Ministry of Food and Agriculture



Republic of Ghana

Food and Agriculture Sector Development Policy (FASDEP)

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P.O. Box M 37
Accra

Ghana

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List of abbreviations:

AAGDS	Accelerated Agricultural Growth and Development Strategy
ACP	Africa, Caribbean, Pacific
ADF	Agriculture Development Fund
AESD	Agricultural Engineering Services Directorate
AFD	Agence Française de Dévelopement
AfDB	African Development Bank
AGOA	African Growth Opportunity Act
AgSSIP	Agricultural Services Sub-Sector Investment Programme
APD	Animal Production Directorate
APDF	African Project Development Facility
BoG	Bank of Ghana
CIDA	Canadian International Development Agency
CSIR	Council for Scientific and Industrial Research
DAES	Directorate of Agricultural Extension Services
DFID	Department for International Development (of United Kingdom)
DSC	Directorate of Crops Services
DoF	Directorate of Fisheries Services
EPA	Economic Partnership Agreement
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FASDEP	Food and Agriculture Sector Development Policy
FBO	Farmer-Based Organisation
GDP	Gross Domestic Product
GLDB	Grains and Legumes Development Board
GOG	Government of Ghana
GPRS	Ghana Poverty Reduction Strategy
GRATIS	Ghana Regional Appropriate Technology Information Service
GSB	Ghana Standards Board
GTZ	German Agency for Technical Cooperation
HRDM	Human Resource Development and Management
ICP	Integrated Crop Protection
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
ITTU	Intermediate Technology Transfer Unit
JICA	Japan International Cooperation Agency
KFW	German Bank for Reconstruction
KNUST	Kwame Nkrumah University of Science and Technology
LACOSREP	Land Conservation and Smallholder Rehabilitation Project
LSDP	Livestock Development Project
LWO	Licence Warehouse Operators
M&E	Monitoring and Evaluation
MDA	Ministry, Department and Agency
MEPRC	Ministry of Economic Planning and Regional Cooperation
MoE	Ministry of Education
MOFA	Ministry of Food and Agriculture
MOH	Ministry of Health
MOTI	Ministry of Trade and Industry
MOWCA	Ministry of Women and Children's Affairs
MTADP	Medium Term Agricultural Development Program
MTEF	Medium Term Expenditure Framework
NAC	National Advisory Committee
NATC	National Agricultural Technical Committee
NGO	Non-Governmental Organisation
NIS	National Implementation Strategy
NSBS	National Strategic Buffer Stock

PPMED	Policy Planning, Monitoring and Evaluation Directorate
PPRSD	Plant Protection and Regulatory Services Directorate
RELC	Research Extension Liaison Committee
SME	Small-Medium Scale Enterprise
SMS	Subject Matter Specialist
SRDP	Smallholder Rehabilitation and Development Project
SRID	Statistics, Research and Information Directorate
U.S.	United States
UEMOA	West African Economic and Monetary Union
VSD	Veterinary Services Directorate
WIAD	Women in Agricultural Development
WTO	World Trade Organisation

FOREWORD

On behalf of His Excellency J.A. Kufuor, President of the Republic of Ghana, and the people of Ghana, and on behalf of the Ministry of Food and Agriculture (MOFA), I wish to thank the special committee set up to draft the Food and Agriculture Sector Development Policy (FASDEP). I also extend my sincere gratitude to our development partners and all individuals who made various contributions to enrich the document.

The development of FASDEP was necessitated by the urgent need to modernise the agriculture sector in fulfilment of the President's vision of Ghana becoming a leading agro-industrial country in Africa by the year 2010. The ideas captured in FASDEP will enable the sector to adapt to rapid structural changes in the domestic as well as the world economy, to help increase its contribution to the overall development and growth of the national economy.

Building on the Accelerated Agricultural Development Strategy (AAGDS) prepared in 1996, FASDEP brings out the linkages among production, storage processing, preservation, packaging and marketing, as well as linkages among the various sub-sectors in agriculture and other non-agriculture sectors. It identifies the roles of other Ministries, Departments and Agencies (MDAs) in this process, and brings into sharper focus the role of the private sector as the main driving force.

FASDEP emphasises the optimum and sustainable utilisation of all resources and commercialisation of the sector with market-driven growth in mind. The document further outlines the challenges as well as the numerous opportunities in the agriculture sector and the potential roles each stakeholder should play, from production through all forms of value addition at various stages to marketing.

It is my fervent hope that with effective cooperation, coordination, and commitment of all stakeholders (private sector, including farmers' and fishermen's organisations, the public sector, and civil society) and the implementation of the proposed policies and programmes, we can overcome the challenges facing the agriculture sector with a view to increasing its growth thereby creating employment, increasing income, reducing poverty and achieving food security for our people.



MAJOR COURAGE QUASHIGAH (RTD)
HON. MINISTER OF FOOD AND AGRICULTURE

1 INTRODUCTION

1.1 Background

The main goal of the Ministry of Food and Agriculture (MOFA) is to create an environment for sustainable growth and development in the Agricultural Sector that would ensure:

- Food and raw material security,
- Higher employment,
- Reduction in poverty and the creation of wealth, and
- Greater contribution of the sector to GDP, foreign exchange earnings and government revenue.

To be able to achieve this goal, a number of policies and programmes have been formulated. During the 1990s, government policies and programmes for agricultural development, which were guided by the Medium Term Agricultural Development Programme (MTADP), provided the framework for the allocation of public and private sector resources. The main thrust was institutional reforms in the agricultural sector aimed at helping to realise Ghana's agricultural potential. Significant improvements were made but growth was rather slow.

Following the MTADP, the Ministry of Food and Agriculture (MOFA) formulated the Accelerated Agricultural Growth and Development Strategy (AAGDS) with the objective of accelerating agricultural growth to 6% of GDP to enable it contribute to the envisaged economic growth that will make Ghana a middle income country. The AAGDS had five key elements as follows:

1. Promotion of selected products through improved access to markets,
2. Development of, and improved access to, technology for sustainable natural resource management,
3. Improved access to agricultural financial services,
4. Improved infrastructure, and
5. Enhanced human resource and institutional capacity.

The AAGDS outlined strategies to transform the agricultural sector through the formulation and implementation of policies and programmes. The first of these was the Agricultural Services Sub-sector Investment Programme (AgSSIP), which addresses elements 1, 2 and 5 above. The other elements, improved rural infrastructure and improved access to agricultural financial services, are partly addressed by the Village Infrastructure and Rural Financial Services Projects. The proposed Agricultural Development Fund (ADF) could complement these two facilities.

The need however to have a development policy for the food and agricultural sector that is holistic in approach, taking cognisance of all on-going efforts in the agricultural sector, is imperative. The Food and Agricultural Sector Development Policy (FASDEP), is MOFA's response to providing such a holistic policy framework. It builds on the five key elements of the AAGDS with a focus on strengthening the private sector as the engine of growth. FASDEP adopts the sector-wide approach to managing agricultural development as opposed to the discrete project approach pursued in the past. It is the strategic framework within which all on-going and future programmes and projects will operate. It provides a broad framework for agricultural development out of which detailed projects and programme implementation plans and activities will be developed to deal with specific issues.

Currently, donor agencies impose conditions for support and retain their own procurement and disbursement procedures. Under FASDEP, efforts will be made to bring all donor-funded projects within a co-ordinated framework to avoid duplication and waste. Procurement and disbursement and reporting procedures will be harmonised as much as possible. Whatever the goodwill of donors, external funding has never been adequate and is likely to dwindle in future. Therefore, the strategy is to effectively and efficiently utilise available resources in the short to medium terms while promoting substantial investment and technological resources within the private sector.

This policy recognises access to markets as a major key to success. In the short term, government will facilitate improved marketing through improved infrastructure such as roads, markets and storage facilities. To support commodity prices from collapse, and encourage productivity and production, government will establish a strategic buffer stock. Apart from ensuring competitive pricing, this will create conditions for sustained markets for producers.

1.2 Linkage with Ghana Poverty Reduction Strategy (GPRS)

Ghana cannot achieve its planned economic growth and poverty reduction without significant improvement in the performance of the agriculture sector. The FASDEP provides a framework for modernising the agricultural sector and making it the catalyst for rural transformation. FASDEP, therefore, articulates the contribution that the Ministry of Food and Agriculture makes towards the overall objective of the Government of Ghana to achieve equitable growth and poverty reduction.

The Ghana Poverty Reduction Strategy (GPRS) discusses the poverty profile dimension in Ghana and outlines programmes of MDAs and private sector needs to be implemented to achieve poverty reduction. The strategy on production and gainful employment to which agriculture is key seeks among other things to improve public sector delivery of programmes and also provide sufficient incentives to stimulate the private sector. The activities are aimed at increasing and sustaining production for local consumption and export, and expanding employment especially in geographical areas that have high poverty profiles.

Specific interventions in the agricultural sector for reducing poverty as outlined in the GPRS and equally supported by FASDEP are:

a) **Infrastructural development**: this involves greater investment in rural infrastructure and the empowerment of rural people to maintain such facilities.[1] The Ministry will collaborate with other MDAs to select priority feeder roads, bridges, farm tracks, trails, and irrigation, storage and marketing facilities for construction. The Ministry's objective is to link remote rural areas with high production levels to agricultural markets thus providing enhanced marketing opportunities for increasing incomes.

b) **Appropriate technology:** Research, development and dissemination of appropriate technology focuses on increasing productivity, profitability, reduction of production risks, adoption by farmers and consumers, and supporting value addition to production. Special attention will be paid to the processing, packaging, marketing and presentation of agricultural products.[2]

[1] see also section 3.4 below
[2] see also section 3.3 below

c) **Extension:** MOFA will continue to improve the efficiency, efficacy and relevance of it's extension system.[3] The public extension system will initiate pro-poor extension programs in targeted areas and for specific groups of the population who have been identified to be more prone to poverty. As outlined in the Ministry's Agricultural Extension Policy document, the approach to extension will include empowering farmers through the promotion of producer organizations thus creating further opportunities for strengthening the voice of farmers. The extension system will determine the proportions of cost contribution by farmers depending on type and size of enterprise.

1.3 Factors Militating Against the Growth of the Agricultural Sector

A critical review of the poor performance of the agricultural sector has revealed that a myriad of problems militate against the growth of the sector. These problems include:

Policy

- Vaguely defined mission and functions of MOFA,
- Difficulty in acquiring agricultural land,
- Absence of land use policy,
- Inadequate investment by government in agriculture,
- Over-reliance on donor funding with its stringent conditions and procedures,
- Un-co-ordinated donor funded projects and NGO activities across the country with different implementation policies,
- Ineffective monitoring of on-going projects, poor evaluation of completed projects and non-utilisation of lessons and experiences,
- Unfair domestic and international trade policies,
- Weak enforcement of fisheries laws; and
- Poor dissemination of information on trade agreements and protocols.
- Poorly co-ordinated agricultural and trade policies;

Institutional

- Weak producer organizations,
- Limited monitoring, control and surveillance of fisheries resources,
- Inadequate agricultural extension staff,
- High attrition rate of trained staff,
- Weak research-extension-farmer linkage,
- Lack of reliable statistical data for decision-making,
- Weak enforcement of laws,
- Inefficient marketing systems,
- Weak market-processor-farmer linkage,
- Weak agri-business system,
- Slow progress in decentralisation; and
- Poorly motivated public service.

[3] see also section 3.3 below

Infrastructure

- Poor access to production areas,
- Inadequate haulage vehicles,
- Unhygienic marketing centres,
- Inadequate processing facilities,
- Inadequate and inappropriate storage facilities,
- Poor, unattractive and unhygienic packaging,
- Limited irrigation facilities; and
- Inadequate energy supply and distribution.

Financial

- High cost of inputs relative to output prices,
- High interest rates and transaction costs on credit,
- Non-availability of medium and long-term capital,
- Low investment in agro-processing,
- Lack of innovative financial packages favouring agriculture; and
- Unfavourable timing of credit disbursement.

Social

- Aging farmers,
- Low interest of youth in agriculture,
- High rural-urban migration; and
- High rate of illiteracy among farmers and fishermen.

Weather/environmental

- Over-reliance on rainfall,
- Poor preparedness against outbreaks of pests and diseases,
- Seasonal destruction of range land by bush-fires,
- Poor management of natural resources,
- Encroachment on farmland by mining and estate developers; and
- Destruction of farmland by mining operations.

Technological

- Slow pace of appropriate technology development,
- Over-reliance on importation of machinery, spares, and other inputs; and
- Poor communication.

The challenge to the agricultural sector is to develop appropriate policies, strategies, and programmes to address the above problems.

2 MOFA'S MISSION AND OBJECTIVES

2.1 Mission Statement

MoFA's mission is to promote sustainable agriculture and thriving agribusiness through research and technology development, effective extension and other support services to farmers, fisherman, processors, and traders for improved human livelihood.

