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**AGRICULTURAL DEVELOPMENT
AND FOOD SECURITY IN
SUB-SAHARAN AFRICA (SSA)**

Building a Case for more Public Support

The Case of Kenya

A Paper Prepared for the

**Policy Assistance Unit of the
FAO Subregional Office for
East and Southern Africa**

BY

Kang'ethe W. Gitu

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ACRONYMS

ACP-EU:	African Caribbean and Pacific-European Union Partnership
AFC:	Agriculture Finance Corporation
AGOA:	African Growth and Opportunities Act
AI:	Artificial Insemination
AIA:	Appropriation In Aid
AIE:	Authority to Incur Expenditure
AoA:	Agreement on Agriculture
ARD:	Agriculture and Rural Development
ASAL:	Arid and Semi Arid Land
BMD:	Budget Management Department
CBO:	Community Based Organization
COMESA:	Common Market for Eastern and Southern African Countries
EAC:	East African Community
EEC:	European Economic Community
EPC:	Export Promotion Council
EPZ:	Export Processing Zone
EU:	European Union
FAO:	Food Agriculture Organization
FAOSTAT:	Food Agriculture Organization Statistics
GDP:	Gross Domestic Product
GFCF:	Gross Fixed Capital Formation
Gm:	Grams
GMR:	Guaranteed Minimum Return
GoK:	Government of Kenya
Ha:	Hectares
HCDA:	Horticulture Crop Development Authority
HIV/AIDS:	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IDEAA:	Initiative for Development of African Agriculture
IGAD:	Inter-Governmental Authority on Development
IMF:	International Monetary Fund
K£:	Kenya Pound
KEAS:	Kenya Exporter Assistance Scheme
KEPHIS:	Kenya Plant Health Inspectorate Services
KETRI:	Kenya Trypanomiasis Research Institute
KEVEVAPI:	Kenya Veterinary Vaccine Production Institute
KFMP:	Kenya Forestry Master Plan
Kg:	Kilogram
KRDS:	Kenya Rural Development Strategy
KSA:	Kenya Sugar Authority
Kshs:	Kenya Shillings
KTDA:	Kenya Tea Development Agency
MoA:	Ministry of Agriculture
MoCDM:	Ministry of Cooperative Development and Marketing
MoLFD:	Ministry of Livestock and Fisheries Development

MRL:	Maximum Residue Level
MT:	Metric Tonnes
MUB:	Manufacturing Under Bond
NCPD:	National Cereals and Produce Board
NGO:	Non-Governmental Organization
NIB:	National Irrigation Board
OPEC:	Organization of Petroleum Exporting Countries
PBK:	Pyrethrum Board of Kenya
PRSP:	Poverty Reduction Strategy Paper
SDT:	Special and Differential Treatment
SPS:	Sanitary and Phytosanitary services
SRA:	Strategy for Revitalizing Agriculture
TBK:	Tea Board of Kenya
US \$:	United States Dollar
USA:	United States of America
USAID:	United States of America International Development
VAT:	Value Added Tax
WTO:	World Trade Organization
YR:	Year

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FOREWORD

It has been the case that most African Governments have been taxing farmers and subsidizing urban consumers, while at the same time doing very little in terms of policy and investment to favour the rural sector. The ratio of investment to GDP in most Sub-Saharan Africa (SSA) has been well below the ratios attained in Latin America and Asia. Similarly, Africa's private sector investment in agriculture has been curtailed by a combination of financial capacity, and lack of security, financial services and regulatory framework.

However, Africa needs to investment more and encourage increased private sector investment - both domestic and external - to ensure agriculture based economic growth and sustain it. This notion seems to have been understood by African Governments when the Heads of State and Governments have, in approving the New Economic Partnership for Africa's Development (NEPAD) Comprehensive Africa Agriculture Development Programme (CAADP) at their Summit in Maputo in 2003, committed themselves to increase resource allocation to agriculture to 10 percent of the national budget by 2008. In this context, the Policy Assistance Unit (SAFP) of the FAO Subregional Office for East and Southern Africa, in collaboration with the Agriculture Policy Support Service (TCAS) of the FAO Policy Assistance Division (TCA) embarked in 2004 on a study to analyze the status of food security and agricultural development.

Implementing the Maputo commitment of budgetary increase is however likely to be difficult in view of resource constraints of counties against daunting challenges, especially in the public service sectors. One of the main objectives of the study was therefore to provide objective rationale why agriculture should be supported in the African context.

The study had four components: (a) preparation of 10 country studies representing Central, East, West and Southern Africa, (b) preparation of a background document that looks into the conceptual issues and development paradigms and the prioritization of agriculture, review of relevant lessons from developed and developing countries who have successfully eliminated food insecurity, (c) organization of high-level workshop to discuss the findings of the study and (d) preparation of a report based on the above as well as extensive desk based research by Senior FAO Officers. The paper represents one of 10 case studies.

EXECUTIVE SUMMARY

This paper has been prepared with the main objective of building a case for more support to agricultural production and food security in Kenya. It is presented in five chapters and highlights the pattern of meeting domestic food requirements from domestic production, as well as food aid and commercial food imports. The issues discussed include a description and analysis of food security in Kenya, support for agriculture, the impact of food imports and aid and making Kenya food secure on a sustainable basis.

Kenya, like other developing countries, is faced with hunger and poverty and these problems are rapidly worsening. A number of factors contribute to this situation but poor agricultural performance lies at the heart of the problem. Despite the importance of the agriculture sector in its contribution to employment, government revenue, GDP and raw materials for the industrial sector, its performance has been poor. This is attributable to misallocation and underinvestment in the sector, disengagement of government support to agriculture, poor infrastructure, limited access to credit, the high cost of farm inputs, and the lack of a land policy and framework, among other things. The current and the previous governments have been accused of underinvesting in agriculture and food production, especially after the advent of economic liberalization. The accusations include failure to promote and enhance important ingredients for agricultural development, such as rural infrastructure and services, and agriculture research and extension. Kenya's decreasing support to agriculture has resulted in an increasing dependence on food imports and food aid. The per capita supply of main staples has been declining since the early 1980s. While it is accepted that Kenya is food-insecure, there is a general consensus that it has the potential to produce more than its food needs. The goal of the Government has been to attain self-sufficiency in meeting food needs in addition to the expansion of exports.

The policy on agriculture has been to pursue the goal of attaining self-sufficiency in key food commodities that include maize, wheat, rice, milk and meat. While this has been the objective, it was only ever attained in the 1970s, when maize production was so high that some was exported. In 1986, there was a shift from a food sufficiency goal to an outward strategy, which identified seven commodities that form the core of the current food and agricultural policy – maize, wheat, meat, milk and horticulture crops for both home consumption and export, and coffee and tea for raising farm income and earning foreign exchange.

In 2000, the food available for Kenyans was 1 965 calories per capita, per day, which was below the recommended 2 250 calories per day. The source of calories comes mainly from maize, which accounts for 36 percent, while sugar, wheat, palm oil, and milk together account for the remaining 64 percent. Food availability has been declining, largely because maize production was down by 44 percent on a per capita basis in 2000, compared with 30 years before. The per capita food decline has occurred because local staple food production has been outstripped by a relatively high rate of population growth and increased life expectancy. Chronic undernutrition is the most common form of malnutrition and is mainly associated with insufficient dietary intake, because households lack enough income to secure their basic food requirements.

The major cereals produced are maize, wheat and, to a limited extent, rice. Other food crops produced include the traditional ones like sorghum, millet, cassava, vegetables, and fruits. However, the production cost of these crops is high because of low levels of mechanization, escalated input costs, inefficient production methods, and the high transport costs occasioned by poor infrastructure. Kenya has not been able to produce enough for her food needs and, as a way of meeting the food deficiency, has increasingly depended on food imports or aid, which contradicts the policy of self-sufficiency. Among the imported food items are wheat, rice, maize, powdered milk and sugar.

Kenya has been food-insecure for a long time in both urban and rural areas, as well as in both high potential and arid and semi-arid lands (ASAL). Food insecurity has been viewed as a prevailing situation, in which not all can have a fair share of the food available or produced. The food insecurity can be attributed to many factors, including decline in agriculture productivity, climatic changes, inefficient food distribution systems,

HIV and AIDS, and land fragmentation. The food available per capita has declined, despite the success in expansion of export crops. Chronic malnutrition, associated with insufficient dietary intake, occurs because of households' lack of income to secure basic food requirements and is, paradoxically, most serious in high and medium agricultural potential areas because of the high population density and small size of farms.

The intensity and prevalence of poverty in Kenya varies across regions, with 56 percent of the total population living below the poverty line. The poverty levels are in both urban and rural areas and are closely connected to agriculture and the dependence on land as a means of generating income. The ASAL areas in Coast, North Eastern and Eastern Provinces and the densely populated areas of Western, Nyanza, Rift Valley and Central Provinces have the highest levels of poverty. The contributing factors to poverty include unemployment and low wages, low agricultural productivity and poor marketing, lack of access to productive assets, particularly land, poor infrastructure, high cost of social services, bad governance, and HIV and AIDS.

The food insecurity also occurs in high potential areas, caused by the combination of lack of information and failed infrastructure. The Ministry of Agriculture has developed a special programme for food security to facilitate a national early warning system and food distribution system, and maintain a national strategic reserve, while encouraging the private sector to get involved in the international grain trade through a more predictable policy and tariff regime. The programme aims to reduce the number of food-insecure people by half. The programme is participatory, i.e. the districts prioritize their own food production activities. Under this programme, the Ministry has conducted sensitization workshops for key stakeholders at national, provincial and district levels.

The importance of the agriculture sector in Kenya remains unchallenged. The sector employs about 75 percent of the country's labour force, provides raw materials for the agro-based manufacturing industries and accounts for 45 percent of government revenue. The fisheries subsector contributes about 3 percent of GDP and 3 percent of total export earnings. The agriculture sector is dominated by primary production of a few commodities, namely cereals (maize, wheat and rice), traditional food crops, industrial crops, export crops and livestock (beef, dairy, poultry and eggs, pigs and small stock). Smallholder farms account for over 65 percent of the total agricultural output, while pastoralism is the main form of production in the ASAL areas.

There exists a close correlation between the growth of agriculture and that of other sectors of the economy, with the result that the performance of agriculture affects the entire economy. A number of factors have been associated with the mixed trend in production, which includes area expansion or contraction, and climatic, technological and price changes. The major factor, however, has been policy. The trend has been a general increase in the area under food and cash crops while there has been a decline in the area under industrial crops. In addition to these trends in the area under the crops, there have been changes in yields, notably stagnation or decline in yields per hectare under the respective crops. The production of livestock and livestock products has been affected by inefficient disease control, which has hampered exports of livestock products, especially beef.

The greatest challenges facing the agricultural sector are the worsening poverty levels, the declining financial and natural resource base, the HIV and AIDS pandemic, insecurity and competition in the world market. Kenya has to increase agricultural exports by diversifying to a greater range of agricultural export crops. There are both economic and non-economic constraints affecting Kenya's agriculture and food sector. These include institutional weaknesses, collapsed infrastructure, lack of effective land policy, poor research and extension linkages, increased prevalence of HIV and AIDS and other diseases, and poor agrarian leadership. Kenyan agriculture is predominantly rainfed and the production is, therefore, heavily influenced by the variability of rainfall. High taxation, especially on inputs including machinery, fuel, fertilizers and spare parts, makes Kenyan agriculture less competitive than it could be. Other constraints include lack of storage and post-harvest technologies, poor marketing information and lack of capacity in the private sector institutions that should promote policy formulation, implementation and monitoring. Strong credit and marketing institutions that supported agriculture existed in the first decade of independence. These included

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the Agriculture Finance Institution for credit, and the National Cereals and Produce Board (NCPB), the Kenya Meat Commission, Kenya Cooperative Creameries and Kenya Sugar Authority, for marketing of maize, wheat and other cereals, meat, milk and sugar respectively. While these institutions functioned well in the first two decades, they fail to provide adequate services to farmers today for diverse reasons. The Government needs to increase productivity through the removal of constraints in agriculture for the economy to grow speedily. Among the constraints to be removed are poor agrarian leadership, lack of capital, dependence on rainfed agriculture, globalization, a narrow range of primary agricultural products for exports, lack of an effective land policy, low political support, high taxation, poor research and extension linkages, HIV and AIDS infections, poor integration and coordination of activities by major agricultural stakeholders, and high input costs.

Government policy, as stated in a number of policy papers, emphasizes self-sufficiency in domestic production of food crops as well as the generation of foreign exchange as a means of achieving food security. It has been established that, given adequate support and non-interference in the production and marketing of the various crops, Kenya is capable of increasing both production and productivity in agriculture, as has been demonstrated by the remarkable success in the tea, horticulture and dairy subsectors. The success in these subsectors is attributable to a combination of factors, including favourable weather conditions, emerging market opportunities, government sponsored credit schemes, research, extension services, training and monitoring. Kenya is the third largest tea producer in the world, after India and Sri-Lanka, while expansion of the horticulture and dairy subsectors has created both employment and income in the rural areas.

The combination of government assistance and restraint from interference in the industry helped in the rapid expansion of these subsectors. The measures adopted by the Government in the first two decades after independence, which covered monetary, fiscal, exchange rate and trade policies, and appropriate budgetary allocations, had a profound impact on the profitability of the agriculture sector and the welfare of farmers. The involvement of the Government was viewed as the prime mover in the growth of the rural economy and agriculture in particular. A reversal of this thinking saw the beginning of liberalization in the third decade of independence, at which time government involvement came to be seen as having a negative impact on agriculture. The new thinking saw the Government reduce its investment support to the sector and the start of the structural adjustment programme (SAP).

The liberalization measures were expected to bring about faster growth and ensure food availability to all people, at all times. These expectations, however, were not realized because the liberalization was fast, broad and far-reaching, poorly sequenced and not synchronized with other policies. It was characterized by policy instability, which reduced investor confidence, and poor harmonization and coordination in the implementation of the policies. There is, therefore, a need to rethink and make a shift in development paradigm and policy-making in agriculture development and food security strategies if Kenya is to reverse the declining trends in agricultural output and productivity.

The Government should increase the budgetary allocation to agriculture in view of its contribution to the economy and its multiplier effect as compared to other sectors. The current allocation is in comparison to the allocations to education and health. For example, between 1980 and 2000, budget allocation to agriculture averaged only 6.6 percent, compared to education and health at 15 percent and 12.6 percent respectively. In the first decade after independence, agriculture was allocated over 10 percent of the total budget, which is the reason for the high productivity in those years. The allocation to agriculture has gone to recurrent expenditure, which is dominated by salaries. There has, however, been an increased allocation of development expenditure on support services, such as market research and seed inspection, as opposed to direct domestic production support measures, such as artificial insemination (AI), tractor hire, aerial spraying, veterinary services and farm planning, which are allowed under the Special and Differential Treatment (SDT) clause of the WTO Agreement on Agriculture (AoA).

Recognizing the poor performance of the sector, Government has put in place a number of development strategies and programmes that will influence the level and stability of input and output prices, private investment, costs and revenues, and allocation of research and development funds to improve farming and agriculture-related processing technologies. Some of these policies are specially designed to influence the productivity and the marketing of specific crops. The policies have the potential to further influence investment decisions in the provision of research and development, education, health, transport, marketing infrastructure and institutions that have a broad impact on agriculture sector productivity. A number of policy documents have been prepared in this regard. These include the Poverty Reduction Strategy Paper (PRSP) 2004, The Economic Recovery Strategy for Wealth and Employment Creation, The Ministry of Livestock and Fisheries Development Strategy 2003–2007, The National Development Plan and The Kenya Rural Development Strategy 2002–2017.

Section 4 analyses the various impacts of food imports and food aid. As a result of the poor performance in agricultural production and productivity, Kenya has relied on food imports and food aid. Food imports have both positive and negative impacts on various economic and social aspects of development, including food security and nutrition, prices and domestic production, budgetary support, counterpart funds, the budget, foreign exchange and balance of payments (BOP), and transaction costs. It has been an important means of transitory food security for vulnerable groups, especially in the ASAL areas where droughts and crop failure have been frequent. It is also a source of human capital formation, which in turn could improve agricultural production. Food imports have been shown to reduce food prices, but also to stifle domestic food production as the imported foodstuffs enter the country at low prices. The imports are mainly from producer countries that subsidize their farmers, making their exports cheaper than the production cost of the recipient country. As a result, local farmers and workers are left without a source of income.

The imports also distort the labour markets, especially in countries like Kenya, which are dependent on agriculture for employment creation. The importing countries have used the counterpart funds for budgetary support through the sale of the imported/aid food. One of the results of this is that the countries have opted not to develop their agriculture sector because they know they will get some budgetary support. Food aid substitutes for commercial food imports, thereby providing a net foreign exchange transfer which could be used for capital development through the utilization of counterpart fund generated from the local sale of the food aid. The capital development could include infrastructure, agricultural research and extension of rural health and education facilities. The food imports could result in releasing the land under food production for cash crops, which is a worthy venture for developing countries like Kenya.

The food aid commodities are often viewed by consumers in recipient countries as being inferior to those domestically produced. Nevertheless, food imports have been shown to reduce domestic food prices, creating a disincentive to farmers and hence reduction in food production. The cheap imports shift demand towards themselves and, over time, tastes and preferences change as people get used to imported foods. The volume of imported food items has been growing rapidly. This trend is dangerous especially in drought years, considering that Kenya is dependant on agricultural exports to finance its imports. It would be better if the foreign exchange being used to import food were used in building the institutional and technological capacity of food producers. Food aid makes people lazy about producing for their own consumption needs, since they keep postponing the production decision-making process in order to benefit from the free food.

Section 5 looks at ways of making Kenya food secure on a sustainable basis through macroeconomic and regulatory measures, development of infrastructure, rural financial credit facilities, agricultural research and extension services, human resource development and activity-specific strategies. It also looks at the investment programme required to revitalize the food and agriculture sector and proposes an implementation budget. At the microeconomic and regulatory level, there was an impressive performance by the agriculture sector immediately after independence, which was attributable to a combination of factors including stable fiscal and monetary policies, the maintenance of good macroeconomic management and the possibility of expansion of land under cultivation. This good performance has, however, declined and it is necessary to put

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in place strategies that will revitalize the sector. Some of the strategies could include diversifying the agriculture sector, restoring support for extension services and maintaining a realistic exchange rate.

The development of infrastructure is vital for agricultural development. There is, therefore, a need to rehabilitate and expand rural infrastructure, especially roads, provide electricity to the market centres, construct new and maintain existing water supplies and dams, and rehabilitate or construct cooling facilities and irrigation schemes. Rural financial and credit facilities should be enhanced to improve production and productivity. Management of agricultural cooperative societies should be streamlined, while incentives should be given to those offering credit in the agriculture sector, particularly for small-scale producers. This support should include reduction of taxes or an insurance scheme to cover the borrowers. A National Research Extension Advisory Board should be established to coordinate the linkages between research and extension. The need for human resource development cannot be overemphasized, as the agriculture sector is labour intensive. To improve the human resource base, it is necessary to: upgrade the capacities of agriculture training institutes; evaluate the needs of the agriculture sector and tailor training to meet those needs; streamline the legal and regulatory framework to meet the human resource needs; and strengthen the linkages between the College of Veterinary Medicine, Faculty of Agriculture and the Government ministries concerned with issues of agriculture.

The study has identified a number of constraints that need to be addressed if Kenya is to cease to be dependent on food imports and food aid dependent. A summary of the constraints and proposed specific strategies and measures to promote production and productivity is shown in Table 48. An investment programme to implement the strategies is shown in Table 49 and emphasizes the constraints of physical infrastructure development, financial services, human resource development, research and extension, information, legal and regulatory framework, food security strategy, production and export strategy, agriculture subsidy and land policy. The programme would be for a duration of five years and would cost approximately US\$ 1 650 million. The expected impact of the support measures would include increased product competitiveness, expansion of markets, creation of jobs, high investment and savings, increased foreign exchange earnings, reduced food insecurity, reduction in poverty levels, increased GDP contribution, and less reliance on food imports and aid. The recommended strategies and measures have been proposed after taking the WTO's AOA into account and are, therefore, compatible with the Agreement and have no distorting effects, as defined under its 'Green Box' or *de minimis* provisions or the SDT allowance. The Government ought to support the implementation of the Sanitary and Phytosanitary requirements under the AoA, put up support measures for enhancing external competitiveness, invoke the Green Box provision of the Agreement to support the competitiveness of the export sector through freight and local transport subsidies, in addition to putting in place export subsidies for strategic commodities and raising tariffs to protect the local industry.

CHAPTER 1: INTRODUCTION AND BACKGROUND

Kenya like other African countries is faced with hunger and poverty and these problems are becoming worse. It is estimated that more than 14.3 million people, or 52.3 percent of the population, live below the poverty line.¹ About 52.9 percent of the population in the rural areas and about 34.8 percent of those in the urban areas are poor. It is also estimated that about 34.8 percent of the rural population and 7.6 percent of the urban population live in extreme poverty, i.e. they cannot meet their food needs, even with their entire resources devoted to food.

Although a number of development problems have been identified as causing poverty, including lack of education, prevalence of sickness, declining level of school attendance, inadequate access to land and capital, and vulnerability (women), the poor performance of the agriculture sector lies at the heart of the problem. Agriculture accounts for 70 percent of the labour force, 25 percent of the total GDP, 60 percent of export earnings, 75 percent of raw materials for the industrial sector and 45 percent of government revenue. Even with a relatively liberalized agriculture sector, recent statistics indicate that Kenya's agricultural production and productivity remain inadequate and have not made any progress on the food security front. Yields have not improved and, consequently, Kenya remains food-insecure and is increasingly reliant on emergency food supplies and commercial food imports for a significant portion of the country's domestic food requirements.

Despite the importance of the agriculture sector, its full potential has not been realized. The sector offers opportunities for economic growth, both in the medium and high-potential, as well as the ASAL areas. In particular, the livestock industry offers vast opportunities for economic growth especially in ASAL areas, which have over 50 percent of the livestock. A number of root causes have been suggested for the poor agricultural performance, including misallocation and underinvestment in agriculture, disengagement of Government from support to agriculture, poor infrastructure, limited access to credit, and the high cost of farm inputs. The sector is also subject to lags in the policy and legal framework, which are not in line with a liberalized economy.

The current and previous governments have been accused of neglecting agriculture and food production, especially after the advent of the SAP. Kenya has invested very little in promotion and enhancement of the important ingredients for agricultural development, including rural infrastructure and services, agricultural research and extension, and in the institutions that shape the governance of agriculture. Kenya has overtaxed farmers and subsidized urban consumers, while, at the same time, underinvesting in the rural areas. The growth of the nation's capital stock fell to 2.7 percent in the 1980s, compared with an average of 7.1 percent in the 1970s. By the early 1990s, the growth of gross investment was just sufficient to maintain capital stock at a constant level. Gross fixed capital formation (GFCF) remained low, at an annual average of 17 percent of GDP in the 1990s, compared to 31 percent and 21 percent in the 1970s and 1980s, respectively. If Kenya is to achieve sustainable levels of development, an increase in both investment and savings will be required and the level of investment should be in the region of 25 to 30 percent of GDP (GoK, 1997).

Kenya's decreasing level of support to agriculture is correlated to increasing dependence on food imports and food aid. This is despite the fact that Kenya has the capacity to produce enough to meet its food needs. Kenya is becoming increasingly dependant on commercial food imports. Per capita supply of the main staples has been declining since the early 1980s, and per capita supply of cereals, which provide most of the calories, declined from 140.9 kg per year between 1979 and 1981, to 115.7 kg per year in the 1992 to 1994 period. The food production and demand projections indicate that Kenya will continue to experience serious food deficits unless greater efforts are made to address the food security situation. The debate increases, of course, as to

¹ 'Poverty line' is an arbitrary, international real income measure usually expressed in constant dollars (e.g. \$ 270), used as a basis for estimating the proportion of the world's population that exists at a bare subsistence level.

whether these food requirements are better met through increased financial aid, rather than food aid. Thus it is worth asking whether food import and aid flows can make a positive contribution to agricultural development in Kenya.

One of the main defences of food aid has been that it is more likely to succeed in reaching the very poor and food-insecure segment of the population. This argument, however, concentrates on the immediate effects and does not consider the long-term disincentive effects on local production, prices, market, employment and allocation of scarce foreign exchange. As one can see from the arguments, food imports and aid are a complex topic and the effects on agriculture are not yet clear. Evidence for or against the impacts of food imports or aid on agriculture sector development is uneven and inconclusive. Unless these effects are assessed and quantified, it is difficult to give conclusive policy advice regarding this issue.

Despite the fact that Kenya is food-insecure, there is a general consensus that it can feed itself. However, even if it has the potential to produce more than its food needs, it has implicitly adopted strategies of increasingly relying on commercial imports and food aid, to the extent that it has become perpetually dependant on these means of acquisition. Parallel to this is the observed trend of low and declining levels of support to the agriculture and food sector.

1.1 Data and methodology

The study utilizes time series trend analysis. The time period varies according to the available data. The focus has been primarily national but, where data allow, household, district and regional (provincial) data have been used.

1.2 Study structure

The paper is presented in five further sections. Section 2 describes Kenya's food supply and demand as well as the nutritional needs. Other features of this section include an analysis of the structure and trend of food imports in terms of food aid vs. commercial imports and type of food imports, and domestic food requirements from commercial imports in terms of provision of foreign exchange and logistics, and transaction costs of food imports and aid. Section 3 provides:

- An overview of the importance of agriculture to the economy;
- Discussion of the challenges, constraints and opportunities for improved agricultural development;
- An analysis of the evolution and trends in public support provided to the development of the food and agriculture sector; and
- A comparative analysis of expenditure allocated to agriculture relative to that allocated to the education and health sectors.

