFA and Projects and Programmes being managed by MoFA will send quarterly and annual reports to PPMED for collation.

297. The PPMED will prepare quarterly and Annual Progress Reports of the sector for submission to the Office of Head of Civil Service, National Development Planning Commission, Ministry of M&E, IFJ Steering Committee, among others, through the Chief Director. Copies of the report will also be shared with MDAs, Research Institutions, CSOs, including all implementing partners. A copy will also be placed on the MoFA website.

298. The reports will also be shared with stakeholders at a number of platforms. These platforms include; Joint Sector Review, the Agriculture Sector Working Group (AgSWG), the IFJ steering committee, Meet the Press, National Directors meetings and Performance Review Sessions with implementing partners. These platforms have diverse stakeholders in agriculture and it also serves as mutual accountability platforms.

6.3 Dissemination and Communication Strategy

299. Dissemination and Communication of information is an essential tool in the implementation of a sector plan. Stakeholders should be well informed about how the plan will be implemented. This is very critical in ensuring that real time information is available to all stakeholders to enable effective implementation of the plan. A communication strategy will thus be developed for the IFJ to facilitate information sharing among stakeholders.

6.3.1 Communication Strategy

300. The IFJ communication strategy will create awareness and good understanding among all stakeholders on details of the plan. It will enable stakeholders have knowledge about the programmes, sub-programmes, intervention areas and policy tools that are proposed to be implemented during the period 2018-2021.

301. The Communication strategy will enable us achieve the following objectives: (i) To communicate effectively the Vision, Mission, Goal and Objectives of the agricultural sector as outlined in this plan; (ii) To promote appreciation of the need for a coordinated approach to the implementation of agricultural development interventions by sustaining stakeholder participation, consultation, support, and collaboration in the implementation of this plan; (iii) To promote coordination among stakeholders, including national and international

partners; (iv) To ensure consistency of messages in the sector; (v) To identify, develop and utilize appropriate communication channels, tools and activities to implement this plan; and (vi) To disseminate achievements and progress to the general public and the world at large (see Table 6.1).

Table 6.1: Summary of Communication Activity Matrix

Activity	Purpose	Audience	Methods/Tolls of communication	Timeframe	Responsibility
Meet with Heads of MDAs including MoFA Staff at all levels	<ol style="list-style-type: none"> Obtain political commitment and top management support. Create an enabling environment for all staff members to be actively be involved in plan implementation. Ensure deep understanding of the plan and how it will be implemented. 	Ministers, Deputy Ministers, Chief Directors, Directors, Deputy Directors, Heads of Departments, Divisions and units and staff of MoFA and agricultural related MDAs	<ul style="list-style-type: none"> Seminars Policy Fora Workshops Consultations Face-to-face discussions Policy briefs Brochures Stakeholder platforms 	Quarterly, Annually	PPMED
Meet with Parliamentarians	<ol style="list-style-type: none"> Obtain political commitment and goodwill. Create an atmosphere for continuous dialogue with the legislature. Advocate for adequate resource allocation. 	<ul style="list-style-type: none"> Members of Parliament and Members of relevant Select Committees 	<ul style="list-style-type: none"> Seminars Policy Fora Workshops Consultations Face-to-face discussions Policy briefs Brochures 	October to December annually	PPMED
Meet with MLGRD at all the Decentralized levels	<ol style="list-style-type: none"> Obtain political commitment at lower levels. Create an understanding of the plan at the implementing levels. Create a sense of ownership of development programmes and projects that come with the plan. Impart knowledge and skills to implementing agencies at the regional and district levels. 	Regional Ministers, Chief Executives and all relevant staff members of Regional Coordinating Councils and Metropolitan, Municipal and District Assemblies.	<ul style="list-style-type: none"> Seminars Policy Fora Workshops Consultations Face-to-face discussions Durbars Policy briefs Information brochures 	Quarterly, Annually	PPMED