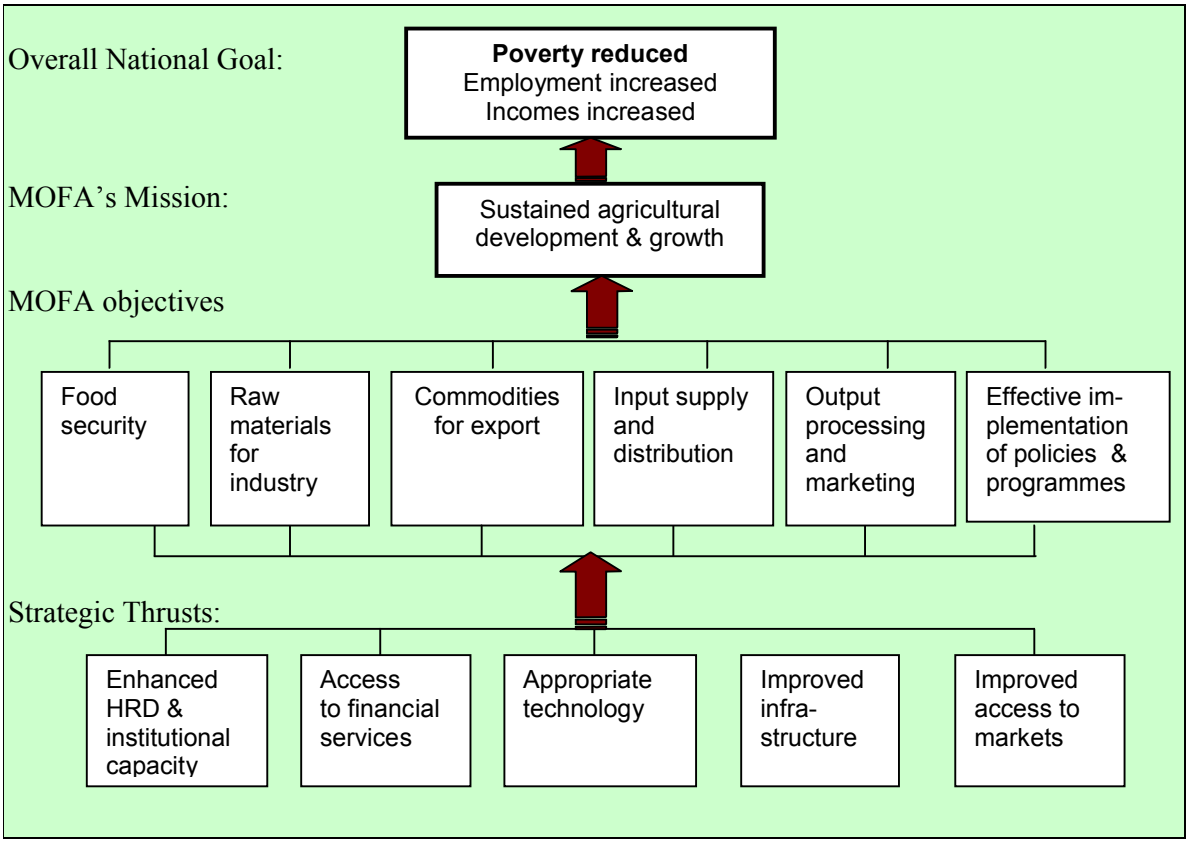
2.2 Objectives of MOFA

To accomplish it's mission, MoFA will pursue the following objectives:

1. Ensure food security,
2. Facilitate the production of agricultural raw materials for industry,
3. Facilitate the production of agricultural commodities for export,
4. Facilitate effective and efficient input supply and distribution systems,
5. Facilitate effective and efficient output processing and marketing system; and
6. Formulate and co-ordinate the implementation of policies and programmes for the food and agricultural sector.

These objectives are to be achieved by a combination of appropriate policies and programmes. The conceptual framework of the relationship between MOFA's mission, objectives, and the strategic thrust through which the objectives will be achieved is presented in Figure 2.1.

Figure 2-1 Framework of MOFA's Mission and Objectives



The following sections elaborate MOFA's objectives in further detail. How MOFA attempts to achieve these objectives is outlined below in chapter 3.

2.2.1 Ensuring Food Security

There are several definitions of food security. In 1986, the World Bank came out with a definition that gained considerable acceptance. The Bank defined food security as "access by all people at all times to enough food for an active and healthy life".

In 1996, the World Food Summit in Rome agreed that "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". Both definitions encompass many issues. They deal with production and distribution in relation to food availability, they cover consumption in the sense that individual food needs (and preferences) are met either through own production or purchases and they address safety and nutrition so that health and physiological needs will be satisfied for an active life.

MOFA however defines food security as:

> *"Good quality nutritious food, hygienically packaged and attractively presented, available in sufficient quantities all year round and located at the appropriate places at affordable prices."*

This definition makes it easy for the state of food security to be measured and assessed from time to time. In all the above definitions of food security, the key elements that cut across are quality and nutrition, sufficiency and physical and financial accessibility. (*See Appendix A for further elaboration)*

Quality Nutritious Food

The quality of food is determined by the methods of production, harvesting, haulage, processing, storage, packaging and marketing. If the methods are of high standard, the quality of food is good, but if they are sub-standard, people stand the risk of eating bad food.

Food nutrients depend upon the biological characteristics of the crop, livestock or fish products. Human nutrition is improved through research and education on food utilisation.

Sufficiency

To achieve sufficiency, different varieties of food must be available at all times, including lean seasons and times of emergency. Production, haulage, processing and storage become important in this respect. When local production is not enough it should be supplemented with imports. In that case an early warning system should be in place to signal for the importation of food at the right time to forestall any shortage and calamity.

Accessibility

Food must be located within close and comfortable proximity of consumers to reduce time and money spent in travelling and bargaining, and also to provide comfort when shopping. Here, processing, storage, packaging, presentation and marketing are important factors.

Quality food packaged for convenience of families and ready for cooking.



Food must be reasonably priced so that the proportion of the average worker's earnings spent on food would leave him or her enough money to meet other needs including savings. Food prices can be low without adversely affecting farm profitability if farmer productivity increases and marketing costs fall.

Food security will be enhanced by monitoring the food supply and distribution situation and disseminating early warning signs to relevant agencies. This will allow the various partners to act collectively on information available to ensure that adequate food is available, accessible and is utilised for the benefit of the population.

2.2.2 Facilitating the Production of Agricultural Raw Materials for Industry

Production of industrial agricultural raw material must meet specifications in terms of quality and quantity. MOFA will also provide information on appropriate planting materials and varieties to be grown, the agronomic practices required, acceptable methods of harvesting and handling and appropriate storage techniques through improved extension services using publications, radio and TV discussions among others.

MOFA will provide available information on output supply, surplus areas, price trends and new products on demand for informed business decision making.

2.2.3 Facilitating the Production of Agricultural Commodities for Export

MOFA in collaboration with the Ministry of Trade will collect and disseminate information on agricultural commodities in demand in the West African sub-region and the rest of the

international market. Specific information on requirements in respect of European and U.S. markets under AGOA will be provided to promote exports.

In collaboration with various private sector commodity groups and associations, MOFA will source for planting materials for export commodities. Similarly, collaborative workshops will be held for stakeholders to help them understand the changing requirements for the export trade.

2.2.4 Facilitating Effective and Efficient Input Supply and Distribution System

The specific role of MOFA will be to monitor, regulate and disseminate essential information needed by actors in the agribusiness sector, especially the inputs trade. By monitoring agricultural input dealers, MOFA will be in a position to advise government and the private sector on the actions necessary to correct any possible supply shortfalls. The monitoring role of MOFA will also help eliminate unfair competition and behaviour in the input supply system.

Regulating the activities of input dealers will involve checking product quality and product movement in collaboration with the Ghana Standards Board to eliminate dangerous, sub-standard or banned products in order to increase user confidence and improve quality of products.

MOFA will also take the initiative to encourage private sector operators to establish input supply shops in each district and train the operators. Where the private sector fails to respond to this initiative, factors hindering the establishment of shops will be identified and addressed.

2.2.5 Facilitating Effective and Efficient Output Processing and Marketing System

Effective marketing starts with the kind of planting and breeding material used by the producer. High quality planting and breeding material, good husbandry practices, proper harvesting, slaughtering and handling methods, excellent storage, efficient technological processing and packaging, and a good transportation network all contribute to effective and efficient marketing.[4]

MOFA, in collaboration with other MDAs, will provide information on market demands and supply chain to the institutions engaged in the above processes. The media will be used to disseminate information on market variables.

In collaboration with the various trade associations and MDAs, the use of weights and measures will be re-introduced through incentives and training to promote effective and efficient marketing.

MOFA will mount trade shows and exhibitions in and outside Ghana to promote the country's fresh and processed agricultural products.

[4] Appendices B & C depict the above production, handling, processing, marketing and distribution chain.

2.2.6 Formulating and Coordinating Policies and Programmes for the Food and Agriculture Sector

To make policy formulation, implementation and co-ordination more effective, efforts will be made to research and evaluate its implications for the population, government budget and operators in the sector.

Once the policy is accepted and implemented, MOFA will set the criteria for monitoring and evaluating the impact of the policy on various identifiable groups. The results of these evaluations and the outcome of the monitoring will inform future policy research and formulation. It is anticipated that this approach will enrich our policies and enable the business community to plan effectively.

3 MOFA'S STRATEGIC THRUSTS

In line with the Accelerated Agricultural Growth and Development Strategy (AAGDS), FASDEP will seek to achieve the following:

- Enhanced human resource development and institutional capacity building,
- Improved financial services delivery,
- Development, dissemination and adoption of appropriate technology,
- Infrastructure development, and
- Promotion of selected commodities and improved access to markets.

3.1 Enhanced Human Resource Development and Institutional Capacity Building

Agricultural growth and development will depend on well trained and competent manpower both in the public and private sectors. The low level of education, especially among the rural population has contributed to low levels of technology adoption. There is the need therefore to develop the requisite capacity at all levels to move the sector forward. FASDEP will address both the human capacity issues and institutional bottlenecks.

Operators in the sector will be encouraged to contribute to their own social and economic development. Through the activities of both private and public sector service providers they will be assisted to access the following:

- Training and animation,
- Information (communication systems),
- Technical assistance; and
- Machinery and equipment.

Training will be at two levels. The first will be a training-of-trainers programme for frontline extension staff and other service providers. The second type of training will be a formal one, including attachments and exchange programmes for policy makers and researchers.

One problem with capacity building is high attrition of staff. Accordingly, appropriate facilities and attractive conditions of work will be put in place to motivate, retain and enhance the productivity of trained staff.

The district assemblies and other service providers will be encouraged to provide social amenities for the communities to entice people to stay in the rural areas. In the same vein, private sector operators will be encouraged to invest in rural economic ventures to promote rural economic development.

Agricultural development must be science driven. In this regard, scientists will be encouraged and challenged to produce innovative technologies, including inputs, tools, machinery etc, for the agricultural industry. As much as possible, new inventions shall be covered by intellectual property rights.

Table 3-1: Interventions in the Area of Human Resource Development and Institutional Capacity Building

Intervention	Status	Implementing Institution	Funding*	Remarks
Development of agricultural producer associations	On -going	MOFA, NGOs, District Assemblies, DOC, Ghana Co-operative Council	AgSSIP, NGOs, Others	Private sector to be sensitised
Development of agro-processing sub-sector	On -going but limited	ITTU, GRATIS, NGO's, MOFA, MOTI, CSIR, District Assemblies	Financial institutions, private sector, AgSSIP, EDIF, ADF (Proposed)	Establishment of the ADF to be given a serious thought
Development of trade associations	On-going	MOTI, MOFA, DOC, GCC, NGO's, private sector	AgSSIP, NGOs, private sector, Others	Poor co-ordination and collaboration
Training of community workers in issues relating to gender, health and the physically challenged.	On-going but limited	MOFA, NGO's, Dept. of Community Development, MOWCA, MOH, Local Government	AgSSIP, NGOs, Others	Inter-agency collaboration to be enhanced.
Strengthening of front line extension workers	On-going	MOFA, NGO's, Research Institutions, Universities	AgSSIP, NGOs, DAs, Others	
Strengthening of MOFA management level staff	On-going	MOFA	AgSSIP, Others	MOFA to collaborate with universities in modifying agricultural curricula
Strengthening of research staff	On-going	CSIR, Universities, BNARI	AgSSIP, MES, Others	
Institutional strengthening of agric. education: Universities Agric. Colleges Farm Institutes Co-op College	 On-going On-going On-going On-going	 MOE, MOFA, MOFA, DOC	 MOE, AgSSIP, AgSSIP, AgSSIP, Others	MOFA and private sector to collaborate with Universities and Co-op College in modifying agricultural curricula to reflect Agri-business
Strengthening rural banks and micro finance institutions	On-going	RFP, BOG	World Bank IFAD AfDB, Others	
Strengthening capacity of District Assemblies	On-going	MLGRD,MOFA	AgSSIP , VIP , Others	

* Funding includes Government of Ghana Funding

3.2 Financial Services Delivery



Low national savings rate deprives financial markets of funds for investments

Funding is of crucial importance for the success of this policy.

Financing of procurement and distribution of agricultural inputs, on-farm production, processing and marketing of agricultural produce is critical to accelerated agricultural growth and development. There are domestic and external sources of agricultural finance. Domestic sources are mainly the commercial banks, development banks, rural banks and credit unions. External sources of finance are mainly through projects sponsored by bilateral and multilateral agencies.