Section 4 presents an assessment of the impacts of food import and aid dependence, focusing on the impacts on, food security and nutrition, domestic food production, prices and domestic production, outcomes of budgetary support, effects of delayed arrival, budget, foreign exchange and BOP, and human and psychological impact. Section 5 identifies promising agricultural development opportunities, including food and cash crops, livestock, fisheries and forestry, as well as the policy orientation and investment requirements to realize the identified opportunities. Other issues discussed in this section include:

- An analysis of the external environment affecting domestic agricultural development and suggested strategies to improve the country's competitiveness in the external market;
- An evaluation of the implications of the terms of the WTO AoA and, in particular, whether the suggested measures are compatible with the requirements stipulated for SDT, Green Box and *de minimis* exemptions;
- Estimation of the cost and the expected budgetary allocation for proposed strategies and assessment of the country's capacity to meet the budgetary outlay from its own resources and/or external development assistance;

Building a Case for More Public Support

- An indication of the returns to investment in terms of increased domestic production, decreased commercial imports, foreign exchange generation or savings, increased household food security and income; and
- Supporting measures.

Section 6 provides conclusions and recommendations.

CHAPTER 2: DESCRIPTIONS AND ANALYSIS OF FOOD SECURITY IN KENYA

2.1 Food Supply and Demand

Food security is defined as, “Access by all people at all times to enough food for an active healthy life” (Ellis, 1992). The World Food Summit in 1996 reaffirmed that food security can only exist 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. At the macro level, it implies that adequate supplies of food are available through domestic production or through imports to meet the consumption needs of all people in a country. At the micro level (household or individual), food security depends on a number of factors which are related, for the most part, to various forms of entitlements to income and food producing assets, as well as the links between domestic and external markets and the transmission effects, from the latter, on small, low-income and resource-poor producers and consumers. Food security is not just a supply issue but also a function of income and purchasing power, hence its strong relationship to poverty.

Kenya, for a long period, pursued the goal of attaining self-sufficiency in key food commodities that included maize, wheat, rice, milk and meat. Self-sufficiency in maize was achieved in a very few years during the 1970s when production was so high that some was exported. Unfortunately, attainment of self-sufficiency did not automatically imply that household food security was achieved. Evidence shows that solving the food security issue from the production (supply-side) point of view, while overlooking the demand side, does not solve the food security problem, particularly the access of vulnerable groups to sufficient food.

In 1986, Kenya shifted from a food self sufficiency goal to an outward strategy by identifying seven commodities that form the core of its current food and agricultural policy. These are maize, wheat, meat, milk and horticultural crops for both home consumption and export markets, and coffee and tea for raising farm income and earning foreign exchange. The strategy aimed to achieve multiple objectives, including family and national food security, foreign exchange earnings, government revenue, employment, regional balance and generation of new income streams for rural people (GoK, 1986; Eicher, 1988). This strategy continues to be valid. It can thus be concluded that self-sufficiency and expansion of exports are the main objectives of the Government in the agriculture sector.

On average, 30 percent of the food consumed by rural households is purchased, while 70 percent is derived from own-production. On the other hand, 98 percent of the food consumed in urban areas is purchased while about 2 percent is own-production. The main sources of farm incomes are the crops and livestock products that are sold by households. About 50 percent of the rural farming households are involved in off-farm income-generating activities and about 36 percent have at least one salary earner living away from the farm (GoK, 2002). Furthermore, a third of the households receive remittances. Most rural people depend on non-farm activities for a significant portion of their incomes. An average of 30 percent of rural household incomes is derived from farm activities, while 70 percent is derived from off-farm sources, which includes remittances. However, these ratios vary from region to region, with farm incomes forming a low proportion (18 percent) in Eastern Province and a high proportion (60 percent) for Rift Valley Province.

2.1.1 Food supply

Food available to Kenyans was 1 965 calories per capita, per day in 2000,² 13 percent below the recommended 2 250 calories per day. The calories come from a wide variety of sources but are dominated by

² FAOSTAT Food Balance Sheet <http://atps.fao.org>.

maize, which accounts for 36 percent, and sugar, wheat, palm oil and milk that together constitute 64 percent of total calories (Table 28).

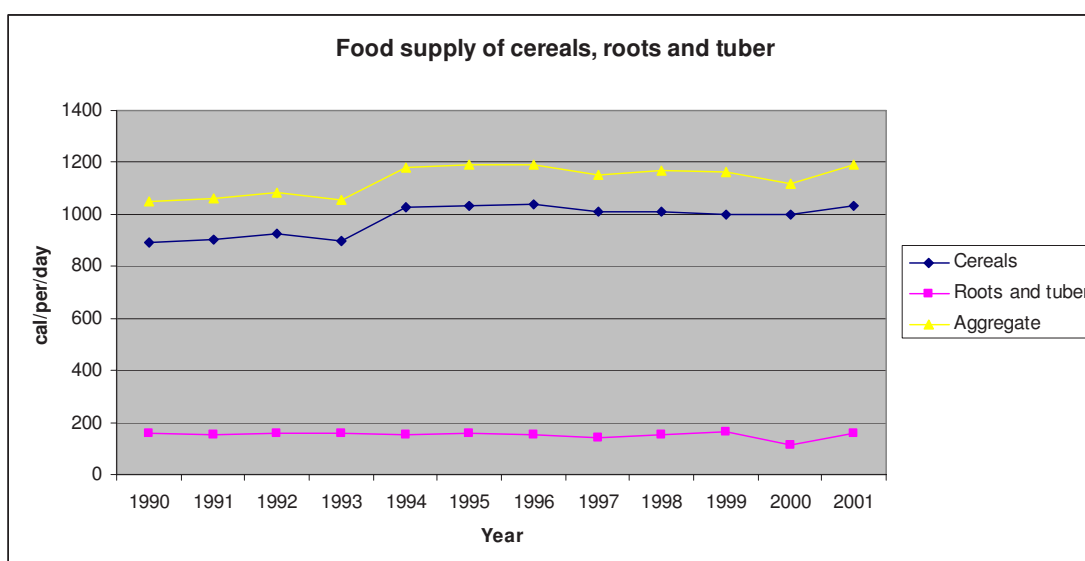
Table 2.1 Per capita, per day food and nutrient availability

	Total calories	Protein (gm)	Veg. protein	Fat (gm)	Vegetable fat	Source of Vegetable Fat	
						Palm oil	Maize
1970	2 211	64.9	50.1	34.0	20.3	1.2	10.9
1980	2 185	57.4	42.3	41.7	27.5	10.0	10.6
1990	1 889	51.5	32.8	45.1	27.9	14.5	7.8
2000	1 965	50.5	35.3	46.9	32.3	16.9	7.6

Source: FAOSTAT Food Balance Sheet, <http://www.fao.org>

Per capita supply of cereals increased in the early 1990s but tended to decline after 1994. The supply of cheaper traditional crops, i.e. roots and tubers, not only remained low (below 200 calories per day) but also tended to decline throughout the 1990s (Figure 12).

Figure 1.1: Food supply of cereals, roots and tuber (Cal/ per/ day)



2.1.2 Sources of available food

Per capita food availability has been declining in Kenya, largely because maize production was down by 44 percent on a per capita basis in 2000, compared with 30 years before. As shown in Table 29, maize production fell from 129 kg per capita in 1970 to an average of 77 kg in the last five years of the 1990s. In 2000, per capita production was down to only 72 kg.³

³ FAO, Kenya Agriculture Sector Brief, April 2004.

Table 2.2 Maize situation trends

Year	Production	Maize kg per Capita by	
		Availability	Utilization
1970	129	131	130
1980	99	119	125
1990	97	97	93
2000	72	85	98

Availability = production plus imports

Utilization is availability (+/-) changes in stocks

Despite the impressive rates of growth in the 1970s and early 1980s, there was a fall in agricultural output from 1993 to 1998, and particularly from 1998 to 2001. Among the major factors behind the poor performance were:

- Inappropriate macroeconomic policies, especially an overvalued exchange rate (until 1994);
- The ineffectiveness of agricultural support services, including parastatal marketing and credit agencies resulting in much-delayed payments to farmers;
- Limited availability of good agricultural land; and
- A slowdown in the flow of new technologies.

These problems were exacerbated by the effects of several extreme droughts and the short-term negative side-effects of fundamental policy adjustments.⁴

2.1.3 Food crops

The major cereal staples produced are maize, wheat and, to a limited extent, rice. Other important food crops include Irish potatoes, bananas, sorghum, millet, cassava, sweet potatoes, vegetables and fruits.⁵ In normal rainfall years, the country produces about 2.7 million tonnes of maize, 270 000 tonnes of wheat, and 50,000 tonnes of rice. Cash crops that contribute to food security are coffee, tea, sugar and cotton. Annual production for these commodities is 100 000 tonnes of clean coffee, 294 000 tonnes of processed tea, 420,000 tonnes of sugar and 40 000 tonnes of cotton lint.

The production cost of most of these crops is high, because of escalated input costs, the low level of mechanization and the high transport costs brought about by poor infrastructure. This implicit taxation of the agriculture sector, coupled with other inefficiencies, makes the cost of production of food crops in Kenya higher than in other parts of the world. Food production has, therefore, lagged behind consumption, thus creating deficits.

Maize is Kenya's most important staple food crop but its production has fallen short of demand. The area under maize has stabilized at around 1.5 million hectares and the potential for further expansion is limited, given the competition from other crops. Maize production during the long rains ranges from 26 to 30 million 90 kg bags, of which smallholders produce 75 percent. The average maize yield is 2 tonnes per hectare, but the potential exists to increase the yield to over 6 tonnes per hectare. Wheat production has stagnated at 270 000 tonnes, against a rising demand, currently estimated at 720 000 tonnes. Rice production is mainly in irrigation schemes (Mwea, Ahero, West Kano and Bunyala) that are managed by the National Irrigation Board. A small amount (13 percent) is from rainfed paddies. The average annual production, estimated at 52 000 tonnes, is only about 34 percent of national consumption.

In spite of the different efforts in developing sorghum and millet, mainly because of their significance in drought-prone areas, there has been a notable decrease in hectareage over the past few years from

⁴ FAO, *ibid*

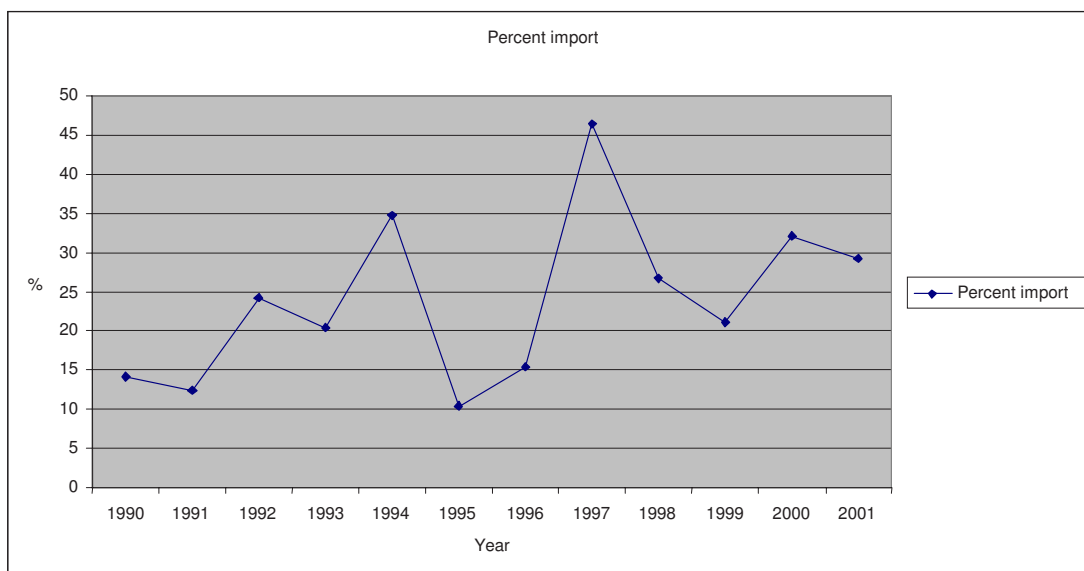
⁵ See Annex for further details about the major agricultural products in Kenya.

300,000 hectares in 1996 to 260 000 hectares in 2000. Pulses, a cheap source of protein, are planted in most parts of the country. Their performance has been mixed, but has generally shown a declining trend because of bad weather, low-quality seeds, high cost of inputs and lack of suitable varieties for marginal areas. Roots and tubers,⁶ which are high in calorific value, are important food security crops but their production has been constrained by lack of clean planting materials.⁷

2.2 Food imports and food aid

Food imports and food aid have been used in Kenya for a long time with trends showing a tendency towards increased dependence in the recent past. This contradicts the Government's objective of food self-sufficiency. The share of cereal imports (both commercial imports and food aid) in total cereal supply rose to over 45 percent in 1997 after declining to 10 percent in 1995 and 16 percent in 1996. Cereal imports fluctuated between 20 and 33 percent during the period 1998 to 2001 (Figure 13).

Figure 2.2: Share of cereal import in total cereal supply



This requires a ready foreign exchange reserve, so that food imports can be made when they are needed. However, Kenya, like other developing countries, is constrained by the level of foreign exchange reserves, mainly because of reliance on primary products that are subject to fluctuating world prices as the basis of export commodities. Thus, food importation is dependent on foreign exchange reserve availability. The ability to import is also constrained by the nature of imported food, which may not be acceptable to Kenyan consumers. For example, many Kenyans do not like yellow maize and, for whatever reason, have continued to regard it as 'animal food' (Gitu and Kanyua, 1993).⁸ To most Kenyans, 'food security' means having *ugali* made of white maize meal on their table.⁹ 'Food insecurity' is synonymous with eating *ugali* made of yellow maize.

⁶ Roots and tubers include cassava, sweet potatoes, Irish potatoes, arrowroot and yams.

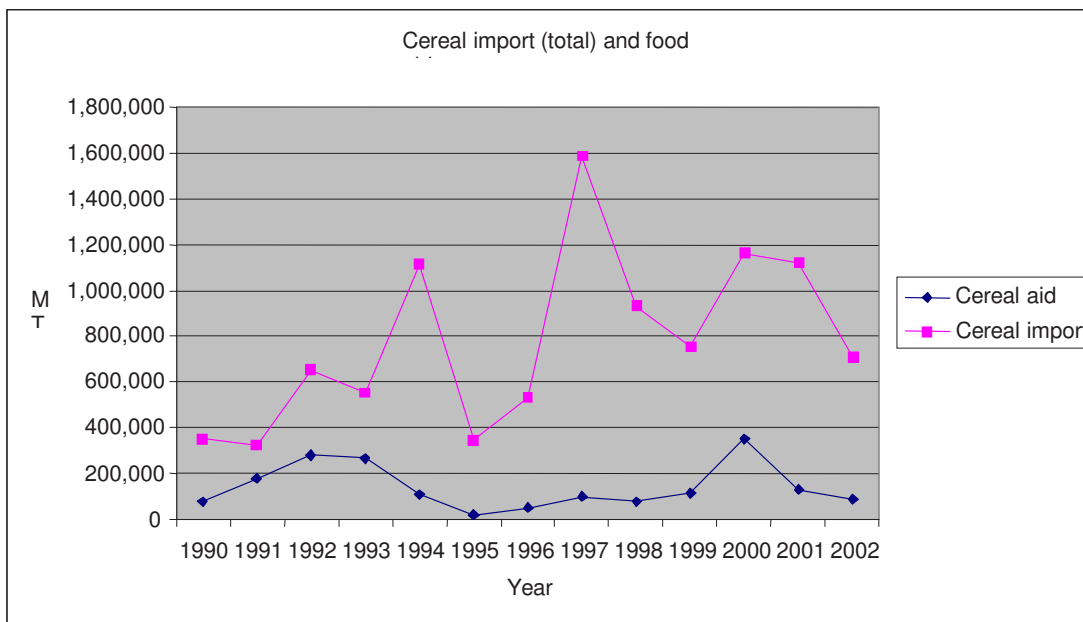
⁷ FAO, Kenya Agriculture Sector Brief, April 2004.

⁸ Yellow maize is seen as uncommon food is referred to as 'chakula cha farasi', meaning 'food for horses'.

⁹ Ugali is a Kenyan dish made of white maize flour. In fact, this dish is what most Kenyans refer to as 'food'. Therefore, if there is no white maize, there is seen to be food insecurity.

Currently, the country imports wheat, rice, maize, powdered milk and sugar, and receives food aid from donor agencies, mainly from the United States and EU, as a form of development assistance and, at times, as emergency relief during shortfalls in production (Kilungo, 1992). Table 30 presents Kenya's food imports for the period 1980 to 2000. The level of food imports for most commodities was relatively low between 1987 and 1991 (Figure 14) because of food availability from domestic production. However, from 1992, imports have been high (with the exception of 1994 and 1995) because of the decline in domestic production. The fluctuations in import levels are a reflection of the fluctuations in domestic production. The largest amounts of food imports are from the developed countries (EU, United States and Australia). These are countries where food production is highly subsidized, thus posing a threat to domestic production of food commodities. Wheat imports increased from 48 500 tonnes in 1980, to 636 000 tonnes in 2000. Rice and sugar imports increased from 1 200 tonnes and 3100 tonnes, to 105 800 tonnes and 91 600 tonnes, respectively. Dried milk on the other hand, indicates a downward trend from 12 888 tonnes in 1980 to 1 749 tonnes in 2000. Importation of maize has not been as consistent as that of the other foodstuffs. For example, no maize was imported in 1983 and for the period 1987 to 1991. Imports of maize were high in the 1984 drought year, as well as in 1992, 1994, 1997 and 2000.

Figure 2.3:Quantity of total cereal import and food aid



Over the years, Kenya has benefited from various donor agencies. Major organizations involved in food aid include the World Food Programme (WFP) of the United Nations and the United States Agency for International Development (USAID). The importation of wheat, which is the major food aid commodity, is normally on concessionary terms, with an initial down payment of 5 percent, a grace period of ten years and repayment over the succeeding 30 years (Kilungo, 1992). The interest charges are at a rate of 2 percent per annum for the first ten years and 3 percent for the remaining years.

Table 2.3 Imports of major food commodities 1980–2000 ('000 tonnes)

Year	Maize	Wheat	Rice	Sugar	Dried Milk
1980	323.0	48.5	1.2	3.1	12 888
1981	77.3	49.2	4.6	2.1	11 210
1982	89.0	139.3	11.9	2.2	4 210
1983	0.0	81.9	44.8	2.4	4 532
1984	405.4	149.9	0.5	1.7	11 108
1985	125.5	14.8	0.6	39.1	6 677
1986	0.7	115.3	61.7	126.3	1 508
1987	0.0	217.9	39.2	49.1	545
1988	0.0	75.6	10.0	42.0	82
1989	0.0	123.5	30.0	80.0	15
1990	0.0	322.6	28.0	64.0	48
1991	0.0	242.6	61.2	59.7	65
1992	414.9	100.8	58.9	153.8	829
1993	12.9	314.4	37.2	184.8	747
1994	650.4	353.1	93.5	256.1	2 319
1995	12.0	364.0	30.7	244.0	679
1996	10.8	486.9	47.9	65.8	309
1997	1 101.1	388.1	62.4	52.4	863
1998	774.0	478.9	62.8	186.5	2 500
1999	73.5	579.0	53.4	55.6	2 694
2000	409.4	636.0	105.8	91.6	1 749
<i>Average</i>	<i>213.3</i>	<i>251.5</i>	<i>40.3</i>	<i>83.9</i>	<i>3 122.7</i>

Source: Kenya Statistical Abstracts (Various years)

Food aid is mainly linked to emergencies and usually targets vulnerable groups. It is executed in three different ways, general ration, supplementary feeding, and therapeutic feeding.¹⁰ (Gillis *et al*, 2002; Kiio and Upadhyaya, 2002). Kenya receives food aid in the form of cereals, pulses, oils and fats, and various blends. Table 31 indicates the amount of food aid received for the 2002/03 period.

Table 2.4 Food aid 2001 to 2003 (tonnes)

Year	Cereals	Processed cereals	Pulses	Oil/fats	Blends	Total
2001	228 961.63	7 532.21	24 306.18	14 431.87	27 171.91	306 643.10
2002	13 355.69	9 850.94	14 676.24	2 775.05	1 917.09	42 575.01
2003	24 491.63	4 969.37	1 965.69	815.56	2 409.81	34 781.45
<i>Average</i>	<i>88 936.32</i>	<i>7 450.84</i>	<i>13 649.37</i>	<i>6 007.50</i>	<i>10 449.60</i>	<i>127 999.85</i>

Source: World Food Programme

2.2.1 Food insecurity

Food insecurity in Kenya occurs both in urban and rural areas, and in both the high-potential and ASAL areas. About 51 percent and 38 percent of the rural and urban populations, respectively are food-insecure. The insecurity has been attributed to many factors, including decline in agricultural productivity, inefficient food distribution systems, population growth, unemployment and uncertain access to income, and the high

¹⁰ 'General ration' is provided as a complete basket of food commodities in quantities; 'supplementary feeding' specifically targets groups at risk of malnutrition, such as children and pregnant women; 'therapeutic feeding' is usually in feeding centres or clinics, to people suffering from malnutrition.

incidence of HIV and AIDS. Food insecurity in Kenya has been classified as either 'chronic' or 'transitory'.¹¹ 'Chronic' food insecurity results from continuously inadequate access to food and is caused by the chronic inability of households to either produce or purchase sufficient food, whereas 'transitory' food insecurity is inadequate access to food due to instability in food production, food supplies and income. The food problem in Kenya is mainly of a transitory nature, characterized by periodic droughts over the years, and institutional failure and poor policies. These cause food cropping and livestock production to decline, forcing the country to import substantial volumes of food. While food crisis in the ASAL has generally been attributed to climatic and environmental conditions, other equally important factors have been documented. These include limited alternative sources of income, exploitative cereal marketing channels, non-availability of drought and disease resistant crop varieties, limited crop diversification, poor storage methods, lack of credit services, inaccessibility of agricultural services, illiteracy and poverty (Mayanga *et al*, 2003).

Food insecurity has also been viewed as a question of 'entitlements', under which it is acknowledged that not all have equal access to the food available or produced. Sen argues that some people are deprived of food by a breakdown in their 'means' of accessing food. As is evident in Kenya, food insecurity has occurred without any decline in the general supply of food. In other words, food production per person can increase and yet more people still go hungry. This is basically caused by the other intervening variables, like food distribution patterns, as well as national policies and subsidies. Furthermore, food shortages are not experienced uniformly, even in the same food-deficit zone (Sen, 1981).

Recurrent food shortages, especially before grain marketing was liberalized in Kenya have been blamed on the abandonment of indigenous drought resistant crops and soil conservation methods. However, initiatives being made to assist rural communities to revert to these practices are beset by obvious inherent contradictions. Apart from changes in feeding habits and tastes over time, the market has not been overly receptive to these changes, particularly with regard to indigenous crop varieties like millet, cassava, sorghum and cowpeas. It has also become increasingly difficult to convince consumers that their traditional crops and vegetables are not only well-suited to local climatic conditions, but are also nutritious. As a result, there is a dire need for a concerted and participatory effort aimed at sustainable coexistence between 'new' technologies in agriculture, and the traditional farming practices.

Food insecurity has also been caused by land fragmentation, as most of the original large-scale farms have been subdivided beyond economically sustainable production capacity. As a result of this fragmentation, some 89 percent of the households in Kenya are living on less than 3 ha, while more striking is the fact that 47 percent lives on farms of less than 0.6 ha. Thus the country is predominantly made up of small farms. Ten percent of the holdings or 575 000 households are above 3 ha. One third of these are in the large-farm areas of the Rift Valley Province and another one third in the marginal areas of Eastern Province (Kitui and Machakos) and Nyanza Province (Homabay and Migori). The balance is made up of small pockets of large farms in all areas of the country.¹²

Despite the rental market, Kenya is faced with landlessness, as large chunks of idle land owned by the State or individuals still exist. There is a need to revise the existing land laws, land tenure system and land distribution so that land that is idle can be put to productive use. Other bottlenecks to food security include farmers' inability to access food crop research findings, demotivated extension workers, tribal clashes and displacement, illiteracy and use of rudimentary farming methods.

¹¹ Mayanga *et al* define 'transitory' food insecurity as a temporary decline in a household's access to sufficient food supplies. The transitory food insecurity households are those that, under normal circumstances, are able to produce enough stock but are vulnerable to supply problems when external shocks affect their food production systems or distribution chains for a limited period of time.

¹² FAO, Kenya Agriculture Sector Brief, April 2004.

2.2.2 The state of nutrition

While Kenya has been successful in expanding its agricultural exports, per capita food has declined from 2 150 Kcal per day in 1979 to 1 910 in 1992 to 1994. This fall is largely because local staple food production has been outstripped by a relatively high rate of population growth, caused by increases in life expectancy, offsetting the decline in fertility that resulted from a successful family planning programme. With about 44 percent of the population chronically undernourished, it is evident that current demand falls far short of real needs, reflecting the low prevailing per capita income and skewed income distribution, both of which limit access to food. Apart from low energy intake, there is widespread incidence of anaemia induced by iron deficiency, endemic goitre and vitamin A deficiency, as well as nutritional problems caused by lack of clean water and poor hygiene (Horizon, 2015).

Poverty is most serious in areas of high and medium agricultural potential lands. This is because of the very high density of population, which in turn implies small farm size per family. Wide income disparities characterize the Kenyan society. The poorest 20 percent of the population controls about 3.5 percent of the rural income and 5.4 percent of the urban income. On the other hand, the richest 20 percent of the population controls 61 percent of the rural and 51 percent of urban income (Horizon, 2015).