Activity	Purpose	Audience	Methods/Tolls of communication	Timeframe	Responsibility
To meet with Sub-District Council level officials	<ol style="list-style-type: none"> 1. Create sense of ownership of development interventions. 2. Create a participatory learning culture. 3. Build strong bridges among stakeholders 	<p>Traditional Authorities, Opinion leaders, Councillors, etc.</p>	<p>Training workshops</p> <p>Follow-ups</p> <p>Community durbars</p> <p>Consultations</p>	<p>Quarterly and Annually</p>	PPMED
Meet with FBOs private sector actors and CSOs	<ol style="list-style-type: none"> 1. Create sense of ownership of development interventions. 2. Create a participatory learning culture. 3. Build strong bridges between MoFA and other stakeholders. 4. Advocate for strong private sector investment in the sector. 5. Advocate for coherence in the operations of CSOs in the sector. 	<p>Farmers, aggregators, processors, NGOs, marketers, consumers, financial institutions, input dealers etc.</p>	<p>Training Workshops</p> <p>Follow-ups</p> <p>Community durbars</p> <p>Consultations</p> <p>Policy briefs</p> <p>Brochures</p> <p>Investment briefs</p>	<p>Quarterly and Annually</p>	PPMED /DAES
Meet with researchers	<ol style="list-style-type: none"> 1. Provide demand-driven research information. 2. Provide knowledge and databases. 3. Provide training support and feedback 4. Advocate for action research that involves the participation of the people. 	<p>Agricultural researchers and academia</p>	<p>Seminars</p> <p>Policy Fora</p> <p>Workshops</p> <p>Consultations</p> <p>Face-to-face discussions</p> <p>Website</p>	<p>Quarterly, Annually</p>	PPMED/DAES

Activity	Purpose	Audience	Methods/Tolls of communication	Timeframe	Responsibility
Meet with Development Partners	1. Provide information on developments and progress towards objectives. 2. Advocate and lobby for financing support.	Development Partners (national, regional and global levels)	Workshops Consultations Face-to-face discussions Policy briefs Brochures Investment briefs Websites Stakeholder platforms	Quarterly, Annually	PPMED

6.4 Evaluation Plan

302. This evaluation plan seeks to pre-empt potential challenges for programme evaluation when adequate provision is not made for evaluation during the planning stage. It is good practice to develop an evaluation plan well in advance because it: (i) helps in deciding what information is needed to address the evaluation objectives; (ii) helps in identifying methods for getting the needed information; (iii) helps in identifying potential issues and think through strategies to overcome the challenges; and (iv) helps to determine a realistic timeline for the evaluation. Refer to the IFJ M&E plan for detailed Evaluation Matrix covering summary of evaluation questions, data needed, sources and their methods.

6.4.1 Programme Reviews

303. IFJ is aligned to Ghana's CAADP commitment, thus, yearly and biennial reviews will be integrated with the Joint Sector Review process. To enable productive scrutiny and discussion of the IFJ, adequate preparation and reporting will be completed well in advance of the annual Joint Sector Review. Thus, adherence to reporting deadlines will be the norm for IFJ implementation.

6.4.2 Mid-term Evaluation

304. A Mid-term evaluation will be carried out at the beginning of 2020 with an objective to investigate progress made towards: a) planned activities; and b) objectives of IFJ. The following evaluation questions will guide the assessment of planned activities:

- Are activities being performed as planned?
- Are resources adequately mobilised and disbursed?
- Are resources being applied efficiently and for the intended purposes?
- Is the project reaching the target population?
- To what extent has programme implementation been aligned to the sub-regional and national development objectives?

305. Producing evidence to respond to these questions will require tracking implementation of programmed activities by reviewing work plans and progress reports. The focus of this investigation will be on output data that can be obtained from the monitoring system because adequate provision has been made. A number of the indicators for the sub-intermediate results can provide evidence in support of decision to be made. These include:

- To what extent did beneficiaries experience changes in their operations?
- To what extent were opportunities created for youth employment as a result of IFJ implementation?
- To what extent were participants satisfied with their involvement in IFJ implementation?

306. Data collection and analyses approaches will be limited to rapid appraisal techniques and drawn on data from the monitoring system to a large extent. In preparation to answer these questions PPMED will select seven (7) policy tools which are critical to the successful attainment of IFJ objectives and track at least one indicator for each policy tool. A policy tool will be drawn from each of the programme areas. These will be useful for illustrating the alignment of goal, objective and activity.

6.4.3 End of Programme Evaluation

307. Obtaining end of programme data for some performance indicators, especially those pertaining to productivity and competitiveness might require a survey. The cost associated with surveys – even the mini-survey - can be substantial and therefore, it will be estimated for inclusion in the programme's budget in order to avoid surprises when the survey is due.

308. The objectives of the end of program evaluation will be as follows:

- a) Assess the implementation of the programme with an intention to document lessons learned as input for follow-on programmes; and
- b) Investigate the extent to which programme objectives have been achieved.

309. Specific questions that will provide guidance for the end of programme evaluation will include but not limited to the following:

6.4.4 Participatory M&E

310. In the implementation of the IFJ, a participatory M&E approach will be used by deploying all the knowledge and resources of a wide range of stakeholders including relevant MDAs, private sector, CSOs, etc. Detailed PM&E approaches can be found in the IFJ M&E plan.

Notes

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