The problems identified with availability and access to financial services include:

- high interest rates and transaction costs,
- the perceived risky nature of agriculture,
- non-availability of medium and long-term credit,
- poor spatial distribution of banks,
- lack of documented assets for use as collateral,
- small-scale operations of farmers; and
- poor record keeping by farmers.

3.2.1 Sources of Finance

Domestic sources of credit are derived largely from financial institutions including the banks, savings and loans associations, credit unions, non-financial organizations such as NGOs, nucleus farm enterprises, traders, processors and solidarity groups.

Improving Access to Credit

Loans for the agricultural sector are mainly short-term. This restricts the availability of credit to activities with short-term duration. Therefore other arrangements utilizing warehouse receipts and inventory credit schemes will be actively pursued. Credit for activities with long gestation periods will be funded under the proposed Agriculture Development Fund [5]. Local banks and bilateral/multilateral donor institutions would be encouraged to create portfolios that cater for agricultural production with long gestation periods.

The poor spatial distribution of credit institutions in the country is also a constraint to accessing credit. Most banks operate only in urban areas. MOFA will liaise with the Ministry of Finance and the Bank of Ghana to address this imbalance and make banking services more accessible in rural areas.

[5] see section 3.2.3

Strengthening Rural Financial Institutions

Rural financial institutions will be strengthened to develop appropriate financial products to make credit accessible to farmers. The Rural Financial Services Project will, for instance, build capacities of rural banks to enhance effective savings mobilisation and credit delivery. MOFA in collaboration with the Bank of Ghana will train farmers in credit management to help them improve on loan repayment.

Mobilisation of Funds

Availability of credit can be increased through boosting domestic savings using innovative approaches like the Grameen bank approach or "Susu" associations. A levy on selected food imports is proposed. The proceeds will provide credit to operators in the agricultural sector.

In addition to domestic source, the agricultural sector will continue to rely on external funds, i.e. loans and grants in the short to medium term, for development.

3.2.2 Specialised Lending Services

Financing of agricultural activities will not be limited to farmers. It will include input suppliers, processors, market intermediaries, warehouse operators, haulers, researchers and extension officers.

Specialised lending services such as venture capital, leasing capital, plant pools, inventory credit, etc. will be made available to these operators. Long term needs of operators will be addressed by appropriate lending instruments and funded, for instance, by the proposed Agricultural Development Fund. In the case of inventory credit, government will ensure that the provision of credit will be combined with effective marketing advisory services.

3.2.3 The Agricultural Development Fund (ADF)

The supply of funds for the agricultural sector is woefully inadequate considering the emphasis placed on agriculture as the basis for development. Currently the sector relies heavily on external funding which is not sustainable while the limited credit available is mostly short term.

For the nation to obtain the high level of production as envisaged in this policy, there is the need for massive infusion of long term funds to the sector. The Agricultural Development Fund is being proposed to mobilise additional funding to reduce dependence on donors and address the need for long term investment.

Objectives

- To make funds available to banks and other financial institutions for on-lending to agriculture,
- To make financial resources available to agricultural leasing and mortgage companies to finance their operations; and
- To make it possible for agricultural operators to have access to credit irrespective of size, location, and gender.

Potential sources of funding for the ADF

1. Taxes on selected food and agricultural commodity imports;
2. Internally generated funds;
3. Grants;
4. Others

Table 3-2: **Interventions in the Area of Access to Agricultural Financial Services**

Intervention	Status	Implementing Institution	Funding*	Remarks
Capital leasing	Limited	Private	Private sector	Additional resources required, private sector to be sensitized
Micro financing	Limited	Public, private	IFAD, AfDB, NGOs	Additional resources required
Inventory credit	Limited	Private, NGOs	IFAD, AfDB, NGOs	Additional resources required
Export financing	Limited	Private, Public	Commercial banks	High interest rates
Establishment of Agricultural Development Fund (ADF)	New	To be identified	Partly identified	Legislation required
Strengthening of rural financial institutions	On-going	RFP, BOG	World Bank, FAO, AfDB, NGO	

* Includes Government of Ghana Funding

3.3 Development, Dissemination and Adoption of Appropriate Technology

Against the background of limited land and water resources, it is clear that the objectives of MOFA can best be achieved by the continued utilization of science and technology to enhance agricultural production and productivity. Limited access to appropriate technology at all levels in the crops, livestock, and fisheries sub-sectors is one of the major obstacles to agricultural development.

3.3.1 Crops

The main issues to be addressed are:

- Development and dissemination of improved varieties of seeds and planting materials;
- Crop improvement, adaptation, and multiplication of introduced varieties; and
- Improvement in farm level operations (cultural practices), soil degradation and post-harvest handling.

Development and Dissemination of Improved Varieties of Seeds and Planting Materials

Extensive research has been done on crops such as maize, rice, millet, sorghum and roots and tubers such as cassava and sweet potato. The problem however is making improved seeds and planting materials available to farmers at affordable prices. The solution is to make breeders, foundation seed producers and seed growers to expand their operations. This will require training and financing. To ensure quality control, MOFA will be strengthened to carry out effective seed certification services. In addition, MOFA will facilitate market linkages to enable farmers to have access to the materials.

Recent developments in bio-technological research hold a lot of promise for boosting agricultural production in low-income countries like Ghana. Bio-technological processes range from microbial fermentation, biological nitrogen fixation and tissue culture to engineering of plants.





The Ministry will continue to expand its research programme aimed at improving rice varieties and yield

These processes have been used to increase food production, reduce costs, fight diseases in crops and animals and reduce environmental damage caused by traditional production methods and use of pesticides. The CSIR and the universities will be financed to undertake bio-technology research into crops selected for support under this policy.

Crop Improvement, Adaptation, and Multiplication of Introduced Varieties



To maintain the purity of existing crop varieties and to further develop new varieties that will respond to changing market demands and environmental stresses, continuous crop improvement strategies will be pursued. The problem of limited access to improved planting materials will also be addressed through a sustainable national multiplication programme with public private sector participation.

Improvement of Farm Level Operations (Cultural Practices) and Post-harvest Handling

The issues to tackle here are:

- Land preparation,
- Planting,
- Land and water management and soil fertility improvement,
- Disease and pest control,
- Harvesting and handling,
- Processing and packaging,
- Storage; and
- Utilization.



Land preparation

The continued use of the hoe and cutlass is a constraint to agricultural production. There is the need to adopt mechanized farming on a much wider scale. MOFA will facilitate farmers' access to agricultural machinery and equipment such as tractors and bullock ploughs, where suitable.

MOFA will also support the establishment of plant pools by private entrepreneurs for leasing of machinery and equipment and manufacturing implements. This will involve assistance in acquiring credit, technical training and institutional support.

Planting

To reduce drudgery and increase the efficiency of small to medium scale farmers, MOFA will promote the use of portable jab planters and small mechanical planters through information dissemination. Local manufacturing of the tools and equipment will be encouraged by helping entrepreneurs to obtain credit for their operations.

Individual farmers or farmer groups will be assisted to obtain credit to enable them acquire the tools and implements from manufacturers. Nucleus farmers will also be assisted to procure tools and implements for hire to out-growers.

Land and water management and soil fertility improvement

The productivity of most agricultural lands in Ghana is declining at an alarming rate due to widespread land degradation caused by soil erosion, deforestation, soil nutrient mining, uncontrolled bush burning and other poor management practices. MOFA through DCS will create awareness and train farming communities to adopt sound land and water management practices to restore and maintain the productivity of agricultural lands. These practices include mixed farming, use of agro-forestry systems and effective use of organic and inorganic fertilisers.

To address the issue of moisture stress during the growing season, efforts will be made to disseminate information regarding in situ moisture conservation practices including harvesting of rain water for crop production.



Management of soil fertility would ensure less dependence on chemical or other environmentally unsafe methods to enhance productivity

As farmers cannot afford the high cost of mineral fertilizer, improved soil fertility management strategies such as Integrated Plant Nutrition System (IPNS) which involves the combined use of mineral fertiliser and both on-farm and off-farm organic sources of plant nutrients (e.g. farm yard manure, farm waste, crop residues, green manuring) will be promoted. In addition, DCS of MOFA is implementing the National Soil Fertility Management Action Plan for the restoration, maintenance and enhancement of soil fertility.

Serious attention will be paid to efficient fertiliser usage. MOFA will develop and maintain a regulatory system to ensure efficient fertilizer management and quality control

Disease and Pest Control

Crop losses due to pre-harvest and post-harvest disease and pest attacks at the farm level are at unacceptably high levels. Losses are higher in improved varieties. New varieties can be attacked by pests that are unknown to farmers and might be more vulnerable to existing pests in the localities. Furthermore, improved varieties usually require the use of chemical crop protection products or biological control agents which are too expensive for the majority of farmers or require management expertise that is not easily available.

To reduce crop losses, disease and pest control at the farm level will be promoted by encouraging the application of Integrated Pest Management (IPM) methods. Additionally, the PPRSD will intensify its biological control activities to minimize attacks by key pests including the cassava green mite, mango and cassava mealy bugs, larger grain borer, variegated grasshoppers and termites. Early-warning systems will be put in place to check the African armyworm and the larger stem borer.

The promotion of trade in agricultural commodities is on the increase. The need for phytosanitary measures to minimise the accidental introduction of exotic pests and invasive species cannot be overemphasized. Quarantine as the first line of defence will be strengthened.

Furthermore, education on appropriate use of recommended pesticides for control of pests that are not responsive to bio control would be intensified.

Harvesting and Handling

Currently, appropriate harvesting equipment is not widely available. There is therefore the need to support research to develop prototypes. In addition to developing appropriate tools and equipment for crop harvesting, current post-harvest handling practices, especially for fruits and vegetables, will be upgraded to maintain quality and extended shelf life. For instance, farmers' knowledge and skills will be upgraded in the areas of:

- Optimum stage of maturity for harvesting various commodities for export,
- Appropriate on-farm post harvest handling methods,
- Appropriate on-farm pre-cooling technology; and
- Appropriate means of transporting produce.



Harvesting Rice

Processing and packaging

The primary reason for processing is to add value, increase shelf life and expand demand for agricultural produce. Processing also reduces post-harvest losses and promotes price stability. MOFA will identify and promote appropriate processing technologies at the farm and industry levels.

Various processing technologies are available. Pilot projects will be implemented to demonstrate performance of new technologies and business opportunities. MOFA will support

the private sector to invest in these technologies. Issues of adequate quantities and quality of raw materials for processing will be addressed through effective extension services.

Storage

Inadequate, inappropriate as well expensive storage facilities are constraints to agricultural production. They contribute to high post-harvest losses and low returns for farmers and processors. MOFA will support farmers to access credit to construct appropriate storage facilities. In addition, MOFA will support research into best storage practices for adoption.



Minimizing post harvest losses and maintaining high quality of produce is crucial for sustainable and profitable agriculture Photo credit: Global 2000

Utilization

Research to develop multiple utilization of agricultural produce and their residuals to achieve zero wastage will be vigorously pursued.

The Women in Agricultural Development Directorate (WIAD) of MOFA in collaboration with the Nutrition Division of the Ministry of Health will promote the primary processing and utilisation of indigenous food ingredients such as fufu flour, composite flour for bread and pastries, rice grits etc.

3.3.2 Livestock

The main thrust for the development of the livestock sub-sector will be:

- Production of improved breeds,
- Production of animal feed,
- Feed quality control,
- Control of animal diseases,
- Development of the dairy industry; and
- Improved animal husbandry practices.



Production of improved breeds

Currently, improved breeds of chicken and small ruminants are mostly imported. Local production is rather limited. The livestock breeding stations of MOFA will improve the productivity of large ruminants (beef and dairy cattle), small ruminants (sheep and goats) and pigs. In addition MOFA and animal Research Institute will conserve the genetic diversity of indigenous livestock breeds.





Production of Animal Feed

One of the problems facing livestock producers is access to feed throughout the year, especially in the dry season. The objective of the policy is to increase availability and the nutritive value of feed. MOFA will advise farmers on the use of appropriate and affordable animal feed such as by-products and crop residues of rice, maize, sorghum, cassava, groundnuts and other leguminous crops.

MOFA will support farmers to undertake intensive fodder production with forage legumes and forage seeds production. District Assemblies will be encouraged to produce forage seed at the community level for farmers.

Feed quality control

The quality of commercial feed can currently not be guaranteed. To ensure the production of good quality feed by commercial animal feed millers, the Animal Production Directorate, Ghana Standards Board and the Animal Research Institute will collaborate to set standards and regulate the industry.

Control of animal diseases

The government has liberalized the procurement and distribution of veterinary drugs and partly privatized the delivery of animal health care services in order to improve the efficiency of service delivery. MOFA will continue to support the increasing role of the private sector in the delivery of animal health services. To ensure the success of this programme, government will withdraw from the provision of services such as clinical diagnosis and treatment in geographical areas where there are private practitioners.

The public sector will continue to be responsible for such functions as disease surveillance, quarantine, quality control of remedies and vaccines, public health and disease control, planning for emergencies and reporting to international bodies, import-export inspection according to international standard, general formulation of animal health development policies and creation of the enabling environment for the private sector.