The incidence and intensity of hunger and malnutrition has increased significantly and per capita supply of the main staples has been declining since the early 1980s. Chronic undernutrition is the most common form of malnutrition in Kenya and is mainly associated with insufficient dietary intake, because households lack adequate resources (income) to secure their basic food requirements.¹³ From 1982 to 1994, the nutritional status of children showed an uneven trend, although there was marginal improvement at the national level. The rates of chronic undernutrition – measured by retarded growth – appeared to be declining at a rate of 1 percent a year between 1982 and 1987. However, this trend reversed thereafter and the nutritional status deteriorated. In 1994, the prevalence of chronic undernutrition among children under five years had risen to 34 percent, a level that is 15 times higher than that expected in a healthy, well-nourished population. The observed trend of undernutrition at the national level corresponds with the decline in per capita food availability, declining economic performance especially in small-scale agriculture, and rising levels of poverty. Chronic undernutrition does not affect all children uniformly in the country and the national estimates shows regional variations.

Children in Kwale and Kilifi, in Coast Province, and Makeni, Kitui and Machakos, in Eastern Province, were the most vulnerable, with half of the children suffering from chronic undernutrition. Other districts with high undernutrition are also found in Western, Nyanza and Rift Valley Provinces. Increasing poverty and declining access to basic health care are the main causes of this situation. The prevalence of stunting among children remained high in Coast, Eastern, Nyanza and Western provinces (UNON, 1999).

2.2.3 Poverty and vulnerability

Table 32 indicates poverty incidence estimates in Kenya. The intensity and prevalence varies across different regions. On a national scale, it is estimated that about 56 percent of the population lives below the poverty line. Rural poverty is marked by its common connection to agriculture and land, whereas urban poverty is more heterogeneous and dependent on the means of generating income.

¹³ Undernourished in the context of world food summit 1996 refers to person whose food consumption level is inadequate in terms of calories consumed relative to requirements on a continuing basis.

Table 2.5 Poverty incidence estimates in Kenya 1981 to 2000

Region	1981/82	1992	1994	1997	2000
Central	25.7	35.9	31.9	31.4	35.32
Coast	54.6	43.5	55.6	62.1	69.88
Eastern	47.7	42.2	57.8	58.6	65.90
Rift Valley	51.1	51.1	42.9	50.1	56.38
North Eastern	NA	NA	58.0	65.5	73.06
Nyanza	57.9	47.4	42.2	63.1	70.95
Western	53.8	54.2	53.8	58.8	66.11
Nairobi	NA	26.5	25.9	50.2	52.56
Rural	48.8	46.3	46.8	52.9	59.56
Urban	NA	29.3	28.9	49.3	51.48
National	46.8	46.3	46.8	52.3	56.78

NA = Not Available

Source: GOK, Economic Surveys, Kenya PRSP (2002)

The distribution of the poor according to regions in Kenya, shown in Table 32, indicates that poverty levels are highest in ASALs in Coast, North Eastern and Eastern Provinces and in the highly populated regions of Western, Nyanza, Rift Valley and Central Provinces. These areas have few agricultural opportunities because of climatic conditions, or have been overexploited as a result of population pressure in the case of high-potential agricultural areas. Many factors are considered to contribute to poverty in Kenya. They include:

- Low agricultural productivity and poor marketing; unemployment and low wages;
- Lack of access to productive assets, particularly land;
- Poor infrastructure;
- Gender imbalance;
- High costs of social services;
- Bad governance; and
- HIV and AIDS (Kenya PRSP, 2001).

The country's strategy to address poverty is to implement pro-poor policies. These include policies that address agricultural growth, food security, employment generation and income distribution.

The poor in rural Kenya are approximately 12 million people in 2.1 million rural households, plus another 2 million individuals in 500 000 urban households. Table 33 indicates that the absolute number of poor individuals is highest in Rift Valley, Nyanza and Eastern Provinces. There are also more poor people in urban areas than in all of Central and Coast Provinces put together, with Nairobi alone having 1 million individuals living in poverty. The poor are all over the country and poverty is as much a rural as an urban problem.

Table 2.6 The poor in Kenya

	% Poor	% Of Rural Poor	Individuals	Households	HH Size
Rural					
Rift Valley	51	0.23	2 691 909	485 182	5.5
Nyanza	63	0.23	2 678 518	507 720	5.3
Eastern	61	0.19	2 280 334	382 037	6.0
Western	57	0.15	1 739 131	315 074	5.5
Central	32	0.10	1 126 826	216 047	5.2
Coast	62	0.08	883 667	138 691	6.4
North Eastern	68	0.03	369 684	60 604	6.1
	53	0.86	11 770 069	2 105 355	
Urban					
Nairobi			959 973	238 328	4.0
Other Urban			1 033 929	254 117	4.1
		.14	1 993 902	492 445	
Total			13 763 971	2 597 800	

Source: GOK 2001. Poverty Reduction Strategy Paper

The poor and the rich live side by side in Kenya, in both rural and urban areas. Attempts to show whole districts or sublocations as being a particular percent poor could mask the fact that income inequality and diversity within even single villages is greater than the diversity across districts or regions. There are poor people in the richest areas, and rich households in the poorest areas, villages and neighborhoods.¹⁴

Kenya is characterized by a highly diverse climate that varies from a tropical hot and humid coastline to a temperate climate inland, and further to a dry climate in the north. Recurrent drought is widespread and it is one of the major causes of vulnerability at the household level. Over 70 percent of the country is arid, receiving less than 510 mm of annual precipitation. Only 12 percent of the total land area is classified as having high or medium potential, while the remaining 88 percent is classified as low-potential or ASAL. Rainfall is highly unreliable and unpredictable and the country experienced severe drought in the years 1974, 1984, 1994 and 1999, resulting in significant decline in production. In the marginal areas (mainly in the eastern parts and the lake basin) with 30 percent of the national area under maize, yields range up to 8 bags per acre depending on weather conditions. The average yield of maize is 1.7 tonnes per ha. (Oluoch-Kosura and Karugia, 2004).

The rapid spread of HIV and AIDS poses grave health problems and has damaging macroeconomic consequences, such as reduced savings, falling labour productivity and loss of experienced workers. Around 700 people die daily in Kenya from AIDS. The disease has been declared a national disaster and accounts for the majority of patients in Kenya's hospitals. About 2.2 million people are infected and 700 000 of these have full-blown AIDS and require urgent treatment in public health care facilities. The number of AIDS orphans is estimated to have reached 1.1 million, making it the third worst affected country in the world. The high rate of sexual transmission among the 15 to 24-year age group is expected to increase the deaths from AIDS daily to 1 400 in the next five years (FAO, Kenya, 2003).

Since the disease affects the able-bodied members of the community, families have to adjust the land area devoted to farming. Remote fields are abandoned, while nearby fields are overused and undermaintained. A switch to crops requiring less labour is common. Available resources are also diverted to medical care, food and funeral expenses, instead of investment on the farm (Oluoch-Kosura and Karugia, 2004).

¹⁴ FAO, Kenya Agriculture Sector Brief, April 2004.

Women provide the bulk of the farm labour. However, women experience land tenure insecurity and this has a negative impact upon their agricultural productivity and food security. Traditional tenure systems discriminate against women in the control, acquisition and ownership of land. Women are also discriminated against when it comes to acquisition of credit (Oluoch-Kosura and Karugia, 2004). Many cultural practices disadvantage women in terms of ownership of productive assets, like cattle, houses, etc. and hence command over the resources that accrue from these assets. In the event of separation or death of a spouse, some women face discrimination that negates their rights to inherit family assets, making them even more vulnerable.

The elderly, orphans, the disabled and the pastoral community in Kenya are the most vulnerable groups for they lack necessary social and economic support. The level of vulnerability of the elderly has increased, as a result of immigration of young adults from the rural areas to the urban centres, and the effects of death from AIDS, which has also increased the number of orphans. The pastoral community is basically affected by drought and their conditions continue to worsen owing to the frequency of drought and their rapid population growth.

2.2.4 Domestic food requirements

Table 34 gives production and demand projections for major food crops for the period 2004 to 2014.¹⁵ By 2014, Kenya is expected to have to import 4 percent, 84 percent and 65 percent of maize, wheat and rice requirements, respectively. If Kenya hopes to avoid using meagre foreign exchange reserves to import food, it has to put in place measures to increase agricultural production and productivity.

Table 2.7 Production, demand and import projections for major food crops ('000 tonnes)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Maize	Production	2 815	2 874	2 934	2 996	3 059	3 123	3 189	3 256	3 324	3 394	3 465
	Demand	2 919	2 980	3 043	3 107	3 172	3 239	3 307	3 376	3 447	3 519	3 593
	Deficit	104	106	109	111	113	118	118	120	123	125	128
Wheat	Production	244	249	254	259	264	270	276	282	288	294	300
	Demand	905	973	1 046	1 124	1 208	1 299	1 396	1 501	1 614	1 735	1 865
	Deficit	661	724	792	865	944	1 029	1 120	1 219	1 326	1 441	1 565
Rice	Production	57	58	59	60	61	62	63	64	65	66	67
	Demand	114	116	118	120	122	124	126	128	130	132	134
	Deficit	57	58	59	60	61	62	63	64	75	66	67

Source: Author calculations

Livestock products include milk, beef, mutton, goat meat, camel meat, pork, poultry and eggs. An average of 2.2 billion litres of milk is produced annually, while local milk demand is 2.1 billion litres. The meat subsector is dominated by red meat (beef, mutton and goat). Red meat accounts for about 70 percent of the meat consumed locally, while white meat (pork and poultry) makes up the remaining 30 percent. The production of red and white meat is 250 000 and 40 000 tonnes per year, respectively. The estimated per capita consumption of livestock products is 9 to 10 kg for beef, 2 kg mutton and goat, 1.2 kg poultry and 0.3 kg for pork. This indicates that there is considerable potential for increased milk and meat production, which would, in turn, imply increased food security.

¹⁵ The production projection have been extrapolated at 2.1 percent, 2.1 percent and 1.7 percent for maize, wheat and rice, respectively, taking into account the expected hectareage and yields of each of the crops. The demand projections are 2.1 percent, 7.5 percent and 1.7 percent for maize, wheat and rice, respectively, reflecting the population growth rate, rural-urban migration and change of food preferences.

As indicated in Table 35, provided that Kenya intensifies livestock production by putting in place implementable strategies to increase both livestock production and productivity, Kenya is not in any serious danger of failing to meet most of her livestock product requirements. The Table indicates that only beef and camel meat will be in deficit during the period under consideration. Other meat products will be in surplus, all things remaining equal.

Table 2.8 Production and demand projections for various livestock products

Item	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Milk (million litres)	Production	2 879	2 951	3 039	3 130	3 224	3 321	3 420	3 540	3 663	3 792	3 925
	Demand	2 691	2 825	2 995	3 175	3 365	3 567	3 781	4 008	4 248	4 503	4 773
	Deficit	188	126	44	(45)	(141)	(246)	(361)	(468)	(585)	(711)	(848)
Beef (tonnes)	Production	323 021	332 857	342 693	353 128	363 563	374 470	385 704	397 275	409 193	421 469	434 113
	Demand	360 200	371 180	382 000	393 650	405 300	417 459	429 982	442 881	456 167	469 852	483 948
	Deficit	37 179	38 323	39 387	40 522	41 737	42 989	44 278	45 606	46 974	48 383	49 835
Mutton (tonnes)	Production	40 830	42 006	43 182	44 320	45 457	47 821	50 308	52 924	55 676	58 571	61 617
	Demand	53 350	54 885	56 420	57 905	59 390	62 478	65 727	69 145	72 741	76 523	80 502
	Deficit	12 530	12 879	13 238	13 585	13 933	14 657	15 419	16 221	17 065	17 952	18 885
Goat (tonnes)	Production	47 810	49 365	50 920	52 680	54 440	56 237	58 092	60 009	61 989	64 035	66 148
	Demand	42 220	43 590	44 960	46 515	48 070	49 656	51 295	52 988	54 737	56 543	58 409
	Surplus	5 590	5 775	5 968	6 165	6 370	6 581	6 797	7 021	7 252	7 492	7 739
Camel (tonnes)	Production	8 470	8 525	8 580	8 685	8 790	8 895	9 001	9 109	9 218	9 329	9 441
	Demand	8 300	8 350	8 400	8 450	8 500	8 602	8 705	8 809	8 915	9 022	9 130
	Deficit	170	175	180	235	290	293	296	300	303	307	311
Pig (tonnes)	Production	15 326	16 111	16 896	17 762	18 628	19 541	20 498	21 502	22 557	23 662	24 821
	Demand	7 631	7 857	8 083	8 427	8 770	9 200	9 651	10 124	10 620	11 140	11 686
	Surplus	7 695	8 254	8 813	9 335	9 858	10 341	10 847	11 378	11 937	12 522	13 135
Poultry (tonnes)	Production	23 196	23 784	24 371	24 988	25 604	26 244	26 900	27 572	28 261	28 968	29 692
	Demand	23 021	23 637	24 253	24 912	25 570	26 209	26 864	27 536	28 224	28 930	29 653
	Surplus	175	147	118	76	34	35	36	36	37	38	39
Eggs (millions)	Production	1 136	1 171	1 205	1 242	1 278	1 315	1 353	1 392	1 432	1 474	1 517
	Demand	1 010	1 040	1 070	1 104	1 138	1 171	1 205	1 240	1 276	1 313	1 351
	Surplus	126	131	135	138	140	144	148	152	156	161	166

Source: National Development Plan 2002-2008, Kenya Dairy Development Policy, GoK 2000 and Authors' calculations

2.3 Internal food transfers

Movement of foodstuffs from surplus areas to deficit areas characterizes Kenya's food distribution. For example, maize is produced primarily in the medium and high-potential areas of the Rift Valley Province. It finds its way to distant deficit areas of North Eastern, Eastern and Coast Provinces, and the urban centres. However, an empirical diagnosis shows that, because of problems in food distribution and marketing procedures, there are cases where people starve in drought-prone areas, like Turkana and the North Rift Valley, while several tonnes of maize await marketing opportunities in the not far distant Kitale in Trans

Nzoia District. A case in point is the 1983/84 famine that affected various parts of the country. The local residents in Machakos and Makueni districts dubbed the famine '*ngwa ngwete*', which means, 'I am dying, though I have the means'. The people had money to buy food but there was hardly anything in the commercial foodstores. Since there were foodstuffs elsewhere in the country, particularly in the Rift Valley, what the people in question experienced was an artificial shortage of food occasioned by poor distribution systems and policies. Additional evidence from Kenya's high potential areas shows that food insecurity can be experienced in the midst of plenty, arising from the combination of lack of information, an impassable road network and control of the movement of grains.

2.4 Food security strategies and safety nets

Kenya has, over the years, faced increased food deficits as a result of prolonged droughts and low productivity. Lack of effective early warning systems, lack of adequate strategic reserves, high post-harvest losses and lack of effective control of crop and livestock diseases have compounded the challenges. The private sector has demonstrated its ability to import food items that are needed in times of domestic production shortfalls. This has decreased the need for a large national strategic reserve, although this dependency on imported foodstuffs does not encourage sustainable food security.

Kenya's Special Programme for Food Security Concept Note, prepared by the Ministry of Agriculture and Livestock Development, Department of Agriculture Extension, intends to institute a national early warning and food distribution system, and maintain a national strategic reserve but encourage the private sector to get involved in the international grain trade through a more predictable policy and tariff regime. Towards halving the number of food-insecure people, a target of at least 6 million persons has been set, and it seeks to ensure that the number of chronically food-insecure does not increase beyond present levels.

A significant programme under existing national funds was planned, beginning with the 2004/05 budget, and through District Food Security Steering Committee actions in the 2003/04 budget year (starting 1 July 2003). District consultations and planning will be undertaken to prepare budget requests for the 2004/05 fiscal year. The Ministry has, in the meantime, conducted sensitization workshops for key stakeholders, from the public and private sectors, at national (including the donors), provincial and district levels. Staff members at district level have embarked upon familiarization and documentation of successful initiatives.

Start up activities for the Kenya Special Programme for Food Security and Food Security Network include:¹⁶

- 1 District level consultations for development of profiles, priority-setting and budget commitments, setting the stage for scaling up of activities within districts and divisions.
- 2 District preparation activities including training of facilitators (government, NGO and CBO extensionists), testing grant modalities and exchange visits. Support to national policy development on a Food Security Strategy that would include the Office of the President, Disaster Management Unit, production and storage issues, and interministerial issues, such as trade, communications, infrastructure and other macroeconomic concerns.
- 3 Formulation of a national programme or project, with national and external funding, to address the immediate issue of 1 million chronically food-insecure households, with all national extension providers orienting their work plans toward the proposed approach.
- 4 Strengthening of the current Inter-Ministerial Committee on Food Security, combined with drawing linkages with the Kenya Food Security Meeting and means of supporting joint activities, so as to ensure greater attention to issues of chronic, rather than transitory, food insecurity.

¹⁶ FAO, Kenya. 2003. Food Security and Agriculture Development Horizon 2015, November 2003 (Draft).

CHAPTER 3: SUPPORT FOR AGRICULTURE: MAGNITUDE, EVOLUTION AND TRENDS

3.1 Importance of the agriculture sector

Agriculture is the major sector in Kenya and, although its contribution to GDP has declined from 35 percent in 1964 to about 26 percent in 2004, its contribution to development is still significant (Kenya, 2002).⁸ Out of the total 56.9 million ha of Kenyan land, over 90 percent is classified as agricultural land.

Agriculture employs about 75 percent of the labour force, provides raw materials for the agro-based manufacturing industries (which constitute 70 percent of all industries) and provides about 45 percent of the Government's revenue. Besides, the sector is the growth engine for the non-agricultural sector, with a multiplier effect of about 1.64 (Block and Timmer, 1994). Thus, agriculture is the mainstay of the Kenyan economy and is expected to maintain its role as the primary engine of growth for the economy in the foreseeable future.

The fisheries subsector contributes about 3 percent of GDP and 3 percent of total export earnings. It employs about 58 000 people directly, and 500 000 indirectly through fish processing and trade. This subsector falls under the Ministry of Livestock and Fisheries Development (MoLFD), which has the mandate to promote sustainable development of the livestock and fisheries sector and ultimately contributes to the achievement of food security. The cooperative movement plays an integral role in the procurement of agricultural and livestock inputs, and marketing of outputs. The movement also plays a major role in facilitating the building up of revolving funds for cooperative movements in various organizations. The Ministry of Cooperative Development and Marketing (MoCDM) is, therefore, expected to spearhead the growth and development of an economically viable cooperative movement through formulation, development and implementation of policy guidelines, programmes and legal frameworks that meet the aspirations of cooperative members.

3.2 The nature of Kenyan agriculture

Kenya's agriculture is dominated by primary production of a few commodities,⁹ namely cereals (maize, wheat and rice), traditional food crops (pulses, roots and tubers, millet and sorghum), industrial crops (sugar, pyrethrum, cotton, tobacco and sisal), exports crops (tea, coffee and horticulture) and livestock (milk, meat and eggs) (Nyangito, 1998).¹⁰ Kenya's agriculture sector is characterized by smallholder mixed farming. Smallholders account for over 65 percent of the total agricultural output. Pastoralism is the main form of production in the ASAL areas. The smallholder farmers in ASAL and agropastoral districts have the potential to grow cotton as a cash crop and maize, sorghum, millet and pigeon peas for subsistence. Plantation crops grown on a monoculture basis include coffee, tea, wheat and maize.

Table 36 presents the value of agricultural primary production for 1995.¹¹ The table illustrates the actual value of specific commodities in the GDP. What is evident is that livestock contributed the largest value of agricultural primary production of Kshs 66.3 billion, while cereals, cash crops, domestic and export

⁸ Todaro (2001) defines development as the process of improving the quality of all human lives. Three equally important aspects of development are: (1) raising people's living levels – their incomes and consumption levels of food, medical services, education, etc. through relevant economic growth processes; (2) creating conditions conducive to the growth of people's self-esteem, through the establishment of social, political and economic systems and institutions that promote human dignity and respect; and (3) increasing people's freedom by enlarging the range of their choice variables, as by increasing varieties of consumer goods and services.

⁹ Other crops and livestock produced in Kenya, which at present contribute little to agricultural GDP, include sunflower, sesame, soybeans, rapeseed, castor seed, cashew nuts, ostrich bixa, bees and crocodile.

¹⁰ Agriculture includes fishing, and forestry and logging.

¹¹ The figures reflect the current situation with very minor adjustments.

horticulture, and others contributed Kshs 28.9, Kshs 31.5, Kshs 19.8 and Kshs 10.2 billion respectively. On the other hand, livestock, cereals, cash crops, domestic and export horticulture, and others contributed 39.8 percent, 17.5 percent, 19.0 percent, 11.8 percent, and 6.1 percent, respectively of the value of total agricultural GDP. As a share of total GDP, livestock contributed 10.1 percent, followed by cash crops (4.7 percent), cereals (4.3 percent), and others contributing 1.6 percent.

Table 3.1 Value of agricultural primary production, 1995

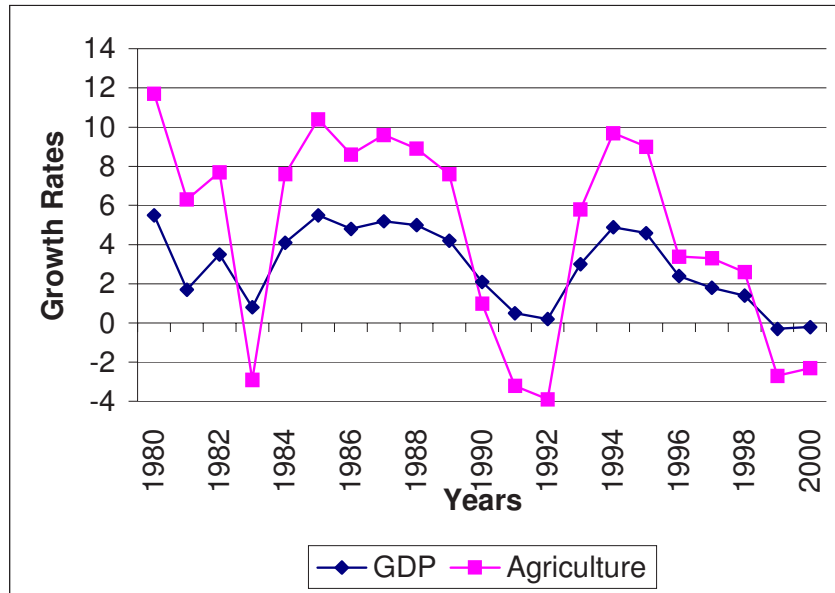
Commodity	Value of primary production(Kshs Billions)	% of agricultural GDP	% of total GDP
Beef cattle	25.0	15	3.8
Dairy products	23.1	13.9	3.5
Maize	20.1	12.1	3.0
Tea	16.6	10.0	2.5
Coffee	14.9	9.0	2.2
Domestic horticulture	12.7	7.6	1.9
Chicken products	7.6	4.6	1.1
Export horticulture	7.1	4.2	1.1
Sugar	7.1	4.2	1.1
Goats	6.5	3.9	1.1
Pulses	5.9	3.6	0.9
Sheep	4.1	2.4	0.6
Potatoes	3.1	1.9	0.5
Wheat	2.9	1.8	0.4
All primary agriculture	156.1	94.2	23.6
<i>Average</i>	<i>12.1</i>	<i>7.2</i>	<i>1.8</i>

Source: Kenya at the cross roads

3.3 Agricultural growth trends and sector analysis

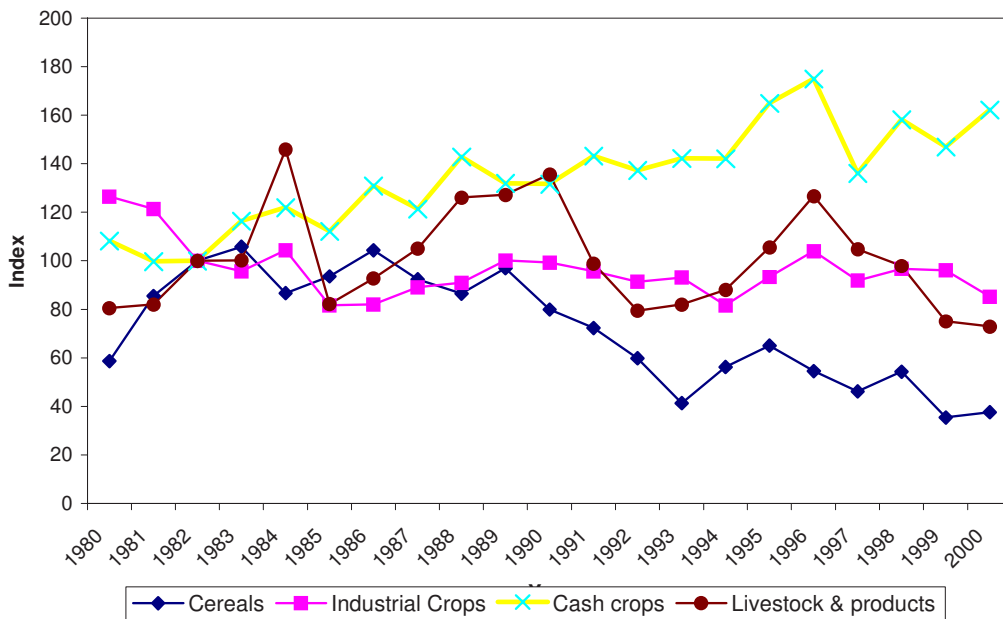
A very close relationship exists between the growth of agriculture and that of the whole economy (Figure 15). When the performance of the agricultural sector is good, that of the economy is also good and the reverse holds true as well. This positive correlation illustrates the need for the Government to increase productivity in agriculture if the economy is to move anywhere at all.

Figure 3.1: Growth rates of GDP Agriculture and GDP



When the performance of the sector is analysed - in terms of production, area, yields, marketed volumes, prices, exports and imports - one draws the conclusion that agricultural performance, especially in the post-reform period 1994 to 2000 was negative. Agricultural production shows mixed trends for various commodities (Figures 13, 14 and 15). Most commodities, particularly food and industrial crops have shown a decline in production, as reflected in sales to marketing boards, while some crops like tea and tobacco (and cash crops in general) show a generally increasing trend after 1990 (Figure 16).

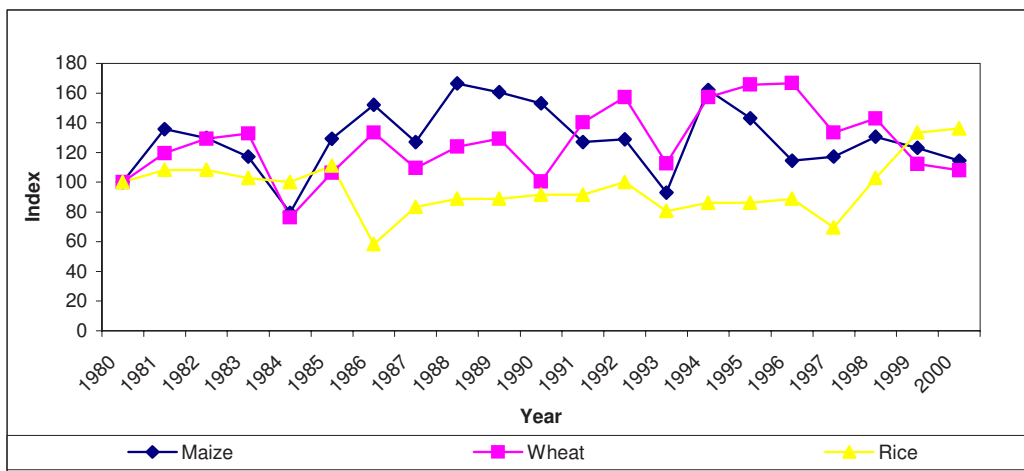
Figure 3.2: Quantum Indices of Agricultural Sales to Marketing Boards (1982 = 100)



Source: Kenya Economic Survey

The poorest performance has occurred in maize, rice and wheat (Figure 17). The mixed trend in production is attributed to a number of factors that include area expansion or contraction, and climatic, technological and price changes. While it is true that climatic factors such as drought are important in explaining Kenya’s agricultural performance, the major culprits are policy related.

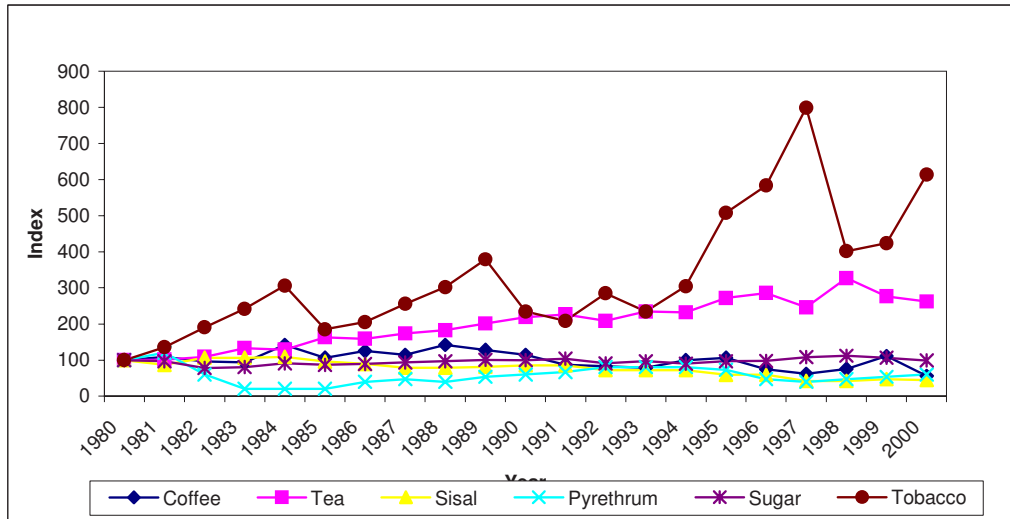
Figure 3.3: An Index of Domestic Food Crops Production (1980 = 100)



Source: Economic Survey.

Furthermore, although some commodities, like tea, show a generally increasing trend in production, this is attributed to an increase in hectareage rather than an increase in productivity or yields. In all cases, productivity for all the commodities is low, compared with research station results or those obtained in developed countries.

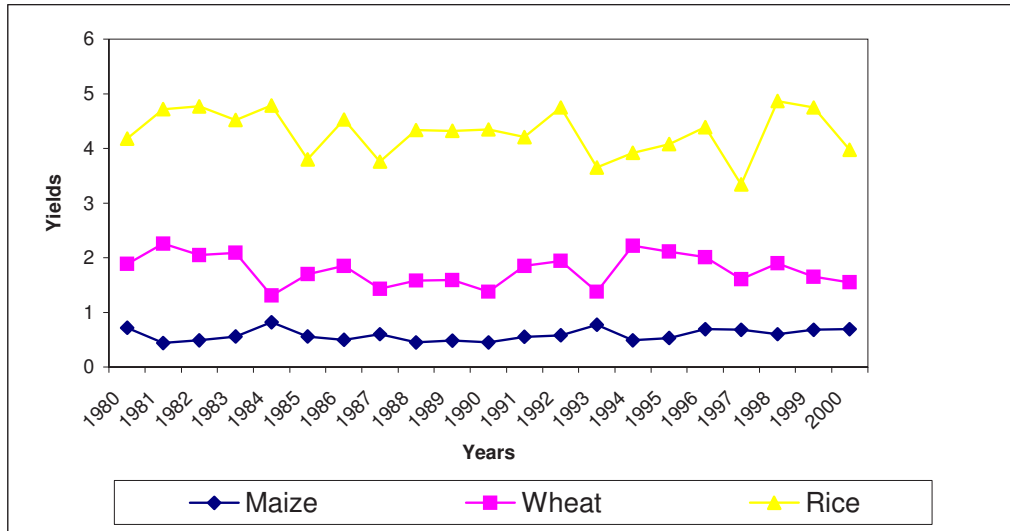
Figure 3.4: An Index of Domestic Production of Export and Industrial Crops (1980 = 100)



Source: Economic Survey.

The area under crops shows mixed trends. There has been a general increase in the area under food crops (maize and wheat) and cash crops (tea, coffee and horticulture). However, there has been a decline in the area under industrial crops, particularly sisal and cotton, but a mixed trend is observed for sugar cane, while a general increase occurred for tobacco. Given these trends in area expansion, the decline in production cannot be attributed to contraction in area, but changes in yields. The yields for various crops shown in Figure 19 (maize, wheat and rice) and Figure 20 (coffee, tea, tobacco and sisal) indicate that yields for most of the crops have stagnated since 1980, although some marginal increases have occurred for a few crops, such as tea.

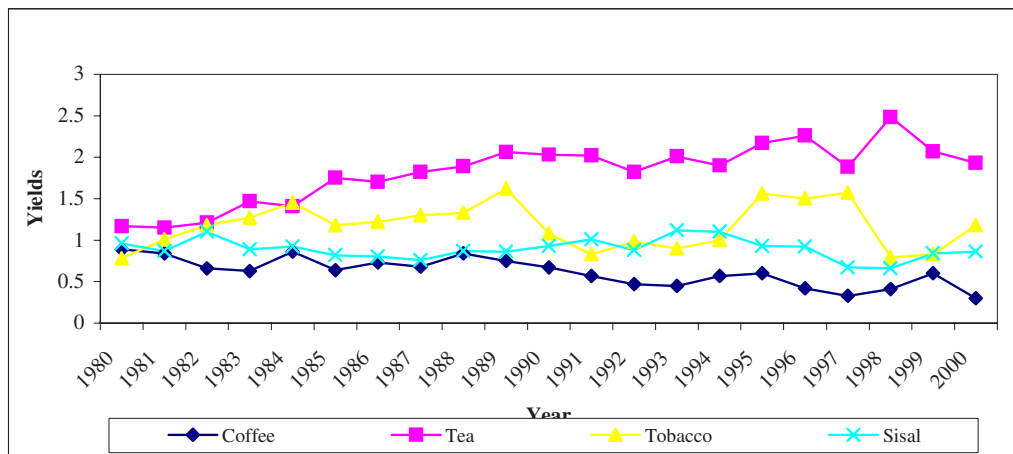
Figure 3.5: Cereal Yields (Tonnes/ha) 1980 -2000



Source: Kenya Economic Surveys.

A common feature for all crops is periodical fluctuations in yields. Different levels of crop husbandry practices, fertilizer and chemical use, quality of seed and production techniques explain the fluctuations in yields. Stagnant yields and/or declining levels are a reflection of poor crop husbandry practices, low levels of use of fertilizers and chemicals, use of poor quality seed and generally non-optimum production techniques.

Figure 3.6: Industrial crop yields (tones/has) 1980-2000



Source: Kenya Economic Surveys.

These problems extend to livestock production and, as a result, production of livestock products, particularly milk has declined. In particular, poor livestock disease control has resulted in the existence of animal diseases that restricted beef exports to European markets.

3.4 Challenges, constraints and opportunities

3.4.1 Challenges

The main challenges facing the rural sector, as identified by Kenya's Rural Development Strategy 2002–2017 are to increase productivity and economic growth in order to halt the worsening poverty levels, and to attain the target of reducing poverty by 50 percent by the year 2015. They have to be confronted at a time when Kenya faces a declining financial and natural resource base, the HIV and AIDS pandemic, insecurity, and the ill effects of globalization.

Another major challenge of the agricultural sector is to compete in the world market. The country depends on a narrow range of primary agricultural products for export, which are facing a fairly volatile and stringent world market. One of the greatest challenges in Kenyan agricultural exporting is to increase the volume and value of exports within the various trade protocols of the WTO's AoA.

3.4.2 Constraints

The growth of Kenya's agriculture and food sector is constrained by both economic and non-economic factors. These include:

- Institutional weakness;
- Collapsed infrastructure;
- Lack of an effective land policy;
- Low political support;
- High taxation;
- Poor research and extension linkages;
- Increasing prevalence of HIV and AIDS and other diseases; and
- Dysfunctional institutions, especially in the finance sector.

The section that follows examines these constraints in greater detail.

There is poor agrarian leadership in Kenya. The leadership has failed to promote an all-inclusive agriculture development framework, where the state, the private sector, civil society, institutions of higher learning, and the farming community participate. The framework must be indigenously led but Kenya can always use relevant experiences from the successful economies, for example the Asian economies (Naya and Mcleery, 1994). Past policies have been supply-driven and designed without the participation of stakeholders, especially the farmers. Even if such policies were good for the farmers, they may not have had the desired effect, as there was no ownership by the intended beneficiaries (Gitu, 2001; Idabacha, 2000). More important is that the leading role of women in all agricultural production activities has been ignored (Boserup, 1970; Sachs, 1983; FAO, 1993; Pinstруп-Andersen and Pandya-Lorch, 2000; Todaro, 2000).

The weakness of most of the resource-poor farmers' organizations is another component of the institutional failure. There is poor governance and weak leadership in many of the resource-poor-farmer groups. In particular, some of these groups are led by people who perceive them as avenues for accessing financial resources from support organizations. These are the most troublesome of all farmer groups in that they inhibit the farmers' ability to establish institutional capacity for self-development or to address their needs e.g. through failure to mobilize their own resources to reasonable levels before seeking external support. Weak leadership also tends to create dependency on others for direction and frequently leads to failure to articulate group needs and demands.

Kenya suffers from collapsed infrastructure, including a poor road network, inadequate railway network, unreliable and costly electricity and water supply, and lack of information and communications technology infrastructure. Due to the poor transport network, commodity prices often fluctuate substantially from one region to the other and are seasonally volatile. Even when agricultural surplus zones have gluts, it is not

possible to transport the produce to the deficit zones. Similarly, when technical solutions in agriculture have become available, lack of infrastructure causes problems in their transmission, especially with regard to marketing, credit, extension and input provisions. In some cases, the cost of transporting agricultural inputs and produce is so high that farmers do not produce at all, even if other resources are available. This has had a serious negative effect on the development of the agriculture sector, and consequently on poverty and food security.

Kenya's agriculture is predominantly rainfed and output is, therefore, heavily influenced by the amount, distribution and variability of rainfall, which causes considerable risks and uncertainty in production. Land scarcity is further dramatized by episodes of severe droughts (Short and Gitu, 1990). Recurrent drought has been associated with significant declines in production and consequent food shortages.

High taxation, especially on inputs, including machinery, fuel and spare parts, negatively affects the competitiveness of Kenya's agriculture. Taxation and policy biases against agriculture include:

- Concentration of public investments in areas of infrastructure and provision of safety nets in urban areas;
- Direct taxation of agriculture-based exports and local authority tax;
- Subsidies and tax waivers for capital intensive technologies, such as computers and mobile phones, instead of reducing costs of agricultural inputs;
- Development of infrastructure in urban areas rather than in rural areas where the infrastructure is needed most;
- Weak farmers institutions to support agriculture; and
- Market access and transport costs that are biased against rural development.

Input-intensive technologies are not economical either when farmers must pay prices for fertilizers and receive only 30 to 60 percent of the market value for their produce, or when surplus product cannot be transported and sold because of lack of infrastructure.

Land has been one of the most contentious issues in Kenya's political economy. The lack of a coherent land policy that harmonizes the different land-based activities, such as agriculture, pastoralism, tourism, industrial location and human settlement has continued to undermine agricultural development and food security. The surveying, titling and registration of land is about 80 percent complete in the high and medium-potential areas of the country but this cannot be said for ASAL areas. Some authors believe that ownership of land greatly influences the intensification of agriculture, as title to land gives one the exclusive right to operate a particular landholding and invest on it, and can also be used as collateral in sourcing financial credit (Bwika, 1990). Lack of title deeds has weakened farmers' resolve to operate their landholdings and deterred long-term investment on the land. Furthermore, land ownership and credit access is highly biased against women, who are the main operators of land in Kenya. Some empirical evidence has pointed to the non-existence of a casual relationship between the formal registration or titling of holdings and the propensity to invest, demand credit, increase yields and exchange land through sales and purchases. Nevertheless, it is accepted that, to achieve the desired effect of land registration and titling, other complementary factors, such as access to quality inputs, infrastructure and efficient marketing of produce, must be in place. These complementary factors are mostly unavailable leading to missing markets and non-realization of increased productivity (Migot-Adhola *et al*, 1994; Obunde *et al*, 2003).

Agricultural productivity is threatened by the HIV and AIDS pandemic. The opportunity cost in terms of foregone production is high and, at the same time, mortality and morbidity from HIV and AIDs results in labour shortages for both farm and domestic work. In the rural areas, estimates indicate HIV prevalence to be between 12 and 13 percent. This threatens the ability of the small farmer to produce sufficient food. Similarly, other diseases, such as tuberculosis and malaria are having a similar effect (Saitoti, 2000; Wilson, 2001; Bernet and Rugalema, 2001).

Building a Case for More Public Support

Low political support and non-performance of policies have affected agricultural growth. Kenya's leadership must play a greater part in guiding agricultural development than hitherto. It must drive the agricultural development process and must provide political support, which is vital for a rapid and sustained growth process.

Weak research and extension linkages have adversely affected agricultural production and productivity. Although Kenya's agricultural research system is relatively strong, compared to other developing countries, progress in increasing total factor productivity in agriculture suggests that it has inherent weakness that force it to operate below its potential. This has been related to:

- Weaknesses in research, priority-setting, financing and management;
- Poor interagency linkages;
- Underfunding of operational costs; and
- Lack of managerial autonomy and accountability (Simons and Gitu, 1989; Simons, 1989; Gitu, 2001; Omamo, 2003).

A major limiting factor to agricultural research has been the fact that local research institutes rely mainly on donor funds. The weaknesses in research and extension linkage have limited the generation of new technologies. Recent analysis shows a declining trend in efficiency and effectiveness of the Ministry of Agriculture extension services (Kosura, 2001). This is a result of declining budgetary allocations to the sector, lack of clear objectives, failure to identify the role of beneficiaries, and poor organizational and institutional structures among other factors. Although new technologies are available on-shelf, the farming community has not benefited from them, since research findings do not flow to the farming community because of the dysfunctional extension service.

Strong credit and marketing institutions supported agricultural production systems in the first decade after independence. These included the Agricultural Finance Corporation (AFC) for credit, National Cereals and Produce Board (NCPB) for marketing of maize, wheat and other cereals, Kenya Meat Commission (KMC) for marketing meat, Kenya Cooperative Creameries for milk, and Kenya Sugar Authority (KSA) for sugar, just to mention a few. These institutions initially performed fairly efficiently but, in response to high-level Government interference, corruption and poor management, their performance has deteriorated to a point that they have increasingly failed to provide services to farmers. For example, before the onset of market liberalization, formal agricultural credit was provided at subsidized rates through a number of credit schemes especially for maize farmers. These schemes are no longer in operation. By comparison with commercial banks, the lending rates of the AFC were lower and more stable, and loans were more widely available. In an attempt to increase financial resources to the sector, the Government introduced a requirement that commercial banks and non-banking institutions lend between 17 and 20 percent, and 10 and 15 percent to the agricultural sector, respectively. However, this has not happened, as both types of institution have remained conservative and resistant to lending to agriculture, because of the assumed risks and uncertainties associated with agricultural production.

Other constraints that have also contributed to the decline in agricultural production and productivity and must be removed include:

- Lack of storage and other post-harvest technologies;
- Lack of a comprehensive legal framework to guide formulation of consistent policies;
- Poor marketing information;
- Lack of capacity in the private sector to take over functions performed by the State before liberalization;
- Inadequate integration and coordination of activities by major players in the sector, including various Government ministries, farmers' organizations, private sector, donors and NGOs;
- Inadequate high-yield crop and livestock varieties; and

- High input costs, especially for animal feeds.

These constraints must be removed if agricultural productivity is to be increased. In addition, there is a need to improve macroeconomic performance in order to enhance domestic savings rates and promote capital formation for wealth creation and economic growth (GoK, 1986; Nyangito, 2001; Lipton, 1987; Eicher, 1988; Gitu and Short, 1990; Gitu and Kanyua, 1991).

3.4.3 Opportunities for growth and development in agriculture

The Kenya Government has, in a number of policy documents, emphasized self-sufficiency in domestic production of the main food commodities, as well as the ability to generate adequate foreign exchange as a means of achieving food security. As noted earlier, the country has not attained the desired self-sufficiency, except in the case of maize in the 1970s. There have been shortfalls in foodstuffs, particularly maize, because of the reduced hectareage under, low levels of fertilizer use, discontinuation of crop insurance schemes, particularly the Guaranteed Minimum Return (GMR), drought and other factors. Subsequent policy papers have addressed farmer incentives to increase food production and create an effective distribution system to guarantee that food reaches deficit areas.

Even with the adverse climatic conditions and the scarcity of medium to high-potential land, it has been demonstrated that, given adequate support and non-interference in production and marketing, Kenya is capable of increasing both production and productivity in agriculture. The tea, horticulture and dairy subsectors are among those in which Kenya has had the greatest success and still has great potential to increase production and productivity. The success in these subsectors can be attributed to a combination of factors including:

- Favorable weather conditions over some of the years;
- Availability of credit;
- Emerging market opportunities; and
- Government sponsored research and extension, training, and monitoring.

The Government also created an enabling environment by removing bureaucratic structures in the market mechanism. The combined Government assistance and restraint from interference helped in the rapid expansion of these subsectors (Nyangito, 1996; Kimenye, 1995).

These three successful subsectors are examined in more detail below:

- Tea Kenya currently produces about 16 percent of the world's marketed black tea and ranks second after Sri Lanka in tea exports. Kenya is also the third largest tea producer in the world, after India and Sri Lanka. The tea sector has recorded rapid growth both in hectareage and in production. The smallholders witnessed the highest expansion, with production rising from a mere 1.7 percent of the total tea production in 1963 to 61.6 percent in 2000. Tea is a major source of employment, income and foreign exchange.

Table 3.2 Tea Production

Year	Estates			Small Holdings		
	Area	Prod.	Yield	Area	Prod.	Yield
1963	17 921	17 770	0.99	3 527	312	0.09
1990	29 979	87 089	2.91	67 041	109 997	1.64
1991	31 017	90 847	2.93	69 609	112 742	1.62
1992	31 340	88 261	2.82	72 162	99 881	1.38
1993	31 754	98 634	3.11	73 109	112 535	1.54
1994	32 038	90 338	2.82	78 183	119 084	1.52
1995	32 201	105 580	3.28	80 355	138 945	1.73
1996	32 523	113 091	3.48	81 159	144 071	1.78
1997	32 694	91 014	2.78	84 657	129 708	1.53
1998	33 761	114 527	3.39	84 657	175 628	2.07
1999	33 586	94 853	2.82	86 813	153 855	1.77
2000	34 090	90 740	2.66	88 146	145 546	1.65

Source: Gitu and Nzuma

The remarkable growth in the tea subsector is attributable to a number of factors, including favourable land and investment policies, institutional support, attractive world market prices and the land redistribution policy adopted by the Government at independence and completed in the mid 1970s. Under land redistribution, large-scale settler farmers were bought out by the Government, and the land was subdivided and given to smallholder farmers. In addition, the abolition of the policy that previously restricted Africans from growing cash crops led to the expansion of the area under smallholder tea. Favorable investment policies for estates, particularly the non-interference in production, processing and marketing, encouraged tea growing by large-scale farmers. The success of the smallholder grower is also attributable to the Kenya Tea Development Authority (KTDA) involvement in the provision of extension services and inputs to farmers, collecting green leaf, processing, and marketing of made tea. In addition, there have been a number of policy reforms in the tea sub-sector, including deregulation of markets and prices to encourage the private sector to play a more active role in production, processing and marketing of agricultural commodities, divestiture of Government's role in productive activities in agriculture to allow marketing institutions to operate like commercial entities and compete with the private sector, and macroeconomic reform policies that removed restrictions on the exchange rate, retention and remittance of foreign exchange and the liberalization of interest rates. Other areas of reform have included the conversion of the KTDA into a farmer-controlled organization.

While the above success story is remarkable, there have also been hindrances to the growth of the subsector, including poor road infrastructure, inefficient management of the collection network, inadequate processing capacity and low fertilizer use. In order to improve tea production, there is a need to provide credit facilities, especially to smallholder farmers, strengthen extension services and increase processing capacity. Increased research on high-yielding varieties, and drought and frost-tolerant varieties, as well as increased involvement of farmers in the management of the industry are also needed. Finally, tea is sold without blending and packaging to reflect that it is Kenyan tea, despite the fact that blended tea fetches prices six times higher than bulk exports. There is, therefore, great potential for earning more from exports if Kenya blends and packages its tea for export.

- Horticulture Kenya's success in expanding horticultural exports (fruits, vegetables and cut flowers) is well known. Horticulture ranks second to tea in agriculture export earnings and it accounts for approximately 16 percent of domestic agricultural exports. It is a major source of income and employment in the rural areas. This sector directly contributes to food security, as 95 percent of its production is consumed locally. Smallholder growers account for 80 percent of all growers and

produce 60 percent of horticultural exports. Recognising the importance of the horticulture subsector, the Government established the Horticultural Crop Development Authority (HCDA) in 1967 to develop the sector. The HCDA has been able to help farmers in an advisory and regulatory capacity over the years. Most horticultural exporters work through private sector intermediaries, local farmers and merchants, who fund farmers willing to grow the produce, provide them with information about quality, prices and timing of supply, communicate to exporters the local supply conditions, distribute packaging materials to farmers and pay at the end of the season. The intermediaries provide the collection points to which farmers deliver their produce and from which the exporters collect it.

The major horticultural crops include French beans, tomato, cabbages, mangoes, citrus, onion, macadamia, cut flowers and Asia vegetables. The major export crops are cut flowers, fruits, vegetables, spices and herbs. Table 38 presents Horticulture Crop Production Trends for 1996 to 2000. A total of 2.75 million tonnes of horticultural products are consumed in the domestic market. In addition to horticulture being a major source of foreign exchange, it directly contributes to food security as a source of vegetables. The subsector has also contributed immensely to poverty reduction, through the creation of rural employment. Horticulture is labour-intensive and largely under irrigation so there is potential to grow two crops a year.