Private participation in animal health care delivery

Support will be given for the establishment of more Private Vertinary practices in the country, particularly in the livestock producing areas. Support will also be given for the training of more Community Livestock Workers who will provide simple and basic animal health care in their communities

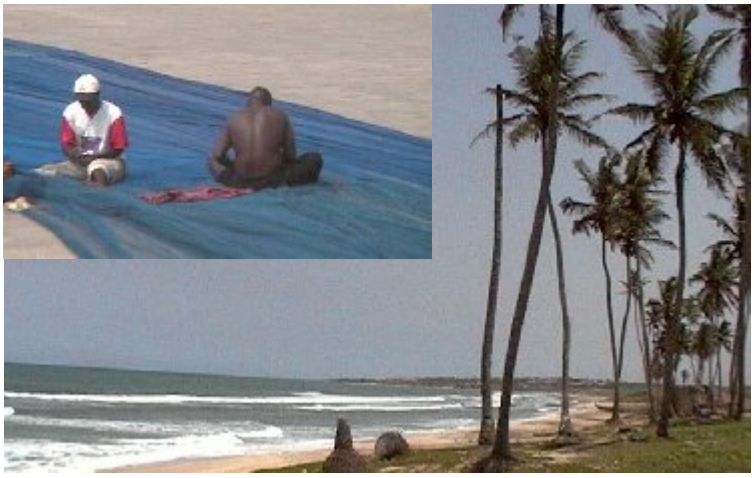
Development of the dairy industry

In the area of dairy development, local herds will be upgraded through artificial insemination in order to increase production of milk. The collection and marketing of milk will be fully transferred to Farmer Based Organizations (FBO's). The APD's dairy cattle breeding farm at Amrahia will be turned to a self-supporting training facility. Gradually the dissemination of dairy production and marketing technology will be fully integrated into the regular programme of Subject Matter Specialists (SMS) and all other activities privatised.

Improved animal husbandry practices

Animal husbandry practices have generally been traditional. MOFA will intensify livestock extension activities to cover areas such as improved housing, feeding and general management.

3.3.3 Fisheries



Marine and inland water bodies are the traditional and the most significant sources of fish production. The bulk of the fish is landed by the artisanal fishers and suffers high post-harvest losses. Fish stocks from these sources have dwindled.

The policy will focus on:

- Stock Rebuilding and Management
- Development of Landing Sites
- Fish Processing
- Fish Storage and Marketing
- Aquaculture

Stock Rebuilding and Management

Catches from traditional sources have steadily decreased because of over-exploitation of the fisheries resources. There is therefore the urgent need to facilitate re-building of the fish stocks.

Introduction of fisheries management plans based on the best available scientific practices (reducing pressure on stocks, protection of spawning grounds and habitats, minimizing the use of illegal fishing gears and methods etc.) will result in sustainable increase in fish catches.

The public and private sector including traditional authorities and fishermen could form partnership in the sustainable management of these resources.

Development of Landing Sites

The absence of appropriately developed landing sites along the marine coast and the Volta Lake pose a great danger to artisanal fishers during canoe launching and landing, and run the risk of losing their canoes and catches.

To reduce the risks that fishermen face especially in landing their catches on open beaches, MOFA will support the development of landing sites for both marine and inland waters in collaboration with the District Assemblies.

Processing

The bulk of fish is processed either by smoking or salting (to a lesser extent). Many of the operators in the fish processing business still use the traditional methods of smoking. These methods have low productivity and pose health hazards to the fish smokers. The



Chorkor smoker





Modern fish loining and cannery – adding value

Choker Smoker will be further developed and promoted by MOFA in collaboration with research institutions and the technical institutions.

Storage and marketing

Appropriate storage facilities for fish are important to reduce post-harvest losses, retain wholesomeness and ensure stable prices. MOFA will support this function by facilitating access to credit for the private sector to acquire cold storage facilities, including blast freezers. Dissemination of information on quantity standards, prices and sources of supply will be carried out

Aquaculture

Production of fish from Aquaculture is currently not very significant. However, there is the need to promote aquaculture production to supplement production from marine and inland water bodies whose stocks are seriously dwindling.

The policy on Aquaculture will focus on:

- Production of fingerlings
- Construction of ponds
- Fish husbandry and health.

Production of fingerlings

The country has the technology for producing tilapia fingerlings. However there are problems with the production of catfish fingerlings for which further research is required. The strategy for increasing fingerlings supply is to rehabilitate existing public sector hatcheries and re-stock them with good quality broodstock. In the short term, the public sector will continue to manage the hatcheries and promote the industry and eventually transfer this role to the private sector, once it becomes profitable and their capacity has been developed. In promoting private sector participation, MOFA will provide advice and training in hatchery management. Extension officers will be trained to enable them impart the knowledge and skills to prospective fish farmers.

Construction of ponds

Government has established trained and equipped pond construction gangs in high potential aquaculture districts. These gangs will enable small-scale farmers to build good drainable fish ponds for increased aquaculture fish production.

Existing ponds owned by the public sector will be rehabilitated and transferred to private sector operators. MOFA will provide technical expertise to the private sector in the construction of ponds, water harvesting, control and distribution.



Fishpond

Fish husbandry and health

Expertise in fish husbandry, disease control and water chemistry exists in the public sector. Fish farmers will be trained to acquire the necessary skills in fish husbandry, harvesting, and disease management. Research-extension linkages between the Water Research Institute and the Department of Fisheries and other stakeholders will be strengthened to satisfy the needs of fishers.

3.3.4 Approach to Technology Dissemination

The dissemination of information on technology is important for its adoption. Dissemination is mostly carried out by public and private extension agents, NGOs, nucleus farmers and the print and electronic media. MOFA's new extension policy aims at pluralism in extension delivery and funding and also the introduction of innovations in delivery methods and effective dissemination of technologies. It has been recognized that no single extension approach is suitable for all situations. MOFA will therefore assess the effectiveness of the different approaches for promotion.

Major elements of the policy are:

- Strengthening of Farmer Based Organisations (FBOs),
- Private sector participation in extension,
- Research-extension-farmer linkages; and
- HIV/AIDS, gender, and equity

Strengthening of Farmer Based Organisations (FBOs)

To empower farmers to take the right decisions regarding their agricultural activities, MOFA will collaborate with the Department of Co-operatives to strengthen the capacity and facilitate the formation of FBOs. A fund has been established to support the development of FBOs.

Private sector participation in extension

To improve the effectiveness of extension delivery, MOFA will encourage private sector participation (including NGOs) in the delivery and funding of agricultural extension services. Although this is currently being done for some commodities, MOFA intends to expand the coverage. An Extension Development Fund has been established to support the process.



Research-extension-farmer linkages

To ensure relevance of extension services to farmers, links among researchers, extension officers and farmers will be strengthened through Research Extension Liaison Committees (RELCs). These linkages will ensure that technologies generated by research meet farmers' needs. An operation manual has been prepared to guide the process.

HIV/AIDS, gender, and equity

Extension staff will be trained in HIV/AIDS prevention to enable them team up with community health workers to provide basic information on the subject in rural areas. To ensure that the needs of women farmers are adequately addressed, MOFA will for instance endeavour to increase the number of female extension workers. MOFA has also developed a strategy to promote gender mainstreaming in sector activities.

Table 3-3 Interventions in the area of technology development and dissemination

Interventions	Status	Implementing Institution	Funding*	Remarks
Crops				
Development of new varieties	On-going	CSIR	IFAD, AfDB, AgSSIP	
Seeds and planting material multiplication	On-going	GLDB, MOFA, BNARI, private sector	IFAD, AfDB, GTZ, AgSSIP	Private sector to be encouraged
Post-harvest handling	On-going	MOFA, CSIR, Private Sector	Various donors, NGOs	Very limited
Efficient fertiliser delivery system backed by quality control and regulatory services	New	MOFA, CSIR, Private Sector	AgSSIP, IFDC, Donors	Private sector to be encouraged
Competitive grant schemes	New	CSIR	AgSSIP	Demand driven
Adaptive research	On-going	CSIR, MOFA	Various donors	Limited
Land preparation technology	Limited	MOFA, CSIR, Private Sector	AgSSIP, GTZ	
Crop protection	On-going	MOFA, CSIR	GTZ, FAO, AgSSIP	
Planting technology	Limited	MOFA, CSIR, Private sector	AgSSIP	
Irrigation Water harvesting	Limited	MOFA, NGOs, Private Sector	Various donors	
Storage	Limited	MOFA, NGOs, Private Sector	AgSSIP, VIP	
Livestock				
Production of improved breeds	Limited	CSIR, MOFA, Private Sector	AgSSIP, AfDB	
Control of feed quality	Limited	CSIR, MOFA, GSB, Private Sector	AgSSIP, AfDB	
Control of animal diseases	On-going	MOFA, Private sector	AgSSIP, AfDB	
Dairy development	Limited	MOFA, Private sector , ARI	AgSSIP, FAO	
Fisheries				
Production of fingerlings	Limited	MOFA, CSIR, Private Sector	AgSSIP	
Storage/marketing	Poor	Public, Private Sector	To be identified	
Other				
Research into the uses of all parts of crops, livestock, fish to achieve zero waste	New	CSIR, MOFA	AgSSIP, other donors	Private sector to be encouraged
Extension approach				
Strengthening of farmer-based organisations (FBOs)	On-going	MOFA, DOC	AgSSIP	
Private sector participation in extension	Limited	MOFA, Private Sector , NGOs	AgSSIP, GTZ	
Research-Extension-Farmer linkages	On-going	MOFA, CSIR, COCOBOD, Private Sector	AgSSIP	
Use of different approaches to extension delivery	Limited	MOFA	AgSSIP, GTZ	

* Includes Government of Ghana Funding

3.4 Infrastructure Development

Increase in agricultural growth will require major investment in infrastructure such as irrigation facilities, a good network of trunk and feeder roads, storage, processing facilities, fish hatcheries and markets. Investment in rural infrastructure will create opportunities for the private sector to establish businesses in the rural areas.

The following infrastructure issues are of concern:

- Irrigation and water management
- Agricultural Land
- Transportation systems
- Rehabilitation of hatcheries, research laboratories and quarantine stations
- Energy, machinery, equipment and tools

Irrigation and water management

Agricultural production is mostly rain-fed. Rainfall is unreliable and poorly distributed. This adversely affects agricultural production, making investment in the sector risky.

Agricultural production can be greatly improved through the provision of irrigation and moisture improvement facilities such as water harvesting as well as valley bottom drainage improvement.

Development of the irrigation sub-sector will involve a two-pronged approach:

i) Micro and Small Scale Irrigation: This will focus on the provision of boreholes, dugouts, tube wells and other simple water harvesting structures. The target beneficiaries are the small-scale farmers.

ii) Medium/Large Scale Irrigation: This will involve rehabilitation and construction of dams, pumping stations, diversion structures, canals and long distance conveyance pressure pipe systems. Funding will be sought for irrigation of the Accra Plains. The target beneficiaries are commercial investors. Public Private Partnerships will be promoted for maximized economic utility.



Ghana has abundant water resources to make irrigation a centerpiece of its agricultural policy.

Water for livestock, aquaculture, agro-processing and domestic use is a necessity. MOFA will liaise with agencies in the water supply sector to put the existing systems to more efficient use.

Agricultural Land

About 57% of the total land area of Ghana is suitable for agriculture. However, there are many indications of land scarcity in Ghana as a result of degradation, access and cumbersome land tenure systems. MOFA will support the governments land policy.

There are three (3) categories of land ownership provided in the 1992 constitution of Ghana, namely:

(a)Public Lands, i.e. state land and land vested in the President in trust for the people of Ghana

(b) Stool/Skin lands (Community lands vested in the traditional/other community leaders on behalf of the community)

(c)Private and family/clan lands (owned by families, individuals and clans in the community)



Investors and the land custodians work together to ensure land and other natural endowments benefit the nation.

The laws of Ghana do not allow freehold lands. Non-Ghanaians can have access to residential, commercial, industrial or agricultural land on leasehold basis up to 50 years subject to renewal from any of the three (3) categories of ownership mentioned above.

MOFA will guide prospective investors to acquire and register their lands. Poor management of land as a resource is a major constraint to agricultural land use in Ghana. This becomes obvious especially in livestock producing areas where animals are reared on a free-range basis. Land management implies using land in such a way that its carrying capacity is maintained or improved. MOFA will promote the adoption of proper land management practices and farming systems. This will include the use of land capability and soil fertility maps and the replacement of lost soil nutrients.

In view of the difficulty in acquiring of agricultural land in the country, there is the urgent need for both government and traditional land owners to establish land banks. This will involve taking an inventory of MOFA lands in the country. The District Assemblies will be required to establish land banks specifically for agricultural use. This will be complemented with the preparation of soil suitability maps. Information on land will be made available to prospective investors.

Transportation system

The current transportation system is unsatisfactory. The roads are limited and some of them are un-motorable for some part of the year. Vehicles are all purpose and not specialized for agricultural use. The existing transport network (roads, rail lines, and waterways) needs to be maintained in the short to medium term. In the long term, the road network should be extended. Rail and water ways should be developed to help cart agricultural produce. To complement the transport system, assembling points, storage warehouses, landing sites, and freezing facilities will be constructed with private sector participation.