Table 3.3 Horticulture crops production trends

Year	Crop	Area ('000' ha)	Production	Value (million Kshs)
1996	Fruits	95	1 397	23 699
	Vegetables	81	936	9 315
	Herbs and spices	2	7	181
	Cut flowers	1	39	4 366
	Total	179	2 379	37 561
1997	Fruits	129	1 713	12 718
	Vegetables	88	988	12 281
	Herbs and spices	1	6	147
	Cut flowers	1	40	7 443
	Total	219	2 747	32 589
1998	Fruits	135	2 141	14 367
	Vegetables	91	1 043	11 934
	Herbs and spices	1	5	88
	Cut flowers	1	34	4 857
	Total	228	3 223	31 246
1999	Fruits	136	2 158	18 462
	Vegetables	97	1 128	12 259
	Herbs and spices	1	6	130
	Cut flowers	2	41	7 412
	Total	236	3 333	38 263
2000	Fruits	136	2 063	25 246
	Vegetables	88	1 048	13 123
	Herbs and spices	1	5	200
	Cut flowers	2	42	7 227
	Total	227	3 158	45 796

Source: National Development Plan 2002–2008

- **Dairy** A fundamental change in the structure of the commercial dairy industry occurred in the past thirty years. This has been attributable to a number of measures that the Kenya Government took in the early years of independence, which included guaranteed favourable feed prices, efficient land policy, effective disease control services, wider availability of credit especially to small-scale farmers, the development of the national artificial insemination services, favourable output pricing and marketing structures, and effective institutions. The dairy industry has grown from 421 000 dairy cattle producing 793 000 litres of milk in 1963 to 3.3 million dairy cattle producing 2.5 billion litres of milk by 2003 (Table 39). Among the Government institutions that helped the growth of this sector was the Settlement Trustee Fund, which financed the purchase of dairy animals for those who were

resettled in the settlement schemes that the Government created after independence. Dairy farmers were provided with loans to acquire land, grade dairy animals and build fencing. These credit facilities were long-term and attracted low interests rates. The Government also established farmers' training institutes, which introduced modern methods of animal husbandry. Kenya has the potential to produce over 4 billion litres of milk, provided that a number of constraints are removed, including the existing ineffective artificial insemination services, an inadequate disease control system, the non-availability of credit to farmers, lack of breeding stocks, high feed prices, inappropriate policies, and poor institutional governance, including corruption. To further improve the dairy industry there is a need to facilitate the development of producer organizations, and improve transport and processing infrastructure, including roads, cooling and processing facilities and the dairy cattle genetic base.

Table 3.4 Dairy cattle and milk production

Year	Dairy Cattle (000's)	Milk Production (million litres)
1963	421.00	793.00
1968	491.00	834.80
1973	900.00	1 227.26
1978	1 128.00	901.12
1983	2 219.00	1 367.60
1988	2 687.00	2 160.00
1993	3 069.00	2 366.20
1998	3 177.00	2 654.10
2003	3 300.00	2 500.00

Source: Gitu and Nzuma

3.5 Agricultural policies, expenditure and support services

In the first and second decade after independence, macroeconomic policies covering monetary, fiscal, exchange rate, and trade policies, and budgetary decisions had profound impacts on the profitability of the agriculture sector and the welfare of farmers. Nevertheless, a set of relationships among fiscal, inflationary pressure, exchange rate options and agricultural profitability underlies the indirect imposition of a tax on agricultural producers. Kenyan farmers face heavy implicit taxation through unfavorable macroeconomic policies, especially overvalued exchange rates, which reduce the prices they obtain for their exports. On monetary policy, the requirement that ceilings on loan interest rates must include all lending-related charges and fees was removed, permitting institutions to set their lending rates to reflect current market conditions. Monetary policy has had a negative impact upon the availability of credit for agriculture. The major concern with the foreign exchange policy is the need for a stable exchange rate that supports and reduces uncertainty in the sector. The current floating exchange rate seems to be hurting Kenyan agriculture because of its instability and uncertainty.

The role of the Ministry of Agriculture (MoA) and the Livestock and Fisheries Development is to provide a conducive policy environment and appropriate services for the sector to develop. The Ministries are also responsible for the control of crop and livestock production, marketing, extension, land use development, regulation of agricultural credit, advice on soil conservation and agricultural research. They are also the reference points in agricultural policy formulation and implementation. One of the core functions of the MoA is to ensure food security through appropriate crop production technologies. It endeavours to attain this through, among other things, provision of good quality seed and the control of pests and diseases. The Ministry has the major responsibility for creating an enabling environment for the players in the agriculture sector, through development of effective policies and strategies, reviews of policies and the regulatory framework, and ensuring control of pests and diseases. It also facilitates collaboration among various stakeholders, such as researchers, private agrobusiness enterprises, farmers, NGOs, community-based organizations (CBOs) and development partners. This can only be achieved if relevant policies are formulated and implemented to enhance productivity, which leads to an enhanced food security status and a reduction in

poverty. Broad self-sufficiency in the production of foodstuffs has been a stated policy objective in the agriculture sector as a means of sustaining livelihoods in the country.

3.5.1 Market liberalizations

In the first two decades of independence, the thinking was that government involvement in agriculture was the prime mover in the growth of the rural economy, and agriculture in particular. This thinking was to be reversed in the third decade, when too much government intervention in agriculture started to be viewed as having negative impacts on agriculture. State involvement was viewed as unsustainable, costly and responsible for the creation of market distortion and the budgetary implications arising therefrom. Beginning in the early 1980s, policy-makers from major international institutions, especially the IMF and the World Bank, in collaboration with local technocrats and policy-makers, started to call for the reduction of government involvement in productive sectors. It was believed that developing economies like Kenya would grow much faster with less government involvement, since markets would promote competition, which putatively motivates efficient allocation of resources and encourages innovation. This was the beginning of the liberalization paradigm. A shift towards liberalized market policies in Kenya started in the 1980s but it was not until 1993 that the government became committed to implementation of these policies (Ikiara, Juma and Amadi, 1998; Nyangito, 1998).

Despite high expectations, liberalization failed to deliver fully, for five key reasons:

- 1 It was fast;
- 2 It was broad and far-reaching;
- 3 It was poorly sequenced and not synchronized with other policies;
- 4 There was policy instability, which reduced investor confidence; and
- 5 There was a lack of harmony and coordination in implementation of the policies (Nyangito, Argwings Kodhek, Omiti and Nyoro, 2003).

The result of this broad and fast-paced liberalization of the agriculture sector tended to confuse farmers, as it increased uncertainty in agricultural markets, thereby undermining confidence in the policies. Furthermore, major institutional change resulting from the reforms required sufficient implementation capacity and this was sorely lacking within Government.

After liberalization, the state was to play a reduced role in the agriculture and food sector but the private sector, which was supposed to fill the gap left by the State, has not actively participated in the sector. Reasons given for this phenomenon include lack of capacity, poor infrastructure, inadequate regulatory systems and assumed high risk in investing in agriculture. Liberalization came in to address constraints that prevailed in the agriculture sector. However, the literature indicates continued prevalence of those constraints. For example, the removal of subsidies, in particular on agricultural fertilizer, and flotation of currencies, resulted in increased costs of farm inputs, making it difficult for farmers to increase or even to maintain previous production levels from the same amount of land. Furthermore, while liberalization was supposed to ensure availability of food to all people and at all times, cases of hunger are still reported, even in areas that were previously self-sufficient. Furthermore, pricing and marketing liberalization of the food sector led to dramatic producer price increases in nominal terms for most commodities. The dramatic price increase for food crops was due to removal of price controls and response to market forces, indicating that prices were set below the market price, as determined by supply and demand. Nevertheless, production volumes indicate a poor response to price increases, due to the fact that real producer prices fluctuated dramatically while the terms of trade between outputs and inputs worsened. Consequently, the profitability of growing food crops dropped, as the prices did not provide adequate incentives for increased production of the crops. Furthermore, an analysis of the input and output price shows that liberalization measures have yet to have a positive impact upon profitability in agriculture. Trade liberalization has led to an increase in import of foodstuffs, and a reduction in government support to agriculture.

Liberalization of agricultural markets was supposed to lead, among other things, to improved production and distribution of key agricultural commodities, especially foodstuffs. But several years into the liberalization era, the country continues to experience frequent food shortages that greatly compromise the welfare of its citizens, especially the poor. This calls for serious rethinking and a marked shift in development paradigm and policy-making in agricultural development and food security strategies, if Kenya is to reverse the declining trends in agricultural production and productivity.

The need for improved agricultural productivity in recent years has attracted the attention of policy-makers, researchers and development practitioners in Kenya because declining agricultural productivity has led to food shortages, underemployment, low incomes from cash crops and poor nutritional status. This trend must be reversed, if Kenya is to attain sustainable development. More public investment should be channelled into agriculture in the areas of human capital, technology and institutional innovations among others. This is because the transformation of agriculture ought to be public-sector led in future. As noted by Eicher in reference to Initiative for Development of African Agriculture (IDEAA) countries,

The current emphasis of many donors and academics on 'freeing agriculture from the state', downsizing and reducing the role of the state represents a misleading understanding of history and a misleading guide to action in the IDEAA countries. Instead of endorsing a blanket reduction of the state involvement, we should be analyzing the changing and evolving roles of the state in relationship to civil society, the private sector and NGOs overtime. Specifically, we should be asking, what are the new roles for old actors such as the state? (Eicher, 2001)

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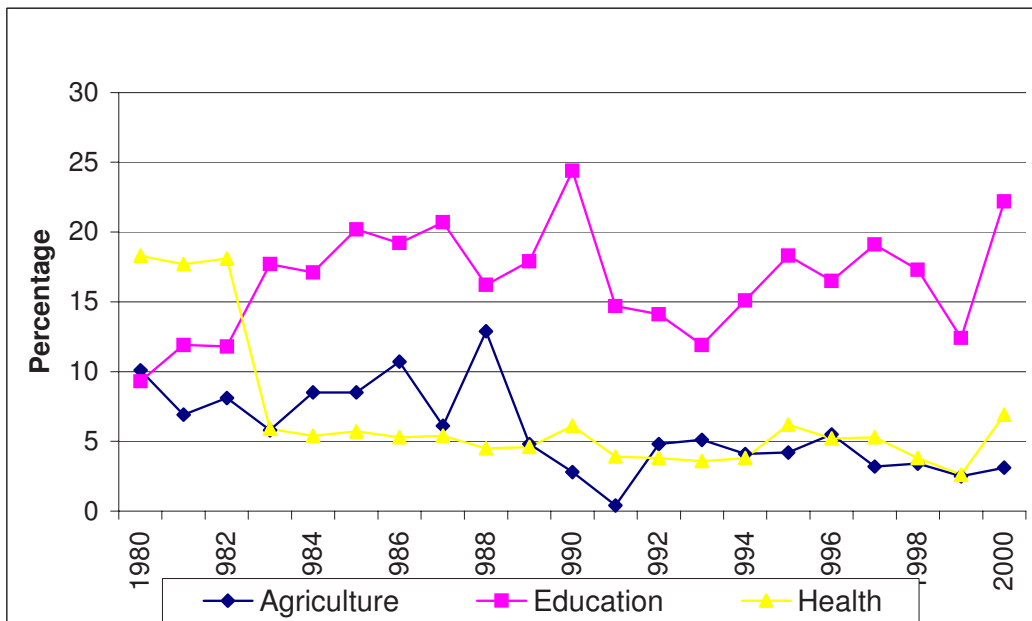
3.5.2 Comparison of agriculture support with support to education and health

Given its contribution to the economy and relatively high multiplier effect compared with other sectors, agriculture offers the best prospect for economic growth. In view of this, it is necessary to allocate more resources to the sector within the national budget. However, the allocation of government expenditure to the sector forms a relatively small share when compared with education and health (Figure 21) and has been declining.

In the period between 1980 and 2000, budget allocation to agriculture as a share of total public expenditure averaged only 6.6 percent, compared with education and health at 15.6 percent and 12.6 percent respectively. Available statistics indicate that, on average, Kenya used to spend over 10 percent of its total government budget on agriculture in the first decade after independence.

Table 40 presents the share of agriculture, education and health in total public expenditure. With the introduction of structural reforms, the allocation to agriculture declined significantly, as a result of withdrawal of subsidized services to farmers. In the period 1980 to 1985, the allocation to agriculture was 9.3 percent of total public expenditure on average, as compared with 14.8 percent and 12 percent for education and health respectively. The budget allocation to agriculture declined to 7.9 percent of the total public expenditure during the transitional period, 1986 to 1993, as compared with the budget allocation to education, which increased to 15.6 percent, and 14.5 percent for health. After 1993, the allocation to agriculture has declined to 3.7 percent as opposed to an increased allocation to education at 17.3 percent of total public expenditure and 4.8 percent for health for the period 1994 to 2000.

Figure 3.7: Agriculture, Education & Health Share of Total Public Expenditure; 1980-2000



Source: Kenya, Statistical Abstracts.

Table 3.5 Agriculture, education and health shares of total public expenditure (percent)

Year	Agriculture	Education	Health
1980	10.14	9.30	18.30
1981	6.90	11.90	17.70
1982	8.10	11.80	18.10
1983	5.80	17.70	5.90
1984	8.50	17.10	5.40
1985	8.50	20.20	5.70
1986	10.70	19.20	5.30
1987	6.10	20.70	5.40
1988	12.90	16.20	4.50
1989	4.80	17.90	4.60
1990	2.80	24.40	6.10
1991	0.40	14.70	3.90
1992	4.80	14.10	3.80
1993	5.10	11.90	3.60
1994	4.10	15.10	3.80
1995	4.20	18.30	6.20
1996	5.50	16.50	5.20
1997	3.20	19.10	5.30
1998	3.40	17.30	3.80
1999	2.50	12.40	2.60
2000	3.10	22.20	6.90
<i>Average</i>	<i>5.80</i>	<i>16.60</i>	<i>6.80</i>

Source: Kenya Statistical Abstracts

3.5.3 Agriculture recurrent and development expenditure

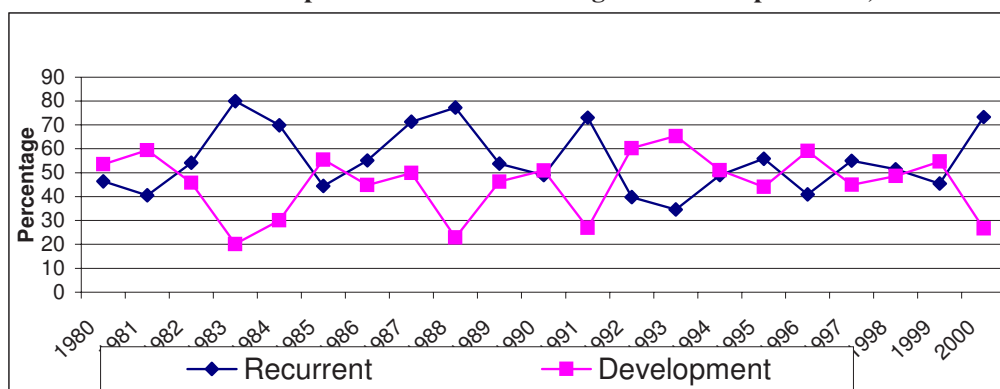
Approximately 54 percent of the Government's expenditure on the agriculture sector is recurrent, being dominated by salaries (Table 41). Only about 46 percent is spent on agricultural development, which includes agricultural research and market information, animal health services, crop protection, seed inspection, mechanization services and farm planning services. The amount spent on recurrent expenditure has been consistently higher than that spent on development expenditure since 1995/96 except for the years 1996/97 and 1999/2000.

Table 3.6 Government expenditure in agriculture, 1980 to 1999 (Kshs million)

Year	Agriculture Recurrent	Agriculture Development	Total agriculture Expenditure	Total public Expenditure	Agriculture share of total Public Expenditure (%)
1980/81	904	1 042	1 946	5 196	10.1
1981/82	628	920	1 548	22 456	6.9
1982/83	1 048	886	1 934	23 814	8.1
1983/84	1 166	294	1 458	24 848	5.8
1984/85	1 808	780	2 588	30 434	8.5
1985/86	1 244	1 552	2 796	32 568	8.5
1986/87	2 454	1 994	4 448	41 262	10.7
1987/88	3 362	1 354	2 716	43 978	6.1
1988/89	6 200	1 832	8 032	62 038	12.9
1989/90	1 654	1 422	3 076	63 120	4.8
1990/91	772	804	1 576	56 314	2.8
1991/92	266	98	364	98 534	0.4
1992/93	2 340	3 544	5 884	121 294	4.8
1993/94	3 212	6 058	9 270	180154	5.1
1994/95	3 688	3 844	7 532	184 112	4.1
1995/96	4 322	3 300	7 732	183 408	4.2
1996/97	4 590	6 636	11 2263	202 956	5.5
1997/98	4 268	3 488	7 756	242 610	3.2
1998/99	4 868	4 598	9 466	272 812	3.4
1999/00	4 422	5 316	9 738	383 408	2.5
Average	2 660	2 494	5 054	114 466	5.9

Source: Kenya Statistical Abstracts

Figure 3.8: Recurrent and Development as share of total Agricultural Expenditure; 1980-2000



Source: Kenya Statistical Abstracts (Various Years)

This is possibly because of fiscal reforms, in which the Government emphasized reduction of its public expenditure and found it easier to reduce development expenditure than recurrent expenditure (Figure 22). Most importantly, perhaps, most of the development expenditure is funded by donors. The problem with donor funding is that it is usually unstable, because of the donors' changing policies and, hence is not a sustainable long-term strategy for agricultural development. The instability of donor funding is part of the reason for the observed fluctuations. The trends in recurrent and development expenditure are mirrored more prominently in education and health, where recurrent expenditure has exceeded development expenditure for the entire period under consideration for both sectors. The section that follows disaggregates public sector expenditure for agriculture-related sectors.

3.5.4 Disaggregated public expenditure in agriculture

Tables 42, 43 and 44 present a disaggregated picture of public spending on the three ministries comprising the bulk of the agricultural sector (the MoA, Ministry of Livestock and Fisheries Development and Ministry of Cooperative Development) for the financial years between 1990/2000 and 2002/03.

Table 3.7 Total public spending on MoA, 1999 to 2002 (actual in Kshs billion)

	1999/00	2000/01	2001/02	2002/03
Recurrent	4.9	5.8	4.8	3.7
Development	0.3	0.9	1.0	1.3
Total	5.2	6.7	5.8	5.0
Share of GoK expenditure	4.2	4.0	3.4	2.7
Share of GDP	0.5	0.5	0.5	0.4
Agric recurrent as % of total agric exp	94	87	83	74
Agric development as % of total agric exp	6	13	17	26

Source: BMD

Recurrent expenditure accounted for over 70 percent of the total agricultural expenditure, which is dominated by salaries for employees, including extension officers. On the other hand, less than 30 percent is spent on agricultural development, which includes agricultural research and market information, animal health services, crop protection, seed inspection, mechanization services and farm planning services. Government expenditure on agriculture over the period has generally declined, from about 4.2 percent to 2.7 percent, while it has stagnated at about 0.5 percent of GDP. Agriculture still offers the best prospect for economic growth and, as such, more resources need to be directed towards this sector if it is to spearhead economic recovery. The share of total Government expenditure devoted to the MoLFD was 1.7 percent in 2000/01 and declined to 1.1 percent in 2002/03 (Table 43). As a proportion of GDP, the expenditures have ranged from 0.33 percent in 2000/01 to 0.25 percent in 2002/03.

Table 3.8 Total public spending on MoLFD, 2000 to 2003 (actual in Kshs billion)

	2000/01	2001/02	2002/03	2003/04
Total (MoLFD) Expenditure (Kshs billion)	2.8	2.3	2.9	1.1
Share of GoK expenditure	1.67	1.37	1.06	-
Share of GDP	0.33	0.25	0.25	-
Agric Recurrent as % of total agric Exp	78	93	89	86
Agric Development as % of total agric Exp	22	7	11	14

Source: MoALD

On average, recurrent expenditure accounted for more than 80 percent of the funds allocated to the MoLFD over the period, again consisting mainly of salaries, as well as transfers and a small provision for operation and maintenance. Development expenditure accounts for the difference and funds core poverty programmes, such as livestock extension services, fisheries development, development of veterinary farms, and disease and pest control, as well as other development initiatives, such as research and extension, inspection and quality assurance, infrastructure, and monitoring and surveillance. For the sector to grow, more funds should be allocated, especially to fund development projects.

The total MoCDM expenditure, as a proportion of total government expenditure, was 0.165 percent in 2002/03, while as a proportion of GDP it was 0.0452 percent (Table 44). Recurrent expenditure accounted for 89.5 percent in 2002/03 and this share increased to 97.5 percent in 2003/04, while the share of development expenditure declined from 10.5 percent to 2.5 percent over the same period.

Table 3.9 Total public spending MoCDM, 2000 to 2003 (actual in Kshs billion)

	2000/01	2001/02	2002/03	2003/04
Recurrent	0.2	0.3	0.3	0.2
Development	0	0	0.1	0.1
Total	0.2	0.3	0.4	0.3
Share of GoK expenditure	0.100	0.114	0.165	0.092
Share of GDP	0.029	0.029	0.045	0.024
Agric Recurrent as % of total agric Exp	100	100	89.5	97.5
Agric Development as % of total agric Exp	0	0	10.5	2.5

Source: BMD.

3.5.5 Agricultural production services

The low allocation of development expenditure to the agriculture sector is testimony that increasingly, the Government has reduced direct provision of production services, leaving them in the hands of the farmers and private players. The Government's funding of different domestic support measures to the agriculture sector is indicated in Table 45. The Government has, in the recent past, increased its funding to support services, such as marketing and research, and seed inspection on nominal terms since 1990, as opposed to provision of direct domestic production support measures, such as artificial insemination, tractor hire, aerial spraying, veterinary services and farm planning (Mugunieri, Omiti and Irungu, 2002; Nyangito, 2003).¹²

Table 3.10 Expenditure in agricultural production services 1980 to 2000 (Kshs million)

Year	Marketing & Research	Artificial insemination	Aerial spraying	Tractor services	Govt vet services	Seed inspection service	Farm planning
1980	2 624	17	120	2 363	31	46	1
1981	2 703	17	124	2 435	32	47	1
1982	2 919	18	130	2 523	32	48	1
1983	3 066	19	135	2 611	35	48	2
1984	3 126	19	137	2 676	38	48	2
1985	3 281	20	139	2 944	50	82	2
1986	3 081	15	141	1 052	174	113	4
1988	3 174	18	140	2 073	112	104	6
1989	3 139	17	144	1 783	143	111	6
1990	9 315	18	141	2 027	122	110	6
1991	9 789	17	144	2 030	125	110	6
1992	9 559	17	144	1 843	141	117	5
1993	10 700	16	145	1 800	146	119	4
1994	9 815	15	140	1 805	148	121	5
1995	10 450	16	149	1 924	158	129	5
1996	11 240	17	160	2 071	170	139	5
1997	11 688	18	166	2 152	177	144	5
1998	12 621	19	179	2 324	191	156	5
1999	12 998	20	184	2 393	197	161	5
2000	12 152	19	172	2 237	184	150	5
<i>Average</i>	<i>7 021</i>	<i>17</i>	<i>140</i>	<i>2 051</i>	<i>115</i>	<i>100</i>	<i>4</i>

Source: Kenya, Statistical Abstracts (various years)

¹² Domestic support provided through general services and public stockholding for food security purposes and strategic reserve operations (Green Box measures) was estimated at Ksh. 3 791 million in 2000, of which agricultural education accounted for 29.7 percent.

The latter services are considered as direct subsidies for agricultural production. This is allowed for developing countries under the SDT clause for developmental measures, under the Agreement on Agriculture of the WTO. The low levels of funding for these direct services means that the costs of these inputs to farmers for agricultural production have increased. This has been a particular problem in maize production, where the cost of fertilizer increased substantially with liberalization of the inputs market.

While liberalization of service provision was expected to improve the efficiency in service delivery, not all services have improved. It has been shown that extension and veterinary services have improved in most areas, while the delivery of artificial insemination has deteriorated. A study conducted in Central Kenya reveals that 85 percent of smallholder dairy farmers reported that Government extension and veterinary services were available and 60 percent of the farms reported using the services. Private veterinary services were also available to 80 percent of the farms, of which 60 percent reported using them. For the case of private extension service, 15 percent of the farms reported its availability (Staal *et al*, 2001). The trend in AI services is grim. The study revealed that only 30 percent of households reported its availability from cooperatives and 25 percent reported its availability from private practitioners. The study further revealed that, overall, over 71 percent of sampled households used bulls for breeding, which could imply that the lack of selective breeding may pose a long-term constraint to continued productivity increases if reduced use of AI leads to a degradation of herd genotype.

What is obvious is that the Government should increase its support to agriculture and reduce bureaucracy, which stalls development. This sentiment has been supported by Schapiro and Wainaina (1989), who note in reference to Kenya horticulture sector,

... government-sponsored research, training, monitoring and other activities facilitated the expansion of the horticultural sector. However, it is what the government did not do – create a large bureaucracy structure and interfere to a significant extent with the market mechanism – that is most impressive. Without this combination of government assistance and government restraint, it is highly unlikely that expansion in horticultural exports would have been as rapid or as large.

3.6 Development strategies and programmes in agriculture

Policies affecting agriculture consist of government decisions that influence the level and stability of input and output prices, public investment, costs and revenues, and allocation of research and development funds to improve farming and agriculture-related processing technologies (Nyangito, 2001). Some of these policies affect agriculture more directly than others, particularly the sector policies affecting particular commodities and production techniques. These have included, in particular, quantitative controls, subsidies and taxes on inputs and outputs. Policies that affect agriculture indirectly are of two types. One set is macro policies that affect agriculture by defining general trade regimes, interest, exchange, and wage rates. The second set of indirect policies is concerned with investment decisions in provision of services, such as research and development, education, health, transport, market infrastructure and institutions, which have a broad impact on agriculture sector productivity. These policies can be broadly classified into:

- Pricing and marketing, including marketing institutions;
- Research and extension;
- Land, credit and financial institutions, including the role of cooperatives;
- Infrastructure investment, including transport and irrigation;
- Food security and self-sufficiency; and
- Agricultural input policies.

Several policy initiatives have been issued and documents have been prepared since 2001 to highlight the Government's objectives regarding sustainable growth and socio-economic development, and to build overall programmatic frameworks for their implementation. The most important policy documents are discussed below

3.6.1 The Poverty Reduction Strategy Paper (PRSP), 2001–2004

This document outlines priority areas and measures necessary for poverty reduction and economic growth. The PRSP was prepared through a consultative process in all districts and involved the Government, the private sector and the civil society. In it, Government commits itself to priority actions in two broad areas:

- 1 Creating opportunities for rural communities and the private sector to effectively carry out their activities in an increasingly competitive global environment; and
- 2 Accelerating policy and institutional reforms, particularly the large backlog of legislative and regulatory reforms.

During the PRSP consultations, agriculture and rural development (ARD) in general, received top ranking as the key sector through which to tackle the increasing level of poverty. The ranking within ARD (in descending order) was crop development, rural water, livestock development, food security, lands and settlement, environmental management and fisheries (Agriculture Sector Brief and Horizon, 2015).

Within agriculture, crop development is the priority sector, with poor extension services, inefficient rural financial systems, the poor state of rural infrastructure and poor marketing and distribution systems being identified as the main constraints. In the livestock sector, the PRSP identified marketing systems and infrastructure, disease control and extension services as priority interventions. The challenge for the Government is to mobilize the necessary resources and build the institutional capacity to implement the proposed measures.

The causes of poverty were identified as:

- Low agricultural productivity and poor marketing;
- Insecurity;
- Unemployment and low wages;
- Bad governance;
- Land issues;
- Lack of infrastructure, especially roads;
- Cost of social services and education;
- The HIV and AIDS epidemic; and
- Gender imbalance.

The PRSP has addressed the removal of these causes and it is hoped that extreme poverty will be reduced by 50 percent by 2015, while the overall target is to reduce poverty prevalence to less than 30 percent by the same year. The strategies to achieve these targets in the agriculture sector include:

- Crop development through improved extension services;
- Provision of credit to the smallholder farmers;
- Improvement of the rural infrastructure, including roads for ease of transporting farm produce to the markets;
- Development of marketing linkages between producers and consumers through the provision of market information; and
- Capacity building for the institutions charged with the implementation of the strategies.

3.6.2 The Economic Recovery Strategy for Wealth and Employment Creation (2003–2007) (ERSWEC)

This document lays out the main policies of the new Government. The Strategy intends to restore and sustain economic growth, generate 500 000 jobs per year to absorb the over 2 million Kenyans who are currently unemployed and reduce poverty. It lays out the main agricultural policies, which are further elaborated two draft documents:

- 1 The Strategy for Revitalizing Agriculture (SRA), 2004–2014 Developed by the Ministry of Agriculture, this is a joint strategy with the Ministry of Livestock and Fisheries Development, although this Ministry has also developed its own Strategic Plan (see below). The SRA makes bold and potentially far-reaching proposals. It accepts the growth target for the sector of 3.1 percent, but does not say where the growth will come from. However, its analysis of the key constraints to Kenyan agriculture indicates that this is the beginning of a process that may more clearly define and achieve that target. The SRA recognizes low productivity as the key constraint in Kenyan agriculture, resulting in symptoms like high production costs and competition from imports. The productivity problem is broken down into three components – extension, research and economic and financing concerns. The extension problem manifests itself in the lack of awareness or use of existing productivity enhancing technologies, while the research problem, as laid out in the SRA, refers to the non-existence of appropriate productivity enhancing technologies. The economic and financing problem occurs as farmers being aware of, but unable to afford available productivity-enhancing technologies. This is attributed to some of the poor services they receive in terms of the policy, legal and regulatory framework, the input and output marketing services that result, and the poor access of the agriculture sector, particularly the typical small-scale producer, to different types of financial services.
- 2 The Ministry of Livestock and Fisheries Development Strategic Plan 2003–2007 The Strategic Plan gives further insight into the Government’s priority interventions in the livestock sector. In the area of disease control, related to enhancing the export of livestock products, the Ministry proposes to develop and implement disease and pest eradication programmes, develop and operationalize disease-free zones, and set up risk analysis and trace-back systems to meet the requirements of international livestock markets. The strategy also calls for a streamlined legislative policy framework, review of the National Livestock Policy, the policy regime surrounding the provision of veterinary services, and the Wildlife Conservation Act, which does not allow ostriches, crocodiles and other emerging livestock species to be domesticated. Liaison with various Government departments will be used to enhance security in livestock producing areas (Agriculture Sector Brief).

3.6.3 *The National Development Plan (NDP), 2002–2008*

The plan is a statutory policy document outlining the development policies and strategies to be pursued by the Government and other development agencies over the medium-term (a seven year period) and was launched around the same time as the PRSP.

3.6.4 *The Kenya Rural Development Strategy (KRDS), 2002–2017*

This is a longer-term framework document outlining a broad range of strategies for improvement of rural Kenya over the next 15 years. Considering food security promotion and attainment as the initial step towards poverty alleviation and equitable growth and development in rural areas, the KRDS is a roadmap for Government, private sector, civil society (religious groups, NGOs, rural communities, CBOs) and other development partners.

Several policy actions and interventions are proposed within the KRDS framework to facilitate the process of rural development, with agriculture providing the stimuli, resources and markets. Agricultural growth must serve as the catalyst for broad-based economic growth and development. Through forward and backward linkages to the non-farm economy, agriculture will generate raw materials, employment, income, larger markets and growth in the rest of the economy (Horizon, 2015 and Agriculture Sector Brief).

CHAPTER 4: IMPACT OF FOOD IMPORT/AID

This chapter is devoted to understanding the various impacts of food imports and food aid. Reliance on food imports/aid has a wide range of implications that deserve a closer examination. The opponents of food aid have a number of arguments. First, food aid may have adverse effect on local production, since it could lead to lower prices, hence discourage local producers. The lower prices could reduce the incentive to invest in production, while increasing demand for the commodity, which could further increase dependency on food imports and food aid. Second, the amount of food aid could be unpredictable because it depends on the whims of policy makers in the surplus countries and if not forthcoming, could lead to starvation and death in the recipient nation. Third, the effectiveness of food aid on nutritional status of vulnerable groups could be small if not accompanied by financial or other support necessary to transport and distribute it to points of need. Fourth, given that some aid is provided in the form of loans, this could worsen the recipient nation's debt burden. Fifth, food aid could be a method of disposing food surpluses of donor countries, which may be inferior to the recipient country (e.g. yellow maize in Kenya). Sixth, food aid depends on the surplus in developed countries hence it could be erratic in volume. Thus, it is uncertain that the needy country will be provided with adequate food. Lastly, food aid could reduce the urgency of solving food security problems as it increases the availability of food [Iseman and Singer, 1977, Ndegwa 1989].

4.1 Impact of Food Import/Aid on Food Security and Nutrition Situation

In the short run, food import or food aid is an important source of food security for vulnerable groups. This is so especially in the arid areas that are frequently afflicted by droughts and crop failures. Food imports and aid at such times serve to fulfill transitory food security requirements for vulnerable groups during such calamities as drought, floods, fires, and displacements through civil strife or in feeding refugees. By improving the status of poorly fed people, food aid may be a source of human capital formation, which in turn would be productive in their agricultural production activities. WFP has been involved in school feeding programmes in the country that has improved school attendance but there are doubts of the children's nutrition. School feeding projects have benefited Turkana, Machakos, Kitui and Baringo districts with activities being coordinated by the Catholic Relief Services. Another component of food aid is food-for-work projects. It is argued that such projects allow food to reach poor rural women who are more likely to make sure that the food supplied are consumed within their families than men would do since at times they are known to sell the relief food.

4.2 Impact on Prices and Domestic Production

Food imports have been shown to reduce domestic food prices, stifle domestic food production and act as a disincentive to farmers and hence reduce food production in importing countries. In Kenya, before the 1990's, food imports were low since food consumption was almost commensurate with domestic food production. However, after 1992 imports have been high because of the decline in domestic production. The largest amounts of imports constitute cereals, sugar and dairy products from developed countries that include the USA, EU and Australia. These are countries where food production is highly subsidized and pose a threat to domestic production of food commodities in Kenya.

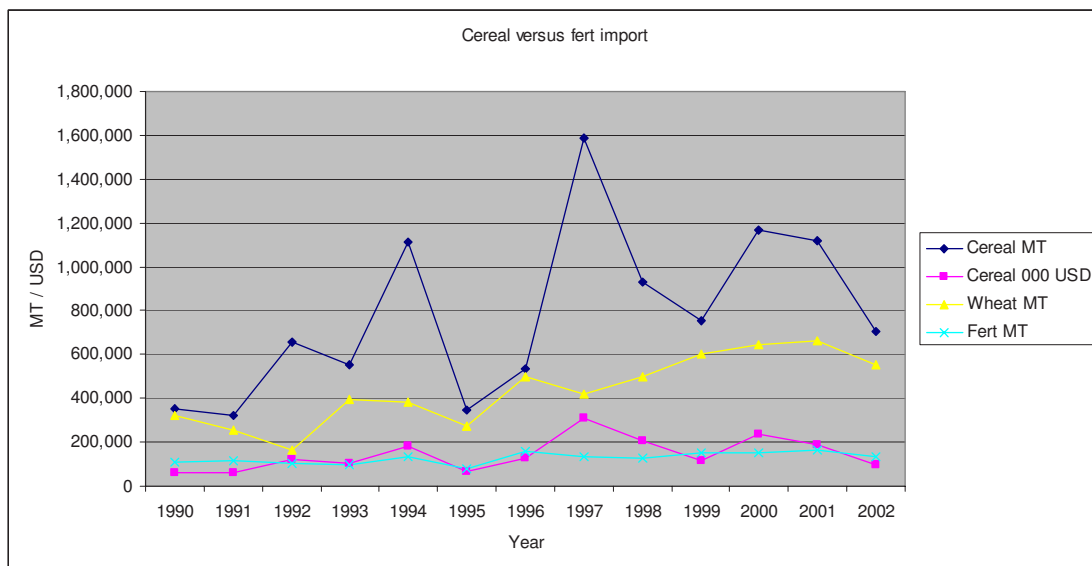
Subsidized food import enters Kenya at low prices, forcing domestic prices to decline, hence threatening domestic production of food commodities. Cheap food imports reduce the market for domestic agricultural products and leave many farmers and workers in agricultural related industries without a source of income unless they are able to switch to production that is more profitable (Nyangito 2001). This means that even if low-cost food supplies are plentiful, many people will be unable to purchase them. This is particularly so when the imports dampen domestic producers prices thereby reducing incentives to produce. Food imports

represent unfair competition to domestic producers since they increase supply and lower prices in the markets (Schuh, 1982). Food aid may have some rather serious disincentives on domestic agricultural production especially when such food aid is used primarily as a means of dumping excess produce abroad. At times in Kenya, imported food commodities such as maize, rice and sugar have been far much cheaper than the locally produced ones. In such cases domestic producers have been unable to offload their produce to the local market since the prices offered do not cover their costs of production.

Food imports distort labor markets especially where the country is highly dependent on agriculture as a source of employment (Todaro, 1960). Since agriculture in such areas is perceived to be low paying, less labor will be devoted to agricultural production and this is likely to dampen agricultural production. The labor is then shifted to the non-agricultural sectors (high level of rural to urban migration) as such ventures are supposed to yield higher income that can be used to buy cheap imported food. This is particularly important in Kenya where the labor force is affected by HIV/AIDS. Cheap import also shifts demand towards imported non-traditional foodstuffs because tastes and preferences change as they get used to imported foods. This is reflected in the stagnation of traditional crop production as a result of rapid expansion of demand for non-traditional crops such as wheat (Figure 12).

In Kenya, growing dependence on food import contrasts sharply with stagnation in fertilizer import. As shown in Figure 12, the quantity of fertilizer imported stayed well below 200,000 MT between 1990 and 2002, while cereal import rose to 1,600,000 MT in 1997 (over 8 times the quantity of fertilizer import). In 2001, Kenya imported over 600,000 MT of wheat, nearly three times the quantity of fertilizer imported to the country. It appears that the food gap in Kenya would have been met from domestic production if only fertilizer equivalent to about a fourth of the volume of cereal brought to the country was imported (assuming that a quintal of fertilizer would increase cereal production by about four quintals).

Figure 4.1: Fertilizer imports versus production of maize, wheat and rice (1990-2002)



4.3 Impacts on Budgetary Support/Counterpart Funds.

A country's dependence on counterpart funds for budget support may cause it to fail purposely to develop its agricultural sector in order to continue to receive this cheap form of budget support (Schuh, 1982). Such practices are common in low-income countries that devote little resources to their agricultural production but

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are known to always beg for assistance from donors to feed their rural populace. These trends are worrying when considering that in Kenya for example drought and floods always recurs in some particular areas each two years yet not much effort is directed towards irrigation or flood control that would boost agricultural productivity in such cases.

Food aid gives greater command of domestic resources to recipient countries as source of budget support. For example, it has been estimated that United States of America food aid alone financed 25 percent of the Bangladesh budget in 1976 and of course food aid financed a significant share of the budget of India's central government during the 1960's. Food aid that goes through government's hands does give the recipient government more control over local resources. The effect of food aid on development depends on how the resources are utilized. If they are used to support a bloated bureaucracy, for example, their contribution to development is likely to be small. If they are used for high payoff investments, their contribution can be substantial. Past experience with food aid programs would suggest that counterpart funds can lead to complacency in developing appropriate domestic fiscal instruments for mobilizing domestic resources and that they can and are often used to support bloated bureaucracies. Moreover, attention should be given to avoiding dependency on counterparts' funds and to assuring that resources provided are used prudently.

A country's dependence on counterpart funds for budget support may cause it to fail purposely to develop its agricultural sector in order to continue to receive this cheap form of budget support (Schuh, 1982). Such practices are common in low-income countries that devote little resources to their agricultural production but are known to always beg for assistance from donors to feed their rural populace. Kenya is one of such countries, which has continued to depend on food aid. For example, drought and floods always recur in many areas of the country and yet not much effort is directed towards irrigation or flood control that would boost agricultural productivity in such cases. The common response that seems to have become officially acceptable is that a National Disaster Management Committee is always constituted hurriedly and the head of state seeks for assistance from development partners to mitigate the effects of that particular natural disaster. Once this has been sorted, the committee goes into limbo only to be reconstituted when the disaster recurs. The tragedy here is that the government spends a lot of resources that would have been used to tame the calamity.

As indicated above, though agriculture contributes about 25 percent of the national GDP in Kenya, agricultural expenditure as a share of total government budgetary allocations is typically less than 5 percent. Even in cases where expenditure is allocated, it is used on recurrent expenditures rather than development, which would have a positive effect on poor people. As a result, the agricultural sector has traditionally lagged behind the manufacturing and service sectors in growth.

4.4 Impact on Foreign Exchange/Balance of Payments

Food aid acts as substitutes for commercial food imports thereby providing a net foreign exchange transfer and can also be used to generate capital for development through the utilization of counter part funds generated by the local sale of program food aid to develop infrastructure such as roads, agricultural research and extension of rural health and education facilities, [Ndegwa 1998, Barret, 1998 and Gillis et al 1992]. Provided the foreign exchange is available, food import would benefit the poor and vulnerable groups by increasing the supply and lowering prices, especially at times of shortages. Cheap imports would allow consumers to access food cheaply, thus contributing towards lower wages in favor of the non-agricultural sectors.

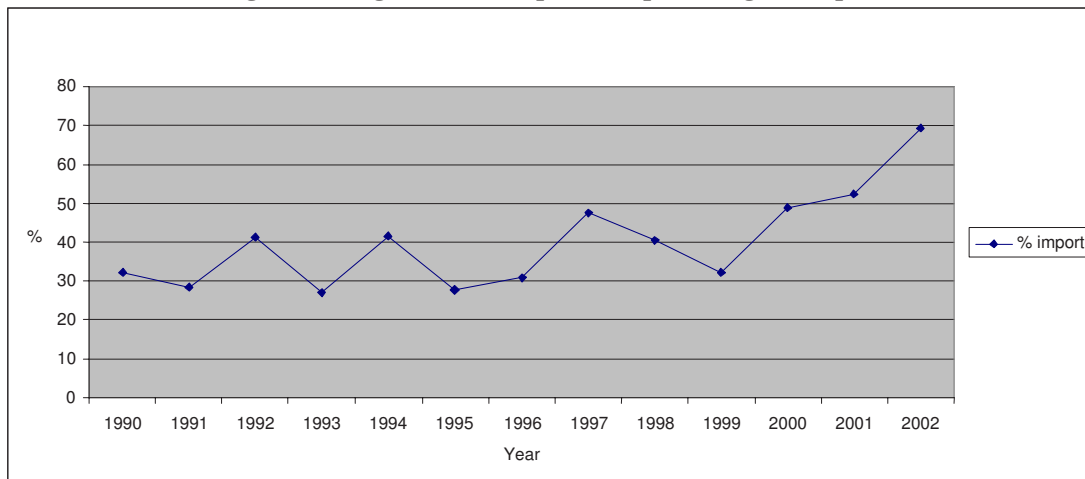
The original magic of food aid of course was that it could alleviate balance of payments constraints, thereby freeing foreign exchange for development purposes. That it could do this with resources that had essentially zero value to the donor country and that in addition it would generate counterpart funds in the recipient country that would make it a second contribution to the recipient. This original thinking has been overtaken by events and it is now widely acknowledged that food imports/aid do drain foreign exchange savings for developing countries and restraint their ability to meet their foreign exchange needs. If food aid and financial aid are offered on the same terms, financial aid then obviously becomes favorable. The softer terms that prevail for food aid are in effect compensation for the disadvantages of aid in kind. The concessional terms on which food aid is provided cause recipient countries to place a lower value on the resources so acquired and in turn use them in a manner that distorts the local market and increase demand for more food import (at the cost of traditional crops such as roots and tubers). Indeed, the volume of imported food items has been growing rapidly in recent years. Kenya spent over 0.5 billion US\$ on agricultural food import (mainly primary and processed food and livestock products) in 1997, 1998, 2000 and 2001 (Table 20). The cost of agricultural import is rising rapidly and absorbing up to 69 percent of the value of agricultural export (Figure 13). The trade balance within the agricultural sector is likely to be very small or even negative if the import cost of fertilizer and other inputs used in agricultural production is accounted for. The danger of such dependence is evident when the country is affected by drought that adversely affects export production or faces sharp decline in world prices for the commodities it exports.

Table 4.1: Value of Agricultural Imports and Exports (Primary and processed crops and livestock)

Year	Agricultural Imports	Agricultural Exports	% Imports
1990	221,135	687,497	32.2
1991	181,331	640,585	28.5
1992	334,747	812,331	41
1993	262,264	975,263	26.9
1994	434,911	1,044,306	41.6
1995	317,776	1,152,419	27.6
1996	372,751	1,213,649	30.7
1997	549,968	1,156,599	47.6
1998	558,532	1,383,613	40.4
2000	500,359	1,021,487	49
2001	548,704	1,049,771	52.3
2002	390,104	563,073	69.3

Source: FAOSTAT

Figure 4.2: Agricultural Import as a percentage of Export



Source: FAOSTAT

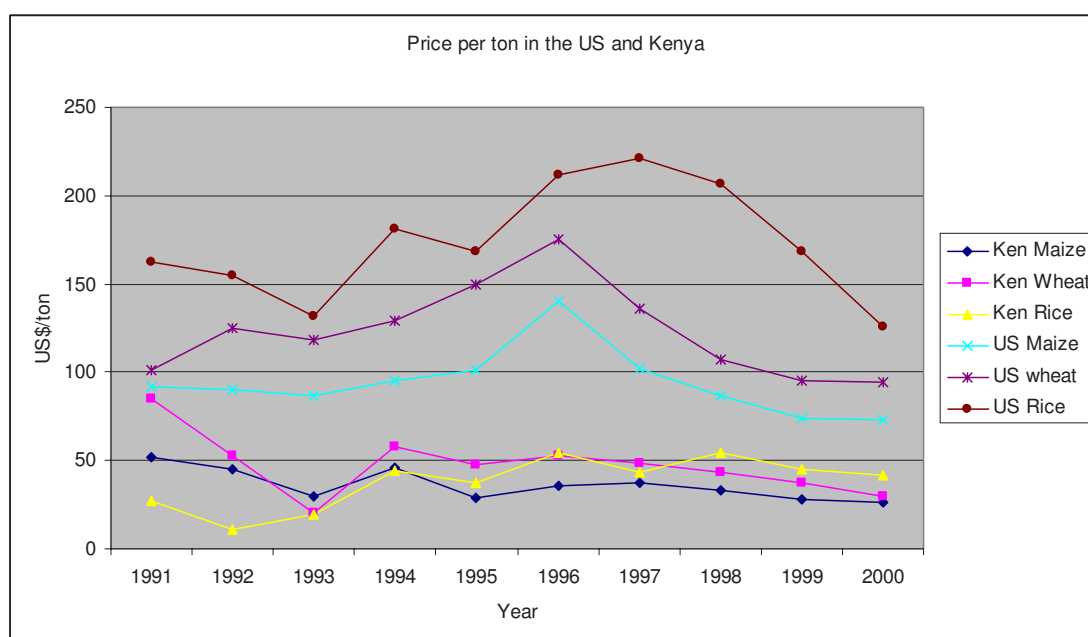
The role of food import in releasing the land under food production for cash crops may be a worthy venture for a developing country like Kenya that has a comparative advantage in cash crops and greatly needs foreign exchange for economic development. However, the drain on the foreign exchange reserves to buy food has to be compared against the returns from exporting these cash crops. In Kenya, cash crop farmers especially in tea growing areas have been known to prefer buying food crops from the market rather producing them along with their export crops. However, the country has enough land and labor resources to produce food crops at a lower cost than many countries currently exporting to Kenya. For instance, the producer price of maize, wheat and rice in the United States averaged US \$94.1, 123.0, 173.2 per ton, respectively, during the period 1991 to 2000. By contrast, market prices for maize, wheat and rice in Kenya were only US \$ 36.22, 47.56 and 34.81, respectively. Producer prices in the US were 2.6 times higher in the case of maize and wheat and nearly 5 times in the case of rice (Table 20 and Figure 14). A good part of the production cost in the US is paid by the government (because of the subsidy) and the grains are often dumped in the world market at lower prices or shipped to developing countries in the form of food aid. In the absence of any distortion in the world prices, Kenyan farmers are likely to be competitive in the domestic as well as export market. Hence, Kenya will be much better off if the foreign exchange (generated through export of cash and high value crops) is used for building the institutional and technological capacity of food producers rather than using the proceeds for importing food items.

Table 4.2: Market prices in Kenya versus Producer Prices in USA.

Year	KENYA			USA		
	Maize	Wheat	Rice	Maize	Wheat	Rice
1991	52.06	85.16	27.25	92	101	162
1992	44.12	52.79	11.02	90	125	155
1993	29.57	20.63	19.16	87	118	132
1994	46.09	58.23	14.11	95	129	181
1995	29.08	47.28	37.32	101	100	168
1996	35.74	52.96	54.33	140	175	212
1997	37.55	48.40	43.69	102	136	221
1998	33.05	43.49	54.27	87	107	207
1999	28.31	37.07	45.16	74	95	168
2000	25.98	29.62	41.79	73	94	126
Average	36.22	47.56	34.81	94.10	118.00	173.20

Source: FAOSTAT for US price data; Market price in US\$ for Kenya came from Oluoch-Kosura, W., Kenya Country Report, for Lund University, African Food Crises: The Relevance of Asian Models, June 2003.

Figure 4.3: Price per ton of maize, wheat and rice in the US and Kenya



Source: FAOSTAT for US price data; Market price in US\$ for Kenya came from Oluoch-Kosura, W., Kenya Country Report, for Lund University, African Food Crises: The Relevance of Asian Models, June 2003.

4.5 Impact on Transaction Costs

Food imports and food aid increases the transaction costs for developing countries. Transaction costs associated with food imports including aid constitute licensing, transporting, distributing, administration and enforcement of property rights. In Kenya for example, the licensing of

agricultural imports such as sugar has been tainted with a lot of hue and cry. Vested interest groups would want to be licensed to import cheap sugar and sell into the domestic market yet the administrative cost of licensing and enforcing the required standards of imports may be prohibitive.

Food imports have to be transported from the ports of entry to benefit domestic rural markets. Even the cost of shipping, insurance and freight has to be included. Transport costs in Kenya are quite prohibitive given the state of its infrastructure. Owing to the high costs of transport, then imported products are likely to be highly priced as the importers seek to transfer the cost of transport to the eventual consumer. Food aid on the other hand has to be distributed to the emergency or disaster areas. Such distribution efforts are costly and are often associated with high levels of rent seeking activities and grand corruption. Computations by the Kenya Food Security Meeting indicate that approximately Kshs 27 billion was spent on relief operations, covering up to 5 million people in the country, over the March 2000-September 2002 period. Nearly, 50 % of this cost was devoted to logistics (Horizon, 2015).

4.6 Some Social Impacts of Food Aid

Food aid commodities are often viewed by consumers in recipient countries as being inferior to those domestically produced. In Kenya, the provision of relief food in form of yellow maize is viewed by the rural folk as inferior to white maize and that they believe it is used as livestock feed in the countries of origin. In other cases, consumers might doubt the nutritional and health status of the food aid as happened in Zimbabwe in 2001 when the Zimbabwean government rejected GM maize food aid owing to safety concerns. Such views might affect the psychological feelings of the consumers and as a result, some people might detest the food aid.