Rehabilitation of hatcheries, research laboratories and quarantine stations

As part of the essential agricultural infrastructure, fish hatcheries will also be provided as mentioned in section 3.3.3. Existing research laboratories will be rehabilitated and re-equipped, where necessary to improve research programmes. Facilities to be rehabilitated will include bio-technology, veterinary and seed laboratories.

Energy, machinery, tools and equipment

Investment cost for the provision of electricity, construction of factories, irrigation facilities and roads might be prohibitively high for the individual or small company. For these, capital leasing, plant pools and joint ventures will be facilitated (see also section 3.2.2).

Most agricultural processing installations require multi-phase electricity, which is unavailable in some rural areas. MOFA will liaise with agencies in the energy sector to resolve this and explore alternative sources of energy such as solar and biogas.



Table 3-4: Interventions to improve rural infrastructure

Interventions	Status	Implementing Institutions	Funding*	Remarks
Provision of irrigation facilities	Limited	Public	Various donors	Additional funding and Private Sector participation required
Establishment of land banks	New	Public, traditional authorities, District Assemblies	To be identified	Funding required
Provision of storage facilities:				
Assembling points	New	Public, private	To be identified	Funding required
Warehouses and silos	On-going	Public, private	To be identified	Improved management and additional private funding required
Cold storage facilities	Limited	Public, private	To be identified	Improved management and additional funding required
Provision of fish landing sites	Limited	Public	AgSSIP	Additional funding required
Provision of hatcheries	Limited	Public, private	AgSSIP	Additional funding required
Rehabilitation of research labs	Limited/ stalled	Public	AgSSIP	Additional funding required
Provision of access tracks and roads	Limited	Public	IFAD, VIP, DFR	Additional resources required
Supply and manufacture of machinery and equipment	Limited	Public, private	VIP, AgSSIP, SIF, REP	Additional funding required
Rehabilitation of quarantine stations	Poorly maintained	Public	AgSSIP	Additional funding required
Water supply for processing	New	Public, private	To be identified	Funding required
Energy supply	New	Public, private	To be identified	Funding required
Water supply for livestock and poultry	On-going	Public, private	To be identified	Additional funding required

* Includes Government of Ghana Funding

3.5 Promotion of Selected Commodities and Improved Access to Markets

As already mentioned, there is the need to increase production and productivity in agriculture to satisfy domestic and export demands. MOFA will focus on commodities for which Ghana has comparative and competitive advantage. This will also involve value addition as a way to increase farmer incomes. The promotion of these commodities will aim at ensuring food security, enhancing foreign exchange earnings, providing industrial raw materials and generating employment.

Selected commodities will have to satisfy the following criteria:

- Availability of technology for the production of the crop,
- Producers' experience with the crop,
- Marketability (export, regional or domestic),
- Comparative advantage,
- Potential for adding value,
- Food security,
- Poverty alleviation; and
- Environmental conservation

3.5.1 Selected Commodities for Food Security

MOFA will promote selected commodities, which constitute the bulk of Ghanaian dishes. The selected commodities will be promoted over the short, and medium to long terms as indicated below:

a. <u>Short Term</u>

Cereals	maize, rice, sorghum, millet
Starchy crops	yam, cassava, cocoyam, sweet potato, plantain
Legumes	cowpea
Vegetables	tomatoes, pepper, onions, other vegetables
Livestock and poultry	grasscutter, pigs, chicken

b. <u>Medium to long term</u>

Legumes	soybean
Vegetables	exotic vegetables
Livestock	small ruminants and cattle
Fats and oils	coconut, groundnuts, soy, sheanut, oil palm
Fruits and others	mango, citrus, pawpaw, banana

The ultimate objective is to achieve high production levels and profitability for all scales of production. It is expected that the structural transformation from subsistence to medium scale production culture will be achieved through this policy. This will be in line with the government's vision of moving from poverty reduction to wealth creation.

3.5.2 Agricultural Raw Materials for Industry

An important factor for the viability of industry is the availability of raw materials. The following raw materials have been identified for special attention:

Industry	Raw Material
• Sugar	sugarcane
• Textiles and Garments	cotton
• Leather	animal hide
• Tyres	rubber
• Paper	pulp, teak, gmelina
• Canning	vegetables, fruits, meat, fish
• Chocolate	cocoa, groundnut
• Edible Oils, Soap and cosmetics	oil seeds
• Brewery	maize, sorghum

Based on clearly defined criteria, the requisite assistance will be given to entrepreneurs engaged in the selected industries. In this respect, MOFA will collaborate with the Ministries of Economic Planning and Regional Co-operation, Trade and Industry, Private Sector Development and Local Government and Rural Development.

3.5.3 Agricultural Commodities for Export

In order to expand the export trade, there is the need to take advantage of niche opportunities for the range of commodities and products for which Ghana has potential comparative and competitive advantage. The ethnic markets currently proliferating across the U.S. and the EU provide such a market niche.



Vegetable growing is a potential frontier for job creation for the unemployed youth

Under this policy, special effective services required include market intelligence and communication, adequate financing, efficient handling and transportation, good port facilities, grading, standardization and strong export marketing associations. MOFA will support the production and marketing of the following commodities:

Commodity Group	Commodities/ Products
• Roots and tubers	yam and cassava products
• Vegetables	pepper, exotic vegetables
• Fruits	pineapple, mango, pawpaw, banana
• Tree and industrial crops	cashew, coffee, cocoa, sheanut, timber

3.5.4 Improved Access to Input and Output Markets

Improved marketing will ensure that producers pay and receive economic prices for their inputs and outputs respectively. MOFA will monitor input and output prices, liaise with suppliers, processors and retailers to develop mechanisms that will eliminate excessive profits.

Market integration will be sought for both inputs and outputs. Market information will be provided to help producers make good decisions regarding domestic, regional and international markets. Although these three markets have their own peculiarities there are certain requirements that are basic to all of them. These include high quality, supplies in the right quantities to meet demand, competitive price, timeliness in delivery, and attractive packaging.



Ability to deliver produce to the targeted markets cost effectively and at superior value is key to the success of this policy.

Photo credit: Prudential Bank

Emphasis will go beyond increased productivity and price competitiveness to include the development of alternative products and advantageous ways of marketing. Specific strategies include:

- Product development,
- Processing
- Market information,
- Packaging and labelling,
- Transportation, handling and storage
- Standardization and quality control,
- National strategic buffer stock; and
- External trade.

Product development

To expand market opportunities, there is the need to identify and develop new products. This as well as the marketability of such food commodities for final consumption or further processing will require research and development. MOFA will support both public and private institutions to identify exportable products of value.

Processing

Attention will be paid to agro-processing as a way of increasing food security and raising incomes in agriculture. Processing technologies will be explored to develop new products. Results of research conducted on indigenous foods will be made available through the Statistics, Research and Information Directorate (SRID) of MOFA and the Commercial and Business Unit (CBU) of CSIR. MOFA will collaborate with other bodies to set up pilot processing plants for selected commodities.



A rice mill

Market information

Market information is important for effective market integration. It allows market agents to move commodities from areas of abundance to areas of scarcity and, in so doing, stabilise prices.

At the export level, vital information for competitive advantage should be made available by the commercial desks of Ghana's diplomatic missions. Similarly, information packages will be given to Ghana's missions to enable them promote local products. A pilot initiative on e-commerce currently being implemented will be evaluated and improved.

Packaging and labelling

Product presentation drives sales. Attractive packaging and informative labelling is key to market dominance. Labelling must enable the consumer to make a choice among several alternatives. MOFA will provide standards and guidance to the private sector to improve on packaging and labelling.



Processed meat products showcased by University of Ghana- Legon



Food items processed and packaged by Flokan Limited.

Transportation, handling and storage

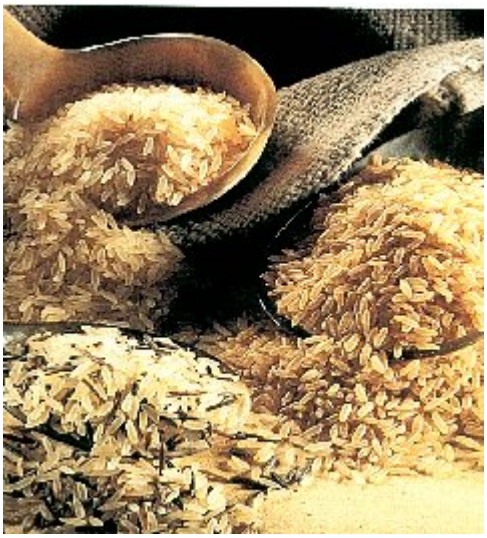
The private sector has a major role to play in transportation and will be given the necessary support to acquire specialised haulage vehicles and equipment. The public sector should expand and improve the road network to facilitate prompt evacuation of food from the producing areas to the processing and consuming areas.

Appropriate and adequate storage facilities will be provided at designated locations for food and raw materials. MOFA will facilitate the development and use of these facilities.

The Plant Protection and Regulatory Services Directorate (PPRSD) of MOFA will license and regulate warehouse operators to ensure that they go by approved safety standards.

Standardization and quality control

Efforts to introduce standardized weights and measures in the past did not succeed. The policy will aim at the most effective method to implement the scheme. MOFA will liaise with GSB, market queens and trade associations to establish and enforce available legislation for the use of weights and measures and grades and standards. Food safety standards will be developed by MOFA in collaboration with GSB and other relevant agencies and enforced by the private sector and MOFA for a successful export business. This strategy is currently operating within the pharmaceutical industry in Ghana.



Rice is consumed in almost every household in Ghana

National Strategic Buffer Stock (NSBS)



It is important for Ghana to hold some levels of cereals and legumes to cater for emergencies like poor harvests, other natural disasters and conflict situations. The NSBS will hold one to three months supplies of maize and rice built over a period. The stocks will be held and operated by private sector collateral managers. MOFA will monitor and establish stock levels. In addition to stabilising prices, the NSBS will create conditions for sustained markets. The storage of grains will be linked to inventory credit schemes to complement the NSBS.

Some storage facilities of the Ghana Food Distribution Corporation (GFDC) will be retained after divestiture for strategic purposes. These retained facilities will be rented out to the private sector for the NSBS and for other uses.

External Trade

With a population of less than 20 million and per capita income of less than $400, Ghana is a relatively small market. The possibility of increasing export earnings exist and Ghana can access the West African market better than it is currently doing. Currently, exports to the West African sub-region average less than 5 % of total exports. One of the hindrances to exports to the sub-region is the differential tariff structure between Ghana and the UEMOA countries.



Tema and Takoradi harbours provide important linkage to the external markets for agriculture produce and inputs.

Ghana is committed to the full implementation of the ECOWAS Protocol for the free movement of goods and persons in West Africa. MOFA will urge the MOTI and MEPRC to fast- track the harmonisation of the tariff structure in West Africa or between the UEMOA countries and the non-UEMOA countries.

Exporters will benefit from the Export Development and Investment Fund (EDIF) that has been created to promote exports. MOFA will create awareness of opportunities within the agricultural sector for the exploitation of this facility. Furthermore, agricultural and/or rural export trade will be developed to benefit from the Africa Growth and Opportunities Act (AGOA) of the U.S. With respect to AGOA, textiles and garments, handicrafts, sheanut and cassava will feature prominently but specific market niches in the U.S. and the EU will be targeted for other agricultural products.



Fruit and vegetable export volume through KIA continues to rise.

Ghana's trade will be pursued in the context of the World Trade Organization (WTO) protocol. It is therefore important that capacity is built to deal with WTO issues. The trade desk at PPMED of MOFA will support international traders. The desk will also provide inputs for the on-going negotiations on the General Agreement on Agriculture Trade (GAAT) of the WTO and the Cotonou round of the EU and ACP countries.

The successor to the Lomé IV Agreement between the European Union and the African-Caribbean-Pacific countries under which the ACP countries had non-reciprocal preferential treatment in the EU market is the Cotonou Agreement. The Cotonou Agreement, which will be implemented under Regional Partnership Agreements (REPAs), will take off in 2008. Ghana has to prepare itself in order to maximize its benefits from the REPAs. MOFA will team up with the Ministry of Trade and Industry and liaise with other countries in West Africa to get the best out of the EU in terms of agricultural trade.

Ghana's diplomatic missions should be re-oriented towards economic diplomacy to assist exporters in Ghana and importers in their countries of accreditation to expand Ghana's agricultural export trade.

MOFA will actively participate in investment promotion activities, such as agricultural shows, fairs, and tours of business delegations, and provide support to exporters through export financing activities.

3.5.5 Commodity Co-ordinators

The commodity systems approach will be used in promoting the selected commodities. The approach will focus on the whole continuum of the food chain from production to distribution. Commodity co-ordinators will be responsible for particular commodities or groups of commodities depending on the scale of development. Their operation will provide a timely input into policy formulation, and give the necessary support for the industry as well as facilitate a one-stop shop for information on all aspects of the commodities.
Commodity co-ordinators will perform the following functions among others:

- Identify requirements for promoting selected commodities,
- Coordinate activities of farmer based organizations and other stakeholders,
- Package and disseminate technologies and information on respective commodities,
- Obtain feedback and formulate response policies,
- Provide the point of contact and linkage between the commodity industry and MOFA,
- Design in collaboration with the Human Resources Development and Management Directorate and the Extension Services Directorate a training programme for subject matter specialists and private sector operators; and

- Create a forum for MDAs and other stakeholders to discuss issues affecting the development of the commodity.

The charts in Appendices B, C and D trace the agribusiness and industry chain, agricultural processing chain and production and distribution chain respectively.

Table 3-5 Interventions for Promoting Selected Commodities and Increasing Access to Markets

Interventions	Status	Implementing Institution	Funding*	Remarks
Product development	New	MOFA, NARS, private sector	AgSSIP	
Market information	On-going	MOFA, MOTI, private sector	AgSSIP	Pilot initiative in E-commerce
Pilot processing plants	New	CSIR, Tertiary Institutions, MOFA, private sector	AgSSIP, VIP	Additional funding required
Improving packaging and labelling	Limited	Public, Private	AgSSIP, private sector	Pilot project by MOTI and some NGOs
Specialised haulage systems	Very limited	Private	To be identified	Mainly for perishables and livestock
Licensed warehouse operators (LWO)	Inception stage	Private	To be identified	Linkage to inventory credit schemes
National Buffer Stock	On-going	Public, LWO	GOG	Political will, Linkage to inventory credit schedules; More funding required
Standardisation, quality control, weights and measures	Very limited	MOFA, GSB, MOTI, MES	AgSSIP, GTZ, AfDB	Needs enforcement More funding required
Trade and investment promotion	Limited	MOFA, MOTI, private sector	AgSSIP and GTZ	
Commodity specialists	New	Public	AgSSIP, GTZ, IFAD, AFD, AfDB	

* Includes Government of Ghana Funding

4 SPECIFIC COMMODITY POLICIES

The promotion of the commodities mentioned in section 3.5 aims at ensuring food security, enhancing foreign exchange earnings, providing import substitutes, providing industrial raw materials, employment generation and income for people engaged in the agricultural sector.

Crops not specifically listed for promotion will continue to receive attention and will be considered for development when their potential for further commercialisation emerges.

Specific commodity policies are outlined below according to the following categories:

- Cereals
- Starchy crops

- Legumes
- Vegetables
- Fruits
- Industrial crops
- Livestock
- Fisheries

4.1 Cereals

Cereals constitute a sizeable proportion of the diet of Ghanaians. The bulk of cereals produced is consumed locally, with only a small fraction exported to neighbouring countries. The most important cereal crops cultivated are maize, rice, sorghum and millet.

Maize



Maize is one of the most popular food crops on the domestic market and is grown in all the ecological zones of the country. It is the basis of several local food preparations and the main feedstuff for poultry and other livestock. It is cultivated by 1.75 million (64%) of the 2.74 million households operating farms in Ghana. These are mainly small-scale farmers who use a low level of technology.
Ghana's maize production has stabilized around 1 million mt/p.a. for the past 3 years. This production level has been inadequate for human and animal consumption, yet some unrecorded exports have been known to have taken place across the borders.

Currently, total area put under maize cultivation is about 713,000 hectares with yields averaging 1.5 mt/ha. The achievable yield is about 5 mt/ha, which means that the potential to increase yields is very high.

MOFA's policy focus will be on improved seed production, credit, storage, processing and marketing. The preference is to increase production through intensification rather than area expansion.

Rice



Despite the importance of rice as a staple, domestic supply is inadequate making Ghana a net importer. The self-sufficiency ratio fluctuates between 26% and 65%. Production level is about 178,000 metric tonnes. Average yields of 2 mt/ha are obtained currently although achievable yield is about 6.5 mt/ha. Area under cultivation is about 138,000 hectares involving about 800,000 farm households. Technology is basic, and there is limited use of improved seeds and machinery.

The policy is to ensure food security and promote import substitution. The thrust is to reduce imports by 30% by 2004 by increasing production level to about 370,000 metric tonnes. This will involve both extensive and intensive systems of production.

Specific measures to reach this level of production will include increased mechanization, increased cultivation of inland valleys and effective and efficient utilization of existing irrigated

systems. In addition, varietal improvement and increased seed production and utilization will be pursued. The provision of credit for production, improved processing and marketing will be facilitated.

Sorghum/Millet



Sorghum and millet are important staple cereals in the northern part of Ghana. Sorghum is significant in its use as raw material for pito (local brew). It also has potential as raw material for the larger industrial breweries. About 840,000 farm-households cultivate millet and sorghum. Suitable areas for the crop are the Upper West and East Regions and Northern Region.

Production levels for sorghum and millet are currently 280,000 and 134,000 metric tonnes respectively. The average yield is about 1 mt/ha for both crops with achievable yield of about 2 mt/ha. Technology for soil preparation is basically traditional, using the hoe and animal traction. There is limited use of fertiliser and other agro-chemicals in the cultivation of both crops.

The policy is to ensure food security, employment and poverty reduction. The strategy is to promote the cultivation of these crops in mixed cropping systems with legumes. Emphasis in this regard will be placed on increasing productivity.

4.2 Starchy crops

The major starchy crops of importance in Ghana are cassava, yam and plantain. While cassava is cultivated in all agro-ecological zones, yam is predominantly grown in the northern sector of the country. Plantain thrives well in the forest zone of the southern sector.

Available information for 2001 indicate a surplus of about 6 million metric tonnes for starchy staples. For these crops, emphasis is on value addition and export promotion.

Cassava



Cassava has great potential for development. It is a major component of most Ghanaian dishes. Cassava is consumed fresh as well as in many processed forms. Currently, it is exported in the form of chips and grits (*gari*).

The production level as at 2001 is about 9 million metric tonnes. The crop is cultivated by an estimated 1.55 million farm households cropping 726,000 hectares. Prevailing yields are 11.8 mt/ha although 28 metric tonnes are achievable.

The policy thrust is to increase production through increased productivity and area expansion especially on marginal lands. In addition, varietal improvement including storability of planting material, value addition (e.g. use of cassava powder in composite flour for bread and other confectionery) and marketing will be pursued.

Yam



Yam is significant for both domestic and export markets. Ghana contributes 25% of the yam traded in the international market. About 3.5 million metric tonnes are currently produced, from a cropped area of 287,000 hectares. While achievable yields are 20 mt/ha, only 11.8 mt/ha are currently achieved. There are about 270,000 farm households cultivating yam.

The emphasis will be on processing into dry powders and vacuum-packed fresh yam pieces. These products will increase domestic consumption and Ghana's share in the yam export market. MOFA will facilitate the organization of yam exporters to enhance their efficiency in the export market.

Plantain



Plantain is an important staple crop that has high potential for value addition and export. It is cultivated mainly in the forest regions of the country, mostly by small to medium-scale farmers, using traditional technologies.

Production level is currently about 2 million metric tonnes. Prevailing yield is about 7.8 mt/ha, relatively close to the potential yield of 10 mt/ha.

The policy focus will be to increase production through planting material multiplication and improved farm management. Its value added potential will be pursued through processing into plantain powder and chips.

Other starchy crops

Sweet potato and coco yam are crops cultivated currently on a limited scale. They are also important in the local diet. MOFA has initiated measures to promote their production and is currently exploring possibilities for further development and utilisation.

4.3 Legumes

Legumes are produced primarily for domestic consumption. The key legumes cultivated are groundnut, cowpea and soybean. In the northern regions, legumes are an important cash crops, especially for women farmers. They have high industrial potential for oil and livestock feed supplement. Legumes are important as substitutes and supplements for animal protein. They are mostly grown in the transition and guinea savannah agro-ecological zones.

Groundnut



Annual production is currently 286,000 metric tonnes. Actual yields are about 1 mt/ha whereas the potential yields are about 2 mt/ha. Groundnuts are largely grown by small-scale farmers using the traditional hoe and cutlass technology.

MOFA's priorities are to promote labour saving technologies in production and processing. Productivity increases will be achieved through the use of phosphorus based fertilisers.

Cowpea

Current level of production stands at 63,000 metric tonnes. Although yields of 1.5 mt/ha can be obtained, only 0.75 mt/ha is achieved.

The focus will be on increasing productivity and improving post harvest management to preserve the quality of the commodity in storage. MOFA will facilitate farmers' access to credit to enable them apply appropriate technologies to increase productivity.

Soybean



Soybean has emerged as one of the potentially important food crops in the country. It provides improved human nutrition especially for infants and is significant for industry. Increasing demand from industries (for vegetable oil and animal feed) outstrips current production.

Current production is estimated to be approximately 525 metric tonnes with yields around 0.75 mt/ha.

The emphasis will be on processing and marketing. The transfer of improved technologies of soybean production and utilization will be intensified.

4.4 Vegetables

Vegetables are important for both domestic and export markets. While the cultivation of some vegetables may be limited to some parts of the country, others are cultivated countrywide. The traditional hoe and cutlass technology is mainly used. Vegetables for the domestic market include tomato, onion, shallots, pepper, garden eggs and okro. Important export vegetables are tinda, garden eggs, aubergines, peppers and green beans.

Ghana has a comparative advantage in the cultivation of export vegetables but due to low productivity, poor product quality and packaging, poor timing of harvest for export, and poor organisation of exporters, her share of the world vegetable market is significantly lower than the potential.

Tomato



Tomato is an important component in Ghanaian dishes. It is grown throughout the country but concentrated in the Greater Accra, Ashanti, Brong Ahafo, Volta and Upper East Regions under both rain-fed and irrigated systems.

Area under tomato production is about 37 000 hectares with yields of 7.5 mt/ha, giving a production level of 277,000 metric tonnes. Post harvest losses are high and there is very little processing making Ghana a net importer of processed tomato.

The policy focus would be on improved farm management, quality improvement, reduction of post harvest losses, safe use of agro-chemicals and processing. Tomato farmer based organizations would be promoted to organize production to meet industrial processing needs and to stagger production of the commodity to minimize the glut of fresh tomatoes experienced annually.

Pepper



Pepper is an important cash crop. It has high domestic demand and is exported. Exports have been increasing annually. There is still potential for increasing exports. Pepper can be stored for long periods when dry. It is cultivated in all agro ecological zones by small to medium scale farmers using a wide range of technologies.

Current yields are about 6.45 mt/ha(fresh pepper). MOFA will encourage area expansion, improved farm management for higher yields, processing and packaging. Farmers will be assisted to access credit.

Other Local Vegetables

Other local vegetables are okro, garden eggs, shallot and leafy vegetables. These are produced mainly for domestic consumption. Currently, there are limited exports of garden eggs and okro. Promotion of these crops will target quality improvement. Emphasis will be placed on ensuring appropriate use of agro-chemicals and other safe production practices. Production will be expanded to meet increasing domestic and export demands.

Exotic Vegetables



Exotic vegetables like tinda, green beans, carrots, cabbage etc. are high value crops with great demand in urban centres and/or for export. These crops are grown in Greater Accra, Eastern and Central Regions. Ghana has a locational advantage to European markets as compared to other producing areas in Southern Africa and the Carribean. MOFA will take opportunity of this advantage and encourage the expansion of exports.

Promotion of these crops will focus on quality improvement and standards development. Cultivation will be promoted on irrigated lands.

4.5 Fruits

Major fruits in Ghana are pineapple, pawpaw, banana, mango, and citrus. These fruits have been produced mainly for domestic consumption. Recently, some of them have become major non-traditional exports. MOFA will support increased fruit production to take advantage of the international, regional and domestic markets.

Pineapple



The crop is important both for the domestic as well as the export markets. Exports of the crop have increased significantly over the years. The fruit may be consumed fresh or processed as canned slices, solid packs or pineapple juice. Pineapple bran obtained from processing can be used for the feeding of livestock. The crop is also the source of *Bromelain*, which has a number of industrial and medicinal uses.

Pineapple is cultivated mainly in the Eastern, Greater Accra and Central Regions. Levels of production of pineapple have exceeded 100,000 metric tonnes in 2001. Currently, about 2,000 hectares of the crop are cultivated by small, medium and large scale commercial growers, employing mechanised and high input technologies. Even though average productivity of the crop is about 50 mt/ha, 80 – 100 mt/ha is achievable under very favourable climatic conditions and good farm management.

The policy focus for pineapple will be on the expansion of production through support to the private sector and NGOs to expand and improve upon their operations. Emphasis will also be placed on varietal improvement, quality standards, provision of credit, development of farmer-based organisations (FBOs) and expansion of exports.

Pawpaw (Papaya)



Pawpaw is important both locally and for export. Locally, it is mostly consumed fresh, but it can be processed into dehydrated slices, tropical fruit salads and cocktails, puree and jam. Pawpaw is the source of *papain*, used in the pharmaceutical, brewing and tanning industries. Exports of the crop have increased steadily over the years, reaching 1,792 metric tonnes currently.

Pawpaw is grown mainly in the Eastern, Volta, Greater Accra, Central and parts of Ashanti Regions. It is cultivated commercially, using mechanised and high input technologies. Average productivity is 40 – 45 mt/ha.

The development of the crop will focus on increased production through both area expansion and increased productivity, provision of credit, quality standards and improved marketing.