In Kenya, people dependent on relief food tend to devote less resource to own production since they keep on postponing production decision-making processes to benefit from the free food. Though it has not been documented, there are certain dry areas of the country where food aid has become a common phenomenon. Examples include Ndeiya location in Kiambu District, parts of Machakos and Kitui Districts, Turkana District, and some parts of Tana River, Kwale and Kilifi Districts. Some of these areas and in particular Ndeiya, parts of Machakos, and Kitui have in some instances produced surplus foodstuffs which they should have stored for future consumption but they have opted to sell it with an expectation that they shall be provided with food when the need arises. It has been argued that the reason for selling the foodstuffs has been largely due to the level of poverty and partly because they have always expected the government to organize for their food. The dependency syndrome that results from constant use of relief food enable the political elite to easily suppress development in such areas and as such marginalize further residents of such areas. Relief-dependent persons have to spend a lot of time on applications and queues actually get the food. The time could have been productively used in own production or income earning activities rather than awaiting disbursement of relief food. Such inefficiencies in time use breed laziness that is counterproductive. In the long run, such people end up not educating their children and perpetuating the vicious cycle of food aid and poverty. These conditions are not desirable for any nation's development. Given the undesirable effects of food aid on human capital development and the psychological impacts on development, food aid should be discouraged while efforts should be made to improve the food security status of rural people.

Food import /aid would not be beneficial for vulnerable groups in the long run since it introduces a dependency syndrome for these groups know that even if they do not produce, relief food will be

availed. Moreover, food aid in Kenya has often been used as a political tool during election years and has been associated with high levels of inefficiency in distribution especially if it is undertaken by the provincial administration. Distributions of food aid and food-for-work initiatives lead to high levels of wastage and pilferage by both pests and humans and problems of sale of food aid by local administrators. This makes it difficult for the deserving cases to benefit from the relief food.

CHAPTER 5: MAKING KENYA FOOD SECURE ON SUSTAINABLE BASIS

Kenya's declared intention since independence in 1963 to be self sufficient in food production is well known [GoK, 1981]. However, it is only in the first decade of independence that she was able to come close to self-sufficiency in maize production. She has therefore been depending on food import/Aid over a long time. The country therefore must put in place strategies to reverse the situation and ensure that Kenya become self sufficient in food and that she can produce surplus for export. If Kenya is to move away from food import/Aid dependency, bold steps must be taken to implement policies that can revitalize agriculture and food sector by focusing on promising agricultural opportunities on a sustainable basis.

5.1 Macroeconomic and regulatory Environment

The immediate post independence period was characterized by impressive agricultural performance, which in turn spilled over to other sectors of the economy leading to marked improvement of the Kenyan people. The impressive performance was due to a combination of factors including stable fiscal and monetary policies (favourable taxation regime, low inflation, stable exchange rate, positive real interest rate and high investments and savings), government policy and especially the maintenance of good macroeconomic management and the fact that there was an expansion of land under cultivation. The government was also extensively involved in production, distribution and marketing. During these early years of independence, agricultural policies were aimed at achieving equity, employment and self- sufficiency. Thus, the government put in place incentive structures with the goal of promoting production of specific commodities in line with the state development goals and targets. For example, policies on maize production were aimed at ensuring food self- sufficiency [Kimenyi, 2002]. In addition, the government played an important role in providing supportive infrastructure and agricultural services. Various institutions complemented agricultural activities in areas of credit, marketing, distribution and research.

The reform that began in early 1980s was intended to reduce state involvement and market distortions. But liberalization, as discussed in chapter 3 above, has failed to provide the desired services. The country's dependence on food import/ aid has increased owing to inadequate research and extension services, lack of credit, high input costs, etc.

The domestic operation of the various food crops as well as the livestock products are governed by a number of chapters of the Kenyan law. The law gives power to a particular organization to control and regulate the production and marketing of a given crop or a particular livestock product. The government had enacted these laws for the purpose of ensuring that the country was self sufficient in the various products. The law also controlled the movement of products like maize, wheat, cotton and pyrethrum. One required special permission to move a product from one district to another.

Maize and wheat were controlled by Cap 338 while rice was under Cap 347. The National Cereals and Produce Board and the National Irrigation Board were established under these laws respectively. The parastatals controlled the prices and payments for the deliveries by the farmers to the Board stores.

In 1993, the IMF/World Bank instituted the Structural Adjustment Programs under which the prices of wheat and maize were liberalized. The liberalization would not take effect until an enactment of a law, which would remove some of the sections in the previous chapters of the law. In order to speed up the legalization of the liberalization process, the government put up gazette notices.

While the general policy has been to liberalize, the regulatory framework still supports controls, therefore conflicting with the commercial mandate of the installations supporting the food crops. In some cases like the rice industry, the problem has been compounded by lack of reforms in the tenure system under which the rice is grown. The regulatory framework needs to be harmonized with the policies and this should, to a great extent be a participatory process between the policy makers and the farmers.

In short, the following strategies should be adopted in order to increase growth in the agricultural sector:

- Improve and harmonize regulatory framework and agricultural policies.
- Increase the budgetary allocation to agriculture.
- Diversify the agriculture sector by moving towards high growth activities e.g. horticulture, tea, coffee, livestock etc.,
- Restore support for extension services for growth and development,
- Maintain a realistic exchange rate to help agriculture grow and maximize role as key to export earnings growth,
- Harness domestic savings and conditions for the use of foreign exchange savings and opportunities for overall gross investment and growth, and

5.2 Development of Infrastructure

The major problems that hinder agriculture development are poor roads, transport and communications. Most of the roads in the agricultural areas are impassable especially during the rainy season resulting in the underutilization of high and medium potential areas. The farmers also lose due to wastage, as the produce cannot get to the market. The poor road network increases the transportation costs for inputs and output thereby reducing profit margins of the farmers. Other infrastructures include inadequate, expensive and unreliable telecommunication, which has hampered quick and efficient flow of information from farmers, traders and other investors in the rural areas. High costs of power and installation costs for electricity also affect the establishment of agro-industries, irrigation and cold storage. Water for irrigation, livestock, processing and domestic use is another limiting factor in the development of agriculture. The monitoring and protection of water supply against pollution and preservation of water catchment areas have been considerably neglected. The agriculture sector has depended on rain fed crops as a result of the lack of development of irrigation systems. Marketing infrastructure such as storage, markets and cooling facilities are either lacking or inadequate leading to high post harvest losses.

The following strategies will be put in place to address the constraints above:

- Rehabilitation of and expansion of rural infrastructure such as repair and maintenance of roads,
- Provision of electricity to the markets,
- Construction and maintenance of water supplies and dams using locally raised funds and subvention from the central government,
- Rehabilitate existing and construct new cooling facilities at the ports and develop market centres, and
- Rehabilitate the existing irrigation schemes and establish new ones with a view to using irrigation instead of rain fed crops as a way of improving the agriculture productivity.

5.3 Rural Financial and Credit Facilities

The financing of agriculture should be incorporated in the incentives being offered to credit lenders in the agriculture sector, particularly for small-scale producers, the majority of who are women. The agriculture sector is viewed as a high-risk industry and the lenders must be assured that their money is recoverable. Among the constraints in the provision of credit to the smallholder farmers are the risks involved, the performance of the economy, low productive capacity, marketing of the produce, the mismanagement of the Cooperative Societies and the poor performance of the Agriculture Finance Corporation.

Building a Case for More Public Support

The proposed measures to address the constraints would include:

- Streamlining the management of cooperative societies,
- Support of the rural based Financial Institutions,
- Introduce a reduction of taxes or an Insurance Scheme to cover the borrowers in the agriculture sector, and
- Institute a specially targeted credit programme, which can avoid the problems previously experienced by the Agriculture Finance Corporation with the Guaranteed Minimum Returns

5.4 Agriculture Research and Extension Services

Agriculture research continues to suffer from poor management, inadequate funding, manpower instability, limited research-extension farmer linkages and weak monitoring and evaluation. A National Extension Advisory Board should be established jointly between the public and private sector to enhance the linkages between research and its usage. Among the strategies is the investment in agriculture research and extension as well as control of epidemic diseases for crops and livestock because they have a large proportion of public goods components whose returns accrue to the larger society rather than individuals. Furthermore, they also require large capital investment that cannot be undertaken by individuals. Private investors in research and extension services should be encouraged through tax rebates and credit. The investors as the end users of research should be involved in research design, planning and implementation. Rules and regulations should be set up to govern those investors to avoid exploiting the farmers [GoK, 2002].

5.5 Human Resource Development

There can never be any economic development without the human resource, which is a major factor of production. The agriculture sector is labor intensive and therefore requires human resource development. To improve the human resource base, the following strategies shall be taken:

- Upgrade the capacities of the agriculture training institutes and especially farmer's training centres,
- Evaluate the needs of the agricultural sector and tailor training to meet those needs,
- Streamline legal and regulatory framework to meet the human resource needs, and
- Strengthen the link between the college of veterinary medicine and Faculty of Agriculture and the ministries concerned with issues of agriculture.

5.6 The need for Activity-Specific Strategies

Kenya's dependency on food imports/Aid can be attributed to a number of factors including erratic weather conditions, under funding of agriculture resulting in poor research and extension services, lack of credit, high input costs, and poor transport infrastructure and poor marketing. However, the various constraints tend to vary by activity, suggesting that blanket recommendation would not solve the problem. Table 21 provides a summary of constraints and strategies/measures to promote production and productivities for the various promising agricultural development opportunities¹⁷. The table is provided in three columns. The first column represents the product; the second column represents the constraints while the third column represents

¹⁷ See Annex I for detailed discussion of the various activities within agriculture

strategies/measures to be funded. Development of high-yielding varieties needs to be accorded the highest priority for most crops. Access to credit, market, and processing facilities is also of considerable importance in the case of many crops. Feed, processing facilities and disease control would play a vital role in the livestock sector.

Table 5.1: A summary of constraints and proposed strategies/measures to promote production and productivity.

Product	Constraints	Strategies/Measures
Maize	Drought, poor extension services, lack of working capital, access to credit and low yielding varieties.	Research on high yielding varieties; extension; promotion of optimal use of fertilizers and improved seed quality assurance.
Wheat	Subdivision of existing farmland, lack of machinery, inappropriate technology for small holders, access to credit, soil acidity, insecurity of tenure, inadequate infrastructure (roads), low producer prices, poor research and extension services.	Research and extension services, credit, market promotion, storage and appropriate technology.
Rice	Conflict over ownership of the rice schemes, low yielding varieties, poor disease and pest control, high cost of production and poor marketing channels.	Research and extension services, land use policy, disease and pest control.
Horticulture	Poor extension services, high freight cost and unavailability of cargo space, poor implementation of SPS and inadequate cooling facilities at the Kenyan ports and high input costs.	Extension services and cooling facilities at Kenya ports provide duty exemption for packing materials and machinery.
Traditional Crops	Poor marketing, poor research and extension and limited alternative use of traditional crops.	Market promotion, and research and extension
Oil Crops	Low producer prices, lack of high yielding varieties, inadequate processing facilities, poor pest and disease control, inadequate quality seeds and poor extension services.	Research and extension, processing facilities, pest and disease control and production of high quality seeds.
Tea	Inadequate tea factories, poor marketing, inadequate research on high yielding drought, frost resistant varieties and poor promotion and high input costs.	Construction of new tea factories, market promotion, and research and extension.
Coffee	High input cost, lack of credit, high processing costs, inadequate extension, inadequate high yield-enhancing technologies, and poor legal and regulatory framework.	Credit, research and extension and value adding exports.
Cotton	Poor seed quality and inadequate seed multiplication, and poor research and extension.	Research and extension, and seed multiplication.
Pyrethrum	Poor marketing, low product prices and increased competition, and monopoly.	Market promotion and liberalize the sub-sector.
Dairy	Poor genetic potential of existing herd, inappropriate institutional framework, disease and pest control, poor artificial insemination service, inadequate credit and high cost of feeds.	Research on improvement of genetic potential, disease and pest control, artificial insemination and credit.
Meat	Poor marketing infrastructure (roads, storage and slaughter facilities), inadequate control of communicable disease, poor extension service, insecurity due to cattle rustling and poor feed quality.	The intensification of feed production, storage and slaughter facilities especially in the rural areas, disease control and the production of quality feed.
Poultry	High initial or start-up capital, high feed cost and diseases epidemic, poor and inaccessible extension services.	A programme for disease control, extension service and provide credit.
Fisheries	Poor infrastructure (access roads, poor storage and landing jetties and beaches, poor extension services, poor quality assurance, heavy post harvest losses, discharge of industrial waste into the water bodies leading to reduction of fish due to pollution and high export sanitary requirement.	The construction of access roads, storage, landing jetties and beaches, extension services, a program for quality assurance, and post harvest technology and waste control.
Forestry and Logging	Encroachment of forest land, excision by the government, lack of a national land use policy, depletion of hard woods stocks, over harvesting, low technology leading to poor recovery rates of 30-40 percent, pollution, and specific supply shortages of important types of wood.	A study for establishment of pulp and paper industry. Analysis of the forestry department assessing its capacity and capability to manage forest resources.

5.7 Investment Program to Revitalize Food and Agriculture Sector

Table 22 below provides feasible investment program to revitalize agriculture and food sector. The program will focus on the following key areas: physical infrastructure development; financial services; human resource development; research and extension; information; legal and regulatory framework; food security strategy; production and export strategy; agriculture subsidies and land policy. The program will be for duration of five years and will cost approximately US\$ 1,650.10 million.

The recommended measures/strategies to revitalize the agriculture sector are short to medium term in direction, as they cannot be sustained for a long time. Accordingly, the farmer must be made aware of the length of the programme. The length of the support would depend on the complexity of the strategy to be implemented. Some of the measures would be short term due to their nature while others would be medium term. Items like research and extension services would be medium term while others like the credit facilities would be as per crop season.

There should also be established criteria for the support, which include increased competitiveness, commodity contribution to the GDP, creation of employment (whether it is labor intensive), food security, income generation, and foreign exchange contribution. The cost cutting measures would be given priority. This could include subsidization of input prices including machinery, herbicides, seeds, fertilizers, services and other major inputs and crop insurance. Other support measures would include market information, export promotion activities, introduction of the SPS regulations, processing, storage, and irrigation schemes, infrastructure provisions including road building and maintenance, telecommunications and rural electrification.

The impact of the support measures would include increased product competitiveness, expansion of markets, better investments when the support is withdrawn and wealth creation. The support alone cannot increase agriculture production and productivity. There must be political good will to create an enabling environment through being focused, pro-active, accountable and committed agrarian leadership able and working to implement the strategy for the betterment of country and the agriculture sector in particular. Table 22 depicts the investment program, which will have an inbuilt mechanism for evaluation and monitoring. The government cannot finance the total investment of the project and the donor community shall be called upon to finance most of the strategies. It would be important to have a permanent solution to the issue of food insecurity. Currently, whenever there is a famine or a disaster, the donor community comes to the assistance of the nation. It is good to teach one how to fish rather than continually giving him fish.

Food insecurity should be approached from all areas. There are lessons that Kenya has to learn from its past when agriculture performed well and Kenya was near food secure. During the period immediately after independence, the government put up measures that enabled the agriculture sector to grow rapidly. Most of those measures were discontinued at the detriment of the sector. It is therefore recommended that the following agricultural subsidies be introduced to effect positive change in the sector for some time:

- Subsidize farm inputs. This would include fertilizers, seeds, chemicals and pest control, artificial insemination and veterinary drugs.
- Provide credit to farmers and fishermen at affordable rates of interest.
- Zero rate duties on imported agriculture inputs, machinery and tools.
- Reduce transport charges by reducing the taxes on imported fuel.
- Reduce agricultural taxes by the local authorities.
- Construct storage facilities including cooling systems to enhance production and rent them out at reduced rents to the private sector.

The Kenyan farmer today depends on food imports and food aid as mentioned elsewhere in this study. It is proposed that the financial sector in the rural areas will be used by the farmer not only as a source of credit, but also as savings institutions. Having been made aware of the time frame for the support, the farmer will prepare himself for the days ahead when he will have to support his farming activities with any subsidies. It is also expected that the support will make the farmer have a niche in the market and the consumers would not mind to pay more as long the quality of the product is guaranteed.

The high level of production through better seed varieties, fertilizer usage and market penetration would help the farmer when the support is withdrawn. The high production would compensate for the reduction in the margins. The market access support would help to enter new markets. Support would also be extended to market research which would encourage developing a supply response rather than relying on our traditional exports. Prices in the traditional markets have been known but when we enter markets, the prices can be adjusted either upward or downward to enable the entrance into the market. The benefits of the market expansion would enable the farmer to overcome any overproduction. The initial period of support as shown in the table is for five years but could be extended in order to cover all areas of agriculture activities.

Upon implementation of the proposed support measures, there will be a number of expected effects to the economy and particularly to the agriculture and food sector. However, it is not possible to quantify the return on investment as of now due to lack of information on the expected export prices and related transaction costs, the impact of the support services, research, extension and credit, and their effect on both production and productivity. The following however are some of the expected agricultural and general income/outcome of the support programme:

- Less reliance on food import/aid,
- More foreign exchange earned,
- High investment and savings,
- Creation of more jobs,
- Reduced level of food insecurity and poverty, and
- Increased Gross Domestic Product contribution.

The objective of the investment program is to guarantee a sustained productive agriculture. Specifically, the program should transform Kenya's agriculture to a highly modern sector where road, financial service, production and marketing constraints have been minimized. In order to exit from this program, farmers without any disruptions must be made to support specific agricultural services out of their savings. A cost-sharing program must be institutionalized in the investment program. For example, farmers should be made to contribute to such services as extension, research, artificial insemination, health services, training and education.

Table 5.2: Investment Program to Revitalize Agriculture and Food Sector

PROGRAM	ACTIVITIES	ESTIMATED COST (MILLION US \$)
PHYSICAL INFRASTRUCTURE DEVELOPMENT	Infrastructural development in rural areas including rural access roads, construction of dams, irrigation and other water control infrastructure, post-harvest technology and storage and cooling facilities, rural electrification, provision of support services, marketing infrastructure for output and input supply among others.	400.00
FINANCIAL SERVICES	Rural financial services to smallholder farmers including revolving fund schemes and insurance scheme. Seed money to be advanced to intermediaries for on lending to farmers.	106.00
HUMAN RESOURCE DEVELOPMENT	Education and Training and strengthening of the farmers Training Institutes.	26.70
EXTENSION SERVICES	Agriculture extension services to improve technology, information and modern agriculture husbandry. Developing of an optimal extension framework that considers elements of existing extension models.	138.50
NATIONAL RESEARCH AND EXTENSION ADVISORY BOARD	Create a National Research and Extension Advisory Board that would coordinate the research and extension services. It would act as a link between researchers and the farmers as users of the research.	3.60
HEALTH RISKS	Developing and implementing a programme on the risk awareness of the use of agriculture chemicals, other health risks including HIV/AIDS, tuberculosis and malaria. This will be in the wider scope of human development.	133.30
INFORMATION DATA BANK	Create a data bank for all major commodities to forecast food production, demand, consumption and food imports. There shall be a national networking so that areas with food deficit can be known and possible sources of food identified. The data bank can be used for early warning of food shortages/surplus.	42.50
CAPACITY BUILDING FOR PRIVATE SECTOR	Build capacities in the private sector organizations that are involved in promoting farming activities including the farmers Associations, Cooperative Societies (to provide the financial support to farmers), NGOs and other Community Based Organizations (CBOs).	36.00
REGULATORY FRAMEWORK	Strengthening legal and regulatory framework to enhance agriculture production. Assistance for complete policy reviews.	16.00
FOOD SECURITY STRATEGY	Formulate and implement a food security strategy which should include agriculture production and intensification system; disaster preparedness and response systems, storage and food security planning, early warning and response system, long term measure to reduce vulnerability to drought and poverty reduction long term policy development.	26.70
PRODUCTION AND EXPORT STRATEGY	Develop an enabling environment for private sector to invest in adding value to products for export and quality assurance for all products and inputs particularly seeds, semen, fertilizers and machinery.	16.00
	Develop a long-term agricultural diversification programme for exports products.	26.70
	Strengthen livestock production methods including adoption of improved animal breeds, high yielding feeds, modern feeding systems and animal health technologies.	53.30
PRODUCTION AND EXPORT STRATEGY	Develop commodity programmes for increased productivity and value adding. Develop traditional crops.	26.70

	Develop efficient and effective marketing system for agricultural outputs and inputs.	8.00
AGRICULTURAL SUBSIDIES	Provide subsidies for fertilizers, seeds, feeds, farm implements, exports and transport.	186.70
RESEARCH AND DEVELOPMENT	Formulate, implement research programmes for identified crops and livestock. The research should be based on farmers' need e.g. high yielding seeds and livestock. There should be a mechanism of disseminating research results. The research would be done by the existing research institutes but specially tailored for the food security programme. KARI is to play a pivotal role in Research, Development and implementation.	400.80
LAND POLICY	Formulate a national land policy in order to harmonize the different land based activities such as agriculture, pastoralism, wildlife, forestry, industrial locations, tourism, and human settlement.	1.30
	Accelerate survey, titling and registration of land	1.30
	Total Five Year Programme Cost	1,650.10

5.8 Implications for the WTO Agreement on Agriculture

The above measures have been recommended after taking the AOA into account and are therefore compatible with the WTO. They do not have any distorting effect on trade under the “Green Box” and or Deminimis exemptions or the Special and Differential Treatment (SDT).

5.8.1 Sanitary and Phytosanitary Services

An important non-tariff barrier that affects Kenya's agriculture is the Sanitary and Phytosanitary (SPS) agreement of the WTO. SPS sets out the rights and obligation of member states of WTO in relation to the health of plant and plant products and animal and animal products that may restrict international trade. The basic aim of SPS Agreement is to maintain the sovereign rights of any government at the same time ensure that these sovereign rights are not misused for protectionists purpose and do not result in unnecessary trade barriers. Nevertheless, Kenya's exports to developed countries markets have been barred by what have been seen to be arbitrary imposition of SPS measures especially for horticulture and fisheries products. Kenya has also witnessed cases in which substandard goods that do not meet SPS standards have been dumped in the Kenyan market. As Njinkeu et al notes, “Developed countries have been able to use environmental concerns to further protect their agriculture by restricting imports from developing countries especially in Africa¹⁴.”

The European Union (EU) requirement for example on the levels of Maximum Residue Level (MRL) allowed on horticultural export is a major challenge to Kenyan producers. Implementation of the zero analytical level means that farmers have to reduce the levels of pesticides used or uses those pesticides, which have very low residual levels. Other SPS measures include; Pest Risk Analysis and Environmental Protection Requirement by export market. Small-scale farmers in particular find it difficult to meet these standards and failure to meet these requirements will sideline most of the exporters, [Nyangito and Nzuma, 2003]. The government should provide technical support to enable the farmers understand and undertake risk analysis and participate in international meetings for setting up the standards.

¹⁴ Exports of plants are subjected to a phytosanitary certificate whereas those of animal and animal products to a health and sanitary certificate.

5.8.2 Support Measures for enhancing External Competitiveness

Kenya is a member of the World Trade Organization and she has committed herself to implement the entire list of WTO agreements. One of the most important agreement is the Agreement on Agriculture, which has three pillars, namely improvement of market access with the objective of liberalizing trade in agriculture and calls for the member countries to reduce tariffs on agriculture trade by 36 percent for developed countries and 24 percent for developing countries, reduction of domestic support measures which are classified into three groups namely allowable measures such as extension and infrastructure commonly referred to as the “GREEN Box”, subsidies on imports commonly referred as the “Amber box” and indirect subsidies to farmers such as purchase of farmers output or payment to farmers not to produce to help raise prices commonly referred to as the “Blue Box”.

Kenya is also a member of the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA) countries, and the African Caribbean Pacific-European Union (ACP-EU) partnership. In each of the membership there are some agreements that are signed for the mutual benefit of all parties. Some of the issues the agreements relate to include removal of tariffs and non-tariffs barriers and the provision of market access to the products of each member state.

The other external effect that has influenced agriculture growth includes the pricing of our exports like tea and coffee where market prices are fixed by world bodies e.g. the World Coffee Buyers Association. The price of imports such as oil is determined by the Organization of Petroleum Exporting Countries (OPEC). To improve Kenya’s competitiveness in the export market several measures should be taken: provide freight and local transport subsidiary; raise tariffs to protect local industry and export subsidiaries for strategic commodities. These and related issues are discussed below.

Freight and Local Transport Subsidy

As mentioned elsewhere in this report, high freight and local transport charges is one of the constraints in the expansion of the horticultural sub-sector. The freight costs are high due to lack of enough cargo space and the expensive jet fuel. The local transport cost is also high because of diesel prices and also due to the poor infrastructure especially the rural roads.

The above constraints can be removed by invoking the Green Box Provision of the Agreement on Agriculture, which allows domestic subsidies to support the competitiveness of the export sector. The government can therefore reduce the duties and taxes on jet fuel and diesel. The benefits would then be passed over to the exporters and producers, which will in turn, reduce transaction costs.

Raising Tariffs to Protect Local Industry

Under the WTO agreements, all WTO member states are required to tarifficate quantitative trade restrictions, bind their tariffs, duties and charges against further increases and to reduce them over time (developing countries by 24 percent annually). Countries are supposed to notify the WTO on the products subject to tariffication and current minimum access conditions, where minimum access is defined as 3 percent of domestic consumption in the base year rising to 5 percent in 2004. Kenya’s binding ceiling is 100 percent but has never gone beyond 35 percent which is not enough to protect such industries as sugar and cereals. Kenya uses the tariff to protect the agriculture industry against dumping and for pricing the local production.