Banana



Banana is produced mainly for the domestic market. The export market is not very well developed. Volta River Estates Limited (VREL) is the only company that produces banana in commercial quantities. It supplies the domestic, regional and international markets.

The crop is cultivated in the forest agro-ecological zone under rain-fed conditions by small-scale farmers employing traditional technologies.

Promotion of this crop will emphasise cultivation of improved varieties, improved farm management practices and marketing. Other private companies will be encouraged to go into banana cultivation in an effort to expand production.

Mango



Mango is cultivated mainly for the domestic market. It can be consumed fresh, processed into fruit salads, cocktails, jellies, jams, marmalades and juice. It is, however, gaining importance as a non-traditional export crop, with export volumes reaching 231.7 metric tonnes(2001 export figures).
The cultivation of the crop is concentrated in the Eastern, Central and Greater Accra regions. Other regions recommended for mango cultivation are the Brong Ahafo, Northern, Upper East, Upper West and Volta Regions.

Productivity of mango is estimated at 10 mt/ha. It is produced by both small and large scale commercial farmers, using mechanised and high input technologies.

The policy focus for mango will target promotion of improved varieties, productivity and quality standards improvement, and processing.

Citrus

Citrus fruits such as oranges, tangerines, lemon and lime are produced mainly for the domestic market. Exports to some Sahelian West African countries are gradually increasing. Citrus can be consumed fresh or processed into juice. *Pectin* could also be extracted from citrus peel for food additive and conservation purposes.

In Ghana, the crop is grown mainly in the Eastern, Volta, Ashanti, Central and Brong Ahafo regions by both small and large scale farmers, using traditional and some level of mechanisation and high input technologies.

Development of the citrus industry will focus on market expansion (both domestic and sub-regional), promotion of improved varieties, provision of credit and processing.

4.6 Industrial Crops

In order to boost industrial growth, it is imperative that the production of agricultural raw materials for industry is pursued. This will generate employment and incomes in the agricultural sector as well as the agro-industrial sub-sector.

Important industrial crops to be promoted include rubber, cotton, sugar-cane, oil palm, coconut, cocoa, coffee and cashew.

Rubber



Rubber is cultivated mainly in the Western region. The area under cultivation is estimated at 17.500 hectares. Out of this area the Ghana Rubber Estate Limited (GREL) owns 12,000 hectares, with the remaining belonging to small holders cultivating an average of 3.6 hectares per farmer.

Productivity is estimated at 900 – 1,000 kg/ha in the GREL plantations, and 500 – 600 kg/ha among smallholders.

The focus, regarding the promotion of rubber will be on expansion of area under cultivation through the out-grower scheme. Emphasis will also be placed on replanting with high yielding clones and improvement in management systems.

Sugarcane

Sugarcane is produced mainly for domestic consumption. It is mostly used in the production of a local alcoholic beverage *akpeteshie*.

The crop is grown mostly in the southern part of the country in areas with high rainfall and soil water-holding capacity. It is cultivated by small to large-scale farmers, using mostly traditional technologies.

The cultivation of the crop will be promoted through area expansion, productivity increase and improvement in farm management. The processing of sugar-cane into sugar will be promoted.

Cotton



Cotton is produced mainly for the domestic market, feeding the local textile industries. It is cultivated mainly in the Northern, Upper East and Upper West regions.

The crop is cultivated by both small and large-scale farmers using a mix of technologies. Currently, annual production of the crop is slightly above 40,000 metric tonnes. Average productivity of seed cotton is 900 kg/ha (2002).

Promotion of cotton production will focus on quality seed production, improved input supply and utilisation, provision of credit, improved farm management and improved marketing.

Oil Palm



Palm oil, obtained from oil palm, is produced for both domestic consumption and for export. Palm kernel oil is produced mainly for domestic consumption. Exports of palm oil have been increasing in recent years.

Palm oil and palm kernel oil are used in several Ghanaian dishes. They are also important raw materials for industry, e.g. soap making. Palm oil is processed by both large and small scale mills.

Oil palm is cultivated mainly in the rain forest and deciduous agro-ecological zones of the Ashanti, Western and Eastern Regions. It is most often grown as a sole crop, both in plantations and by smallholder farmers. About one million metric tons of fresh fruit bunches are produced from a cultivated area of 285,000 hectares. About 13% of this area is cultivated by commercial entities, 0.2% by medium farm size holdings and 86.8% by other private holdings.

The promotion of the crop will target production increase through both area expansion and intensification of cultivation. Emphasis will also be placed on the cultivation of the improved hybrid, expansion of the nucleus out grower scheme and the upgrading of artisanal processing.

Coconut

Coconut is produced mainly in the rain forest zone of the Western and Central Regions. A total of about 30,000 hectares are under cultivation by some 30,000 smallholders with an average holding of about 1.5 hectares. Average yields are about 5,000 nuts/ha.



Coconut is either processed into *crude copra* to be sold to large scale millers for the production of coconut oil or processed into the oil using traditional processing methods.

The biggest threat to the crop is from the Cape Saint Paul Wilt Disease, which is destroying plantations, leaving isolated pockets of groves.

The focus will be on replanting plantations destroyed by the Cape Saint Paul Wilt Disease with disease-tolerant hybrids. The level of production will be improved through intensification. Artisanal small scale processors will also be assisted to acquire oil presses for more efficient oil extraction.

Cocoa



Cocoa is the dominant tree crop in Ghana, accounting for 20.5% of export earnings and 3.3% of GDP. The cocoa sub-sector employs about 24% of the labour force.

The crop is cultivated in the forest agro-ecological zones of the country by small and medium scale farmers using mostly traditional technology. Ghana produced about 400,000 metric tons in 2001 from an estimated 1.1 million hectares. While achievable yield is 1 mt/ha, only 0.4 mt/ha is currently achieved.

While COCOBOD is responsible for cocoa research and marketing, MOFA will concentrate on improved cocoa extension. The focus will be on yield improvement through improved farm management and effective disease and pest control.

Coffee

Coffee is produced in Ghana mostly for the export market. It is cultivated in the forest agro-ecological zones by small to medium scale farmers using a mix of technologies.

Currently, 1,380 metric tonnes of coffee is produced from an area of about 3,800 hectares. Most coffee farms are old, ranging from 15-25 years. Yields are low, in the range of 100 – 200 kg/ha.

Similar to the policy for cocoa, MOFA will support coffee primarily through extension services.

Cashew

Cashew is produced primarily for the export market, with only about 1% of all harvested good nuts used domestically. Whereas the apple can be processed into juice, jams and alcoholic beverages, the nut can be used in pastas, breakfast cereals, confectionery and bakery products. While the cashew nut shell may be used as a source of energy, the cashew nut shell liquid (CNSL) is used in the resin and rubber industries. Cashew nut shell liquid by-products are also used in the manufacture of several industrial products, e.g. paints, fungicides, glues and others.



Cashew production is concentrated in the coastal, transitional and guinea savannah agro-ecological zones. It is cultivated by small scale farmers with holdings less than five hectares, using the traditional hoe and cutlass technology with minimum input use.

Annual cashew nut production in Ghana is currently estimated at about 15,000 metric tonnes. Total land area under cultivation is about 18,000 hectares and average productivity estimated at 0.6 – 1.2 mt/ha of nuts between the 3rd and 20th year.

The focus, regarding cashew development, will be on re-planting with high yielding cloned materials, area expansion, improved farm management, and processing.

4.7 Livestock



Even though the importance of animal protein in human nutrition is acknowledged, the livestock industry in Ghana has received less than the required attention.

Important categories of livestock are cattle, poultry, pigs and small ruminants (sheep and goats). Most of these, except for poultry, are reared under low yielding technologies.



The recent past has, however, witnessed the emergence of grasscutter and ostrich farming. While the capture grasscutter population has increased from about 500 to about 5,000 over the past two years, due largely to collaborative work of MOFA and NGOs, the ostrich population has also grown steadily in the last two years, rising from a population of 500 to 2,000. Products from these two livestock types are of high value, and MOFA will endeavour to promote their production through awareness creation and provision of technical support for farmers and farmer groups.

Cattle



Beef is a major source of animal protein in Ghanaian dishes. Even though domestic production has been increasing over the years, reaching 18,570 metric tonnes in 2000, it contributes less than 30% of the national beef requirements. The country, thus, relies heavily on imports to augment its local production.

The level of dairy production is very low, as only small quantity of milk is produced in the peri-urban areas of Ghana in addition to a couple of diary farms.

Cattle are found almost everywhere in Ghana. However, concentrations of cattle rearing can be found in the coastal, transitional and guinea savannah zones, where tsetse fly infestation is reasonably less.

Generally, cattle are kept more by small to medium scale farmers, using communal lands for grazing. Only one dairy farm around an urban area employs a zero-grazing system.

Cattle production will be supported through breed improvement and improved extension. In the short term, focus will be on improved nutrition, water supply and animal health. Peri-urban milk production will be expanded through breed improvement and pasture development.

The control of major cattle diseases such as Contagious Bovine Pleuropneumonia and Trypanosomiasis (transmitted by the Tsetse fly) will receive serious attention. Support will be given for the control of diseases of public health significance such as Bovine tuberculosis, Bovine Brucellosis and Anthrax.

Small Ruminants



Sheep and goats are very important in Ghanaian farming systems, with almost every farm-household keeping some to supplement the family income. To supplement inadequate local supply, some sheep and goats are imported from neighbouring countries.

The production of mutton and goat meat has increased in recent years, reaching 12,300 metric tonnes and 11,550 metric tonnes respectively in 2000. About 80% of small ruminant farmers are small scale, employing mainly traditional technologies. Support will be given for the control of diseases such as Peste des Petitis Ruminants (PPR).

Emphasis will be put on the genetic improvement of the trypanotolerant Djallonke' sheep and West Africa Dwarf goat breeds. Crossing of the indigenous breeds of sheep and goats with Sahelian rams and bucks will be undertaken in the Savanna Zones for meat production.

Pigs



The importance of pork in Ghana is increasing, as manifested by the growing number of pork processors, who produce pork sausages, hams, bacon, pickled pork etc.

Whereas rural pig farmers rear mainly the local *Ashanti Black Forest Pig* (ABFP), commercial farms keep the exotic breeds such as the *Large White*, *Landrace* and the *Hampshire*.

The production of pork has stabilised in the last seven years

around 11,000 metric tonnes. Generally, most of the pig farmers are small and medium scale producers, with only about 5% being large scale[6].

Whereas commercial producers rely on prepared feed, house their animals properly and medicate their stocks for better performance, the backyard producers feed their stocks on waste from households and commercial food sellers.

The development of the pig industry will be supported through breed improvement through the supply of superior breeding stock to farmers. The improved stocks will be made available to farmers under the Closed Nucleus Breeding Scheme (CNBS).

Poultry



Eggs and poultry meat are important components of Ghanaian diets as a source of animal protein. The poultry industry also provides employment for a significant number of people. Even though a lot of poultry farms exist in the country, the broiler industry, in particular, is in decline.

Poultry farms can be found in almost every part of the country, with poultry meat production estimated at about 14,000 metric tonnes. Egg production is also estimated at 200 million per annum. Small, medium and large scale producers constitute about 60%, 30% and 10% respectively of poultry farmers in the country.

Rural poultry constitute about 80% of Ghana's poultry population. More support will be given for the production and nation-wide application of the 1-2 thermo-stable Newcastle disease vaccine for the control of Newcastle disease in rural poultry



Whilst the large scale producers employ higher technologies in the form of hatcheries, veterinary services and better marketing arrangements, the small scale farmers employ little or low technologies.

To develop the industry, efforts will be directed at promoting efficiency, modernisation and integration. Efforts will be made to reduce production costs of poultry farming, and to reduce the importation of all forms of poultry products. These efforts will be linked to increased maize and soybean production. The youth will also be encouraged to venture into poultry production.

Poultry production, particularly the broiler industry, is declining as costs of production in Ghana cannot compete with chicken parts imported from Europe, Brazil and the United States of America.

4.8 Fisheries

The fisheries sub-sector contributes 5% to the agricultural GDP and 3% to the national GDP. Fish is the major source of animal protein for Ghanaians. Per caput consumption of fish is about

[6] More than 100 animals

20kg representing 60% of all animal protein. However fish produced is for both the domestic and export markets. Traditionally about 80% of fish landed is processed mainly by smoking and salting (to a lesser extents). Freezing and canning are used mainly for export. The industry provides employment for over 500,000 fishers, traders and mechanics. In total industry supports up to 1.8 million people, about 10% of the Ghanaian population.

An estimated 190,000 fishers and fish farmers produce an estimated 400,000 metric tonnes of fish, with marine fisheries contributing about 340,000 metric tons, Volta Lake producing 59,000m tons and aquaculture contributing about1,000 metric tons. Annual national fish requirement is about 700,000 metric tons giving an annual deficit of about 300,000 metric tons. About 100,000metric tons of frozen fish are imported annually to supplement local production.



The fishing industry in Ghana is based on resources from the marine and to a lesser extent inland sector. The fisheries activity in the marine sector range from labour intensive and low technology artisanal to high technology industrial exploiting both pelagic and demersal fish resources within and beyond the EEZ (200 nautical miles). The Volta Lake, reservoirs and fish ponds are the main sources of inland fisheries.

Four categories of fleet exploiting the fishery are artisanal (canoe), inshore/semi industrial, deep-sea/industrial and tuna fleets.

The artisanal sector producers between 70% and 80% of the total annual marine catch and accounts for over 95% of the annual landings of about 250,000 metric tons of small pelegics. The main small pelagic species exploited and landed are sardinella, mackerels and anchovy.

The locally built wooden inshore fleet are used for purse seining during the sardinella season and trawling during the off season. This is a distressed sector exploiting mainly sardinella, mackerels and some demersal fish.

The imported steel deep-sea fleets do trawling and shrimping to land about 80% of the demersal species like sea bream, cuttlefish (cephalopods) and cassava fish. Shrimp production (mostly exported to Europe) has declined over the past few years. Some companies are converting their shrimp vessels into trawlers.

The tuna vessels land mainly skipjack, yellowfin and big eye. About 70% landed tuna is processed into loins or canned for export. Tuna discards are used to prepare fish meal and animal feed. The rest of landed tuna is sold at the local market. Estimated landings are about 80,000.

The policy for the fisheries sub-sector will aim at increasing fish production through proper management of the capture fisheries, utilising the catch responsibly by reducing post harvest losses and adding value to the fish to maximize profit.

The marine and inland canoe fishers who land the bulk of the fish will be protected especially within the Marine Inshore Exclusive Zone (IEZ), among others, by intensifying MCS activities on our water bodies through the establishment of the MCS Unit. This unit will ensure responsible fishing in our water bodies and reduce conflicts between the artisanal and industrial

fishers in our marine waters. The fish resources will be co-managed with the fishers at the community level through the strengthening of the Community Based Fisheries Management Committees (CBFMCs) that have been established. Marine and Volta Lake Fisheries Management Plans aimed at rebuilding fish stocks (that have been designed for the Ministry's approval) will be implemented to bring about sustainable exploitation of the fisheries resources with concomitant increases in fish catches.
All artisanal canoes have also been registered so as to effectively control their operation.

Cuttlefish, delicacy to local consumers and also high valued at the international trade market were highly exploited by the artisanal fishers but the trend has reversed with the industrial vessels exploiting and landing more than the canoes possibly because they are better equipped. The production level is about 2000 metric tons per annum. This can be increased to about 4,500 (if resource is properly managed) for the domestic and export market with the inshore fleet being supported to exploit it.

Tuna cab withstand some expansion. The processing facilities at the Pioneer Food Cannery (PFC) and Ghana Agro Food Company (GAFCO) are expanding and can handle most of the landings to meet the export requirement.

Aquaculture production, the vast water surface of medium sized reservoirs and the Volta Lake with numerous embayment offer excellent opportunities for pilot projects in cage fish culture to determine its feasibility in Ghana. The lagoons will be developed for brackish water aquaculture. Development of aquaculture through large-scale commercial culture and small-scale operations by integrating it into the farming system especially in irrigation schemes is being promoted.

Small-scale hatcheries are being developed by government in areas of high potential for aquaculture development to supply tilapia and catfish fingerlings to farmers in their respective catchment areas. These will eventually be handed over to the Fish Farmers Associations.

It is envisaged that production of tilapia and catfish from aquaculture will quadruple within the next three years.

5 IMPLEMENTATION OF THE POLICY

Introduction

The implementation of FASDEP will:

(a) ensure an efficient allocation of sector resources, donor assistance and rationalisation of the rather uncoordinated activities of operatives in the agricultural sector. It will provide a focus for policy and institutional reforms in the sector.

(b) strengthen the linkages between the different stakeholders, MOFA directorates and sub-vented agencies, other MDAs, District Assemblies, universities, research institutions, financial institutions, farmers, entrepreneurs NGOs and development partners.

Decentralisation

With decentralisation, the majority of MOFA staff, primarily district staff are expected to transfer to the - yet to be established - district local government service. They will become the emerging District Department of Agriculture. MOFA will retain responsibility for the design of national development policies and programmes for the sector. Staff at the regional and headquarters level will backstop the districts in performing their technical functions.

Inter-agency linkages

Frequent consultations and systematic coordination with major stakeholders will be ensured in view of the scope of the sector activities. This will prevent delays and duplication of efforts and ensure the efficient use of complementarities and synergies of the actions and activities of all stakeholders. The process will be supported by the creation of an inter-agency committee to include representatives of the private sector to act as a national agricultural advisory committee for the sector. The Committee will oversee resource allocations by rationalising programmes and expenditures ensuring that they address poverty reduction and environmental concerns in the sector.

Building institutional capacity

Various project appraisal documents noted in the past that one source of project risk is the non-performance of project implementing agencies. There is therefore the need to strengthen the capacity of these agencies. Measures for staff motivation will be designed. These will include appropriate job descriptions, setting of targets, and a reward system for high performance.

Support for Innovative Product Development

It is expected that the private sector will take a progressively increasing share of the tasks of identifying new technologies and extending them to farmers. Similarly, private traders will link farmers to output markets throughout Ghana and increasingly throughout the world. The expansion of private agricultural trade and industry are crucial to the success of this policy.

Monitoring and Evaluation



Weakness in monitoring and evaluation has hampered project management making assessment of project results difficult. To improve the situation, a monitoring and evaluation system is being set up to ensure that planned programmes are implemented effectively. This system will be linked to financial management and inform the budget and resource allocation process. The roles and responsibilities of stakeholders will be clearly defined at every stage. Training and equipment will be provided to implement the system.

Donor coordination

Weak donor coordination and coordination of programmes and projects has led to competition for scarce human resources, conflicting policies and duplication of efforts. As much as possible, a high degree of consensus will be sought and measures put in place to mainstream donor funded activities.

Sector-wide Approach

In implementing this policy, MOFA will adopt a sector-wide approach to ensure effective co-ordination and use of resources. Elements of this approach include:

- Providing overall leadership and direction in the agricultural sector;
- Establishing an institutional set up that will enable MOFA to provide it's services efficiently;
- Developing policies and programmes of the sector into coherent sector plans through joint planning, programming, reviews and information sharing processes;
- Harmonising procurement, accounting and reporting systems that should satisfy all partners;
- Encouraging all development partners to field joint implementation support and program evaluation missions; and

Planning and Financial Management

MOFA's plans and budgets will be prepared in line with the planning procedures set out in the Medium Term Expenditure Framework (MTEF). These include:



- preparation of three-year strategic plan;
- annual review of strategic plan;
- annual reviews of the policy and expenditure priorities based on effective monitoring and evaluation results;

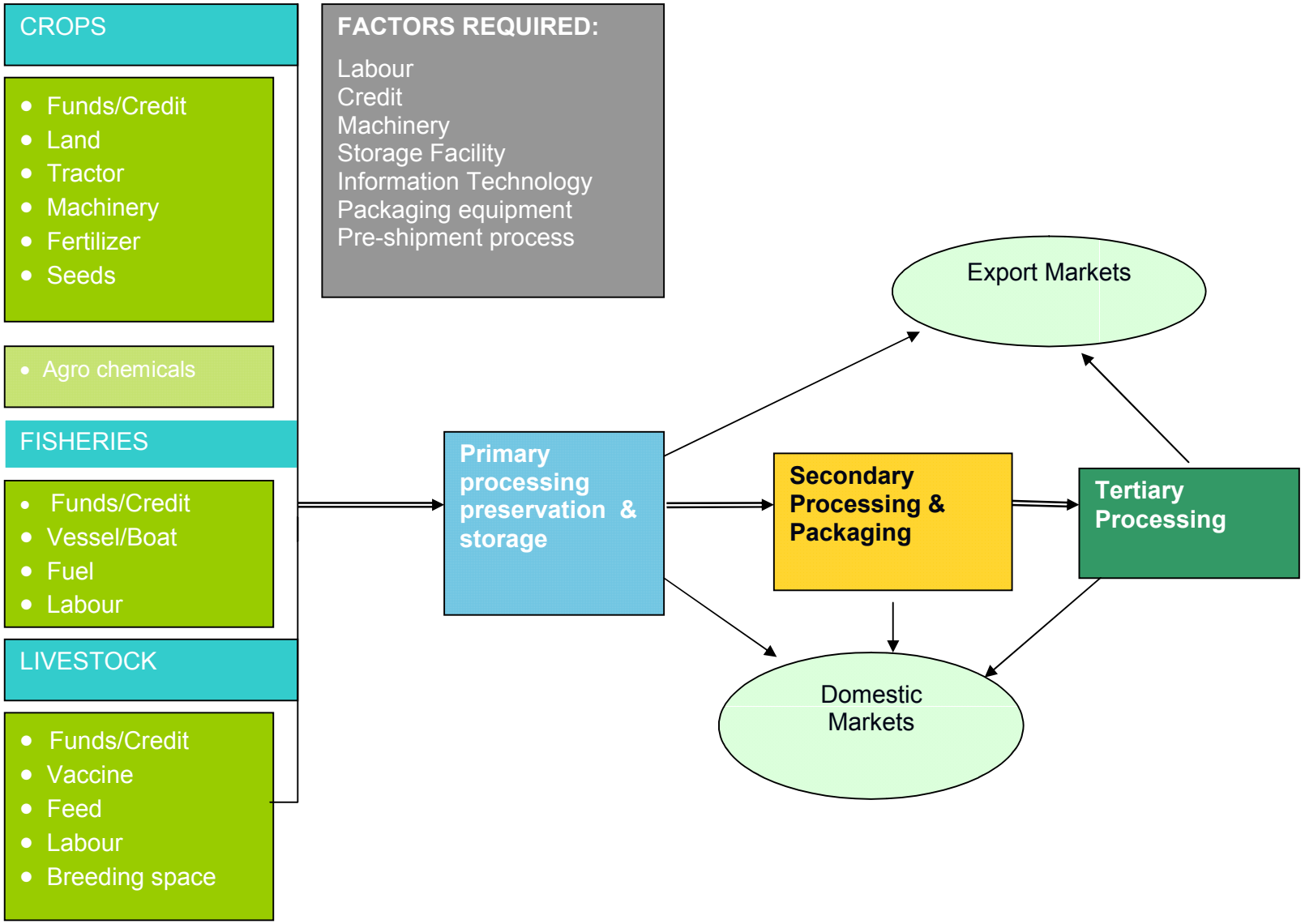
- participation in cross-sectoral meetings and policy hearings; and
- yearly preparation, review and updates of budgets.

With this, the Ministry for Food and Agriculture is confident to achieve it's mission and objectives for the benefit of the Ghanaian economy.

Appendix A: The Meaning of Food Security

FOOD SECURITY	REQUIREMENTS	PRODUCTION FACTORS	RESPONSIBILITIES
Good Quality nutritious food	Production Harvest Transport Primary processing Storage Haulage Availability of land Market location Secondary processing	Credit Land-preparation & inputs Appropriate implements Farm tracks, Feeder roads Haulage trucks/vehicles Processing equipment Storage facility-cold stores, Silos, warehouses Packaging facilities &Tech	Financial institutions MoFA Researchers-MES Private sector, NGOs MORT MOLGRD MOH MOTI MOCT
Hygienically packaged & attractively presented	Primary, secondary and tertiary processing	Credits Technology Packaging facilities	Financial institutions Private sector, NGOs, Research, MOH/ Food & Drugs Board
Available in sufficient quantity all year round (with national buffer stock)	Primary and secondary Processing Storage Packaging	Credit Processing equipment Storage facilities Technology Packaging	Financial institutions Private sector, NGOs Researchers MES/MoFA /MOTI
Located at the right places	Marketing	Credit /Haulage Good roads/rail/water Transport system Market information	Financial institutions MORT/MOCT Credit houses MOH/MOTI
At affordable prices	Harvest System Haulage Storage/Processing Packaging/Presentation	Credit Weights & measures Good road/rail Water, transport system	Financial institutions Standard board MORT/MOCT/MOTI MoFA

Appendix B: Agribusiness and Industry Chain



Appendix C: Agricultural Processing and Relative Value Addition Module - An Illustration

Raw material	**Primary processing**	**Secondary Processing**	**Tertiary processing**
Characteristics	Preservation Low capital investment	Specific processing High capital investment	Speciality (food/goods) High capital investment
Cocoa	Cocoa beans By-products Animal Feed Fertilizer	Butter Cake Cocoa Powder Shells Liquor	Chocolate & Confectionaries Cosmetics Liquor
Cashew Sunflower Oil Palm Groundnut Soybean Cotton	Oil seeds By-products Animal Feed Fertilizer	Crude vegetable oil Soap stock Cake By-products Animal Feed Fertilizer	Chocolates Cosmetics Liquor Other Chocolate Products
Cassava Sweet Potato Yam	Chips Starch By-products Animal Feed Fertilizer	Flour Modified Starch By-products Animal Feed Fertilizer	Pharmaceuticals Baby food Starch Animal Feed
Fruits	Fruit juice Concentrates By-products Animal Feed Fertilizer	Concentrates Cakes By-products Animal Feed Fertilizer	Canned fruits &Juice Sliced fruits Jam/Marmalade Pharmaceuticals

HIGH

LOW — **Level of Processing & Value Added** — HIGH

Appendix D: Supply Chain Management