Export Subsidies for Strategic Commodities

Globalization and regional integration offer opportunities for rural development in the country. Kenya has engaged in regional integration through the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA) and Inter-Governmental Authority on Development (IGAD). In addition, Kenya is a signatory to the World Trade Organization (WTO), the Cotonou Agreement, which facilitates entry into the Europe market, and has moved fast to take advantage of opportunities offered by the African Growth and Opportunities Act (AGOA), which opens up the American market to imports from Africa. Effective presence in these markets provides an excellent opportunity to expand the country's rural exports and hence increase household incomes and reduce poverty. This opportunity can be exploited by encouraging efficiency and competitiveness of Kenya's producers relative to actual or potential competitors.

Kenya continues to enjoy some comparative advantage in the production of crops for export such as coffee, tea, pyrethrum, and horticultural crops. In coffee, the country is renowned for its high quality in the world.

Kenya has the opportunity to exploit the regional and international market for fish, live animals and animal products particularly the European Union and Middle East. However the exploitation of these markets will depend on the adequacy of disease control and compliance with technical and phytosanitary standards. The opportunity to exploit the potential on these crops and livestock activities will propel rural development by enhancing the role of these commodities in raising farm income both local and foreign, employment and food security.

Gains from increased investment from agricultural development will depend on the pursuit and maintenance of an open economy. In the delivery of this strategy, Kenya must take advantage of challenges and opportunities provided by the regional and global markets and increased cooperation and globalization. Kenya must not be left behind and the government must take a leading role in ensuring that the country takes advantage of the regional markets in East Africa and COMESA countries in addition to our traditional markets in Europe, America and the rest of the world.

The Uruguay Round on Agreement on Agriculture allows export subsidies but constraints are imposed on the practice. The subsidies have to be reduced by 24 percent in the developing countries. Subsidies to reduce costs relating to export marketing and internal transportation are exempted for developing countries, although no new ones can be introduced. The removal of subsidies has adverse effects on the importing country while the transaction cost in the exporting country goes up and becomes uncompetitive.

Kenya currently has three schemes for companies producing for export namely: the Duty Remission Scheme, Manufacturing Under Bond (MUB) scheme, and the Export Processing Zone (EPZ) scheme. In addition, exports are zero rated for VAT referred purposes (referred of VAT on all goods and services incorporated into their production). The government's estimated the fore gone (potential revenue minus collections), under these schemes at 30 percent of the potential revenue of Kshs 21.8 billion in 1995/96.

Other export subsidies includes the advisory services provided by the Export Promotion Council (EPC) who also assist the exporters' participation in trade fairs, the development of marketing and management skills and improvement of product quality. Financial, technical and marketing services are also provided by the United States Agency for International Development (USAID) and the Kenya Exporter Assistance Scheme (KEAS) to small and medium scale export manufacturing units of non traditional exports.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

This paper has reviewed the agriculture production and food security situation in Kenya. It looks at the various policies that have assisted or discouraged agriculture production and the ability of the country to be food secure. Issues discussed include promising agriculture development opportunities, microeconomic environment to promote investment in agriculture, agriculture subsidies, infrastructure development, rural finance and credit facilities, human resource development, agriculture research and extension services, legal and regulatory framework and an evaluation of the WTO Agreement on Agriculture as it relates to sanitary and phytosanitary services, external markets environment affecting domestic agricultural development, freight and local transport subsidies, tariffs to protect local industry and export subsidies for strategic commodities.

6.1 Conclusions

The importance of agriculture in the economic development of Kenya cannot be over emphasized. It is however clear from the study that there has been a declining trend in the level of government support to agriculture and especially at the advent of the Structural Adjustment Programmes (SAPs). The performance of the sector has been low despite its potential to make the country food secure. The government objective has been to make Kenya self-sufficient in a number of food crops including wheat, maize, rice, milk and meat. The objective has not been realized and Kenya has therefore been increasingly dependent on food imports and food aid. The current policy is to attain self-sufficiency in commodities such as maize, wheat, meat, milk and horticultural crops both for home consumption and export markets and expand the production of coffee and tea for raising farm incomes and earning foreign exchange.

From chapter two it can be concluded that Kenya has the potential to produce surplus food as the case in the 1970s when maize was exported. Food available for Kenyans is 13 percent below the recommended 2,250 calories per day. The calories come from a wide variety of sources but are dominated by maize accounting for 36 percent while sugar, wheat, palm oil, and milk together constitute 64 percent of the total calories.

There is need for research institutions both public and private to compete for donor funds in accordance to competitive grants. This will ensure that the research is done as effectively as possible and that there is no monitoring component in the bids. The farmers' organization and the civil society need to be part and parcel of the agriculture research policy formulations.

There is need to increase food production to offer consumers a wide choice of foodstuffs while ensuring that domestic resources are used efficiently in food crops sub-sector for the benefit of both consumers and producers. The public and private sectors will be expected to invest in extension services to promote adoption of new technologies.

Kenya has continued to import wheat, maize, rice, powder milk, and sugar and receive food aid from various donor agencies targeting mainly emergency and vulnerable groups. The food insecurity is transitory in nature and occurs both in the rural and urban areas, in the medium and high potential, arid and semi arid lands due to poor agriculture productivity and inefficient food distribution system, population growth, unemployment, and high incidences of HIV/AIDS among others. The other reason contributing to food insecurity is landlessness despite large chunks of idle land owned by the state or individuals still existing. The food insecurity has led to high incidences of malnutrition through chronic under nutrition, which has been caused by a decline in per capita supply of the main staple food since early 1980s. The food distribution system is weak and there are instances where one area of the country has surplus food while its neighbours are starving e.g. Kitale in Trans Nzoia district always has surplus maize while their immediate neighbours in West Pokot District are dying due to starvation.

Reliance of food import/aid has a wide range of implications including food security and nutrition, budgetary support and counterpart funds, foreign exchange and balance of payments, transaction costs and social impacts. It has been shown that food import/aid reduces domestic food prices, stifles domestic production and acts as a disincentive to farmers and hence reduces food production. It also distorts labour market especially in a country like Kenya that is dependent on agriculture for employment creation. In some cases, food import/aid makes people lethargic and cannot produce to meet their own consumption needs because they postpone production decision-making waiting to benefit from free food. Food aid in Kenya has also been used as a political tool during election years and has been associated with high levels of inefficiencies in distribution especially if it is undertaken by the provincial administration.

Agriculture contributes 25 percent of GDP, 60 percent of export earnings, 75 percent for raw materials to the industrial sector, and 45 percent of the government revenue. Accordingly, there exists a close relationship between the growth of agriculture and that of the whole economy. The rest of the economy can do well only when agriculture is performing well. It is against this relationship of agriculture and the whole economy that the government has put up policy measures to alleviate poverty through the development of agriculture. A more concrete action is required to address the various challenges and constraints in agriculture: poor agrarian leadership, lack of capacity in farmer organizations, lack of capital, predominance of rain-fed agriculture and globalization, adverse climatic conditions, inadequate infrastructure, lack of effective land policy, low political support, high taxation, poor research and extension linkages, HIV/AIDS pandemic, and declining budget allocation by the government among others.

6.2 Recommendations

This study has identified promising agricultural development opportunities in food crops (maize, wheat, rice, horticulture, traditional crops and oil crops) and cash crops (tea, coffee, cotton, sisal, and pyrethrum), livestock and fisheries, forestry and logging, in cognizance of the fact that Kenya's dependency in food import/Aid is intolerable. The following recommendations will help the country to move from food import dependence to food security and food self-sufficiency.

6.2.1 Physical Infrastructure:

There are a lot post-harvest losses that are occasioned by the poor state of infrastructures including rural access roads, post-harvest technology and storage, cooling facilities and electrification. Examples of these losses include milk that cannot get to the markets, Irish potatoes that have to be sold immediately at low prices because of lack of storage technology, horticulture crops that cannot get to the market because of poor roads. There are also productive areas that do not have electricity and therefore cooling systems cannot be installed. It is therefore recommended that physical infrastructure and especially rural access roads and post-harvest technology be given priority. Investment in irrigation and other water management infrastructures should also expand to overcome the problem of drought and intensify production.

6.2.2 Rural Financial Services:

There is need to develop rural credit schemes which would include giving tax incentives to the banks and non-banking institutions that provide credit to smallholder farmers. The incentive could be in the form of revolving fund schemes, taxes and insurance schemes.

6.2.3 Human Resource Development:

Formulate human development policy for agricultural education and training and create an awareness of the risks of the use of agricultural chemicals, HIV/AIDS and other diseases. Strengthen the capacity of the farmers' organizations for them to play their participatory role in the formulation and implementation of agricultural policies.

6.2.4 Research Programmes:

Formulate and implement focused research programmes for identified crops, livestock, fisheries and forestry and establish a National Research and Extension Advisory Board to act as a link between researchers and the farming community. The research should be demand driven to ensure its utilization and ownership. The National Research and Extension Advisory Board should be composed of the stakeholders, government extension officers and researchers.

6.2.5 Agricultural Extension Policy:

Formulate and implement an agricultural extension policy to improve technology and information flows to the farming community. The extension officers should be enabled through budgetary allocation to visit the farmers and organize field days in their areas. Farmers exchange programs should be encouraged.

6.2.6 Information Data Bank:

Develop an information data bank for all major commodities for forecasting food production, demand, consumption, food import/Aid, strategic reserves and to act information for early warning of food deficit.

6.2.7 Capacity Building for Farmer Organizations:

There is need to build capacities in the farmers private sector organizations to equip them for the task of ensuring food security through effective participation in the policy formulation, implementation and monitoring. The organizations should be able to understand the bilateral, regional and multilateral trade agreements including the WTO Agreement on Agriculture and their impacts on the farmer. They should be able to participate in the negotiations of such agreements.

6.2.8 Legal and Regulatory Framework:

Strengthen the legal and regulatory framework for enhancing agricultural production including the completion of new and outstanding policy reviews.

6.2.9 Food Security Policy:

Formulate and implement a National Food Policy which would include agricultural production and intensification system, disaster preparedness and response system, storage and food security planning, early warning and response system, long term measures to reduce vulnerability to drought and poverty reduction long term programme. The policy would also incorporate the distribution of food to food insecure areas of the country.

6.2.10 Enabling Environment for Private Sector:

Develop an enabling environment for private sector to invest in adding value to products both for domestic consumption as well as for export. Value adding for exports is vital for such products as tea, which can fetch six times more when packaged as compared to bulk exports. Mechanism for quality assurance for all products and inputs particularly seed, semen, fertilizers and machinery should be put in place.

6.2.11 Commodity Diversification Programme:

Research and formulate a product diversification programme for both food crops as well as cash crops. The aim here is to promote non-traditional food crops and the diversification of our export portfolio.

6.2.12 Livestock Production Policy:

Formulate and implement a long-term livestock production policy including adoption of improved animal breeds, high yield feeds, modern feeding systems and animal health systems. The policy should include marketing strategies both for domestic and exports including the development of EU abattoirs in livestock production areas.

6.2.13 National Land Policy:

Formulate a national land policy to harmonize the different land based activities such as agriculture, pastoralism, forestry, industrial locations, human settlement and tourism. The policy should incorporate the speeding up of survey, titling and registration of land.

6.2.14 Transfer of Technology:

The current technology used in crop production and harvesting requires to be modernized. One of the ways would be to use technical assistance from the developed world to improve on our current systems. It would be also important to have exchange programmes with those developed countries where our farmers would learn from the experiences of the farmers in those other countries. Such a programme would also enhance the mechanization of our farming.

6.2.15 Implementation Costs:

The implementation of the above recommendations is estimated to cost approximately US\$ 1,650 million (one thousand six hundred and fifty million United States Dollars, Table 22). The government participation in the implementation would cost it approximately 40 percent of the total cost while donors would be requested to finance the balance.

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ANNEX I: PERFORMANCE AND CONSTRAINTS OF MAJOR AGRICULTURAL PRODUCTS IN KENYA

1.1 Maize Production

Maize is the primary staple food and is most important in terms of food security, as it accounts for over 80 percent of the total cereals produced in the country. It is a traditional smallholder crop, and provides nearly half of the calories and usable protein available to Kenyans. The national average maize yields are estimated at 1.8 tonnes per hectare, which are low by international standards. The potential exist to increase yield to over 6 tons per hectare as evidenced in high potential maize zones where farmers have achieved between 4 and 6 tons per hectare. Several constraints affect maize production including frequent drought, poor extension services, high post-harvest loses, lack of working capital to purchase yield enhancing inputs like fertilizer, seeds, chemicals, diesel and lack of credit [GoK, 2002]. Higher yields can be achieved through strategies that include: sustained adoption of high yielding varieties; optimal use of fertilizers; improved seed quality assurance; and the intensification of research on high yielding and drought resistant maize varieties [GoK, 2002; Makokha, 2001].

1.2 Wheat Production

Wheat is the second most important cereal crop grown in Kenya by both small and large-scale farmers. Production takes place in plots of less than two hectares for the case of small-scale farmers as compared to more than two hectares for the large-scale farms. Average wheat yields are about 1.78 tons per hectare. Yields vary greatly between small-scale and large-scale farmers. Both small and large-scale farmers have achieved yields as low as 0.45 tons and as high as 2 tons per hectare. There is however, potential for raising yields to about 2.5 tons per hectare.

Several constraints affect wheat production including: high post-harvest loses, subdivision of existing farms which has led to switching from wheat to maize, lack of machinery for farm operations during critical periods when required, inappropriate technologies especially for smallholder farmers, lack of access to credit to purchase inputs such as fertilizer, seeds, etc. The low fertilizer application and use of non-certified seeds, soil acidity, poor rainfall, insecurity of land tenure in new wheat areas as a result of unadjudicated lands, poor marketing services, inadequate infrastructural development such as roads, low producer prices, pest infestation and extension services further constraints production.

The policies recommended to relax constraints in wheat production are: funding and delivery of services like research, extension, credit, marketing and storage; change by the government in use of taxes and duties on imported wheat to protect inefficient producers; guarantee competitive input supply and output marketing through provision or improved infrastructure; and manage efficiently policy on wheat imports and trade policy to avoid distortions in the wheat market. On the processing and trading side, Kenya can gain advantage in the regional markets through reducing import duties on wheat imports to competitive levels with other countries in the region; reduce cost of infrastructure through increased investments; and provide information regarding regional market conditions and establishment of strong contacts in the markets.

1.3 Rice

Rice is the third most important cereal crop produced in Kenya. It is produced under irrigated and rain fed conditions. About eighty to ninety percent of the crop is produced under irrigation [Wanzala, 1993].

Rice production is constrained by conflicts over ownership of land in irrigation schemes, use of low yielding varieties especially retained seeds, high post-harvest losses, poor disease and pest control, high cost of production, and poor marketing channels, [Nyangito and Nzuma, 2002]. In order to increase rice production, the following key issues must be addressed: land ownership question, expansion of the area under irrigation, expansion of the rain fed rice growing acreage, formulate a national irrigation policy to spell out the roles of the various actors in the liberalized economy and offer extension and marketing services

1.4 Horticulture

There are over forty different types of horticultural crops produced in the country and at least 50 percent of these are exported while the rest is consumed locally, thus contributing directly to food security.

While the government should maintain its non-interference stand in the running of the horticultural sub-sector, there are some constraints that it must address in order to enhance the profitability and long-term viability of the sub-sector. These constraints include: increasing cooling facilities at the Kenyan ports, use of high quality packaging materials, increasing cargo space, reducing local authority taxation, provision of research and extension services, enforcing grades and standards, undertaking promotion, and also providing incentives such as the reduction of freight costs, allowing duty free importation of inputs so that the sector can be competitive. The government should also assist farmers to meet the maximum residue level requirement as stipulated under the WTO Agreement on Agriculture and the ACP/EU Protocols, develop market infrastructure, strengthen Kenya Plant Health Inspectorate Services (KEPHIS), and provide training to farmers.

1.5 Traditional Food Crops

Traditional food crops encompass wide range of crops such as: sweet potatoes, millet, sorghum, pulses, bananas, cassava and yams. These crops play a crucial role in food security despite the little attention given to them in terms of research, development and market promotion (MoA, 1996). While the cultivation of these crops in the high and medium potential areas of the country is declining, this is being compensated for by the expansion in the semi-arid areas. Yields per unit area tend to be low due to lack of improved varieties and agronomic and husbandry practices which arise as a result of limited research work and the past bias for high value crops. In addition, there is inadequate extension services to promote the adoption of these crops, lack of agencies to produce and market clean, pest and disease free planting materials.

The proposed measures to improve production and productivity of traditional crops include: developing suitable production technologies; creating an enabling environment for private sector involvement in new technology development; improve farmers' access to new technology packages and promoting their use; removing uncertainties in output marketing and pricing; establishing efficient external trade policies; encouraging processing, and increase research funding to establish what other use can be made to the produce.

1.6 Oil Crops

A number of different kinds of oil crops are grown in Kenya including: sunflower, cotton, simsim, coconut, groundnut and soyabean, [Gitu et al 1990]. There is a widespread production of these crops in Kenya even though the potential to grow them in the lower rainfall areas remains unexploited indicating that with appropriate domestic policies, Kenya can increase her production thus reducing excessive dependency on imported oils and fats which comprises 90 percent of edible oil requirements.

Production of non-traditional oil crops such as *vernonia galamensis* ought to be enhanced especially in the ASAL areas as they do well. The seeds of this plant germinate easily and have an oil and protein cake content of 42 and 40 per cent respectively. The crop has also multiple potential including used as a reactive diluent to replace solvents in plants, plastics etc and as a binder for biodegradable pesticides.

Constraints in this sector include: low producer prices; lack of high yielding varieties; lack of promotion of small scale oil processing; lack of knowledge of agronomic practices, poor pest and disease control methods; scarcity of quality seeds; and, in levels of research and extension outreach to oil crop farmers.

The strategies to promote the local oil crops production would include need to: provide high yielding seed varieties to farmers; promotion of high yielding varieties and improved extension services.

1.7 Tea

The tea sub-sector has a high potential for expansion. Strategies to improve both production and productivity should include: venturing into the emerging markets of Eastern Europe, expansion of the existing factories and building new ones to cope with increased production, development of infrastructure, research into high yielding drought and frost resistant varieties and export branded tea as opposed to bulk tea¹³.

1.8 Coffee

Coffee is the third most important export crop after tea and horticulture. It accounts for 15 and 0.97 percent of agricultural export and total export respectively. Both smallholders and estates produce coffee. While acreage under coffee has increased for both producers, yields indicate a very serious downward trend. Yields per hectare for the estates have declined from 1.25 tons in 1980 to 0.67 tons in 2000 whereas it dropped from 0.73 in 1980 to 0.19 tons in the case of smallholder in the same period.

Constraints in coffee production include: high prices of farm inputs; lack of access to credit; low coffee payments due to high processing costs in the cooperatives and high marketing costs by the Coffee Board of Kenya; inadequate extension services to coffee farmers and lack of resources by extension staff for effective dissemination of the technical information on coffee farming; inadequate yield-enhancing technologies in coffee production; and legal and regulatory constraints that have limited intercropping and prohibited uprooting of coffee without authority of the board. Removal of these constraints will increase production and productivity thus making coffee production more competitive.

¹³ Blended tea venture six times more than bulk or unblended tea.

1.9 Cotton

Cotton is grown in fairly marginal environment. Area under cotton production has been declining since 1980. Cotton yields have averaged about 0.55 bales per hectare with the highest yields of 1.23 bales per hectare obtained in year 2000.

Constraints faced by cotton farmers include: poor seed quality and inadequate multiplication, limited funds for research and extension services to farmers. The survival of cotton ginneries will only be achieved if resources are spent on seed multiplication and certification system as Kenya has abundant ginning capacity. To sustain and arrive at self-sufficiency in cotton production, the Kenya government and the Cotton Board have been trying to provide incentives such as free seeds, inputs on credits and have also continued to control prices despite liberalization.

The policy options available for the survival of cotton industry include: investment in seed multiplication and certification process to enable Kenyan cotton to compete both in price and quality; active participation by the public sector in ensuring seed quality assurance and certification; encouragement of private sector to multiply and distribute certified seeds; leave seed cotton marketing and ginning process to market forces; repeal the Cotton Act (Cap. 335 No 3 of 1989, Revised 1990) to legalize the current free marketing system; and, disband and replace the Cotton Board by a small organization with representation of the private sector farmers institutions, producers, ginners and public sector representatives.

1.10 Pyrethrum

Kenya produces over 80 percent of world pyrethrum extracts. Production is concentrated in the highland zones where temperatures are cool and solar radiation is high. Pyrethrum is a smallholder's crop. Major inputs include planting materials and labour for planting, weeding and picking.

The Pyrethrum Board of Kenya (PBK) is a state monopoly that provides farmers with planting materials on credit, although there is an active private market in planting material, and farmers can keep and re-use their own. Dried flowers from all producing areas are delivered to the PBK plant at Nakuru, where chemical processes are used to extract concentrated pyrethrin as well as a number of useful by-products such as pymarc, which is an animal feed and other by products used to treat wood and make mosquito coils. Traditionally, the main market has been in the major industrialized countries. However, demand is now growing in Asia, Africa, Eastern and South America.

Major challenges to pyrethrum production include: poor marketing channels; poor prices; increase in competition in synthetic pyrethroid production that leads to new and safer products and delays in payments. Proposed strategy to improve performance of pyrethrum industry are: aggressive marketing to open up new markets, liberalization of the industry to remove inefficiency created by the monopoly, increase funding for research and extension and timely payment to the farmers.

1.11 Livestock

The livestock industry is the largest sub-sector in agriculture contributing 40 percent of agricultural GDP and 10 percent of total GDP. It employs over 50 percent of the agricultural labour-force. Additionally, the sub-sector contributes to household income through sale of livestock and livestock products, provides raw materials for agro-industries, and generates foreign earnings through exports. The sub-sector also provides raw materials for local dairy, meat and meat processing industries as well as hides and skins for tanneries, wool and hair. The subsector therefore, has both direct and indirect contributions to sustainable development and food security. The role of livestock is more important in ASAL areas which occupy about 84 percent of Kenya, but where crop agriculture is marginal. Indigenous livestock provides an opportunity in these areas because of their adaptivity, [Mugivane and Kosura, 2001].

Cattle, both beef and dairy, are the most important livestock species accounting for about 73 percent of the total livestock biomass, followed by the small stock of sheep and goats (19 percent), camel (6 percent) and the rest (2 percent). Kenya also produces poultry, both layers, and broilers. The section that follows discusses dairy and meat products including fish.

The dairy industry is characterized by strong private sector participation, which includes an increasing proportion number of informal marketing systems operated by small-scale marketers. Milk marketing outlets include direct selling, through cooperatives, self-help and roadside stands. The informal channels lack processing, preservation and storage facilities as well as quality control capacities. This sector remains fairly uncoordinated and offers varying product prices, [Mugivane, Mwai and Kosura, 2001]. The key players in the milk marketing are the private milk processors. But because the private processors tend to concentrate on areas near the urban centres, farmers far off in the interior are unable to sell their milk. In order to improve dairy production a number of strategies are suggested including the need to: facilitate the development of producer organizations; improve transport and processing infrastructures including roads, cooling and processing facilities; improve dairy cattle genetic base; improve the Artificial Insemination (AI) delivery system; and, improve disease control.

The meat sub-sector is dominated by red meat (beef and mutton). Most of the red meat and products are produced in the arid and semi-arid lands under pastoral conditions. Red meat contributes about 70 percent of the meat consumed locally while white meat comprising of pork and poultry make the remaining 30 percent. As noted earlier, there is considerable potential for increased meat production, which would in turn imply increased food security, employment and incomes. Several constraints impede the development of the meat sector, including: poor marketing infrastructure (roads, storage and slaughter facilities) which forces animals to trek long distances resulting in weight loss, hence reduced profitability; inadequate control of communicable diseases like rinderpest and foot and mouth, due to lack of enforcement of the established disease control rules such as quarantine in case of a disease outbreak; poor extension services; and insecurity due to cattle rustling in the livestock producing areas and marketing routes.

A number of strategies have been suggested in order to improve the meat sub-sector. These include the need to: intensify animal feed production; improve marketing infrastructure and livestock extension service; facilitate the private sector to improve livestock marketing through setting up of small abattoirs and storage facilities in the producing areas; reactivate regional approach to the management of tick-borne disease and Trypanosomiasis; rehabilitate existing dips and facilitate the

construction of more dips particularly in the ASAL and strict enforcement of the provisions of Animal Disease Act for compulsory vaccination, notifiable diseases and imports of livestock and livestock products [GoK 2000, Gitu and Kanyua 1993].

1.12 Poultry

The poultry sub-sector can be divided into commercial and subsistence farming systems. Commercial farmers who are usually located in peri-urban centers keep hybrid chickens, both broilers and layers, while subsistence farmers keep indigenous chicken whose productivity is very low. Indigenous chickens can be found in almost every homestead in the rural areas and account for about 75 percent of the total poultry population.

Commercial poultry and eggs production in Kenya began as an extension of flocks kept for domestic consumption. The development of modern hatcheries, the importation of high quality day old chicks, improved feeds and better health care has led to specialized broiler and layer operations. Commercial poultry farmers are heavily dependent on the existing hatcheries for day old chicks.

Constraints include: high initial capital outlay for commercial poultry farming; high feed cost, disease epidemics, and little accessibility of extension services to poultry farmers. The strategies required to improve poultry production would include: provision of capital to the farmers, farmer training, reduced feed cost, marketing services, provision of veterinary services and development of high breed variety to increase both yield of eggs and quality of broilers.

1.13 Fish Industry

Fish is an important and reliable source of protein, employment and income for a large proportion of Kenyans. Several constraints hinder the development of the fish industry including poor infrastructure that comprises access roads, power, cold storage and, underdeveloped landing beaches and jetties, poor extension services; inadequate facilities for quality assurance; heavy post harvest losses; and discharge of industrial waste into the water bodies leading to reduction of fish due to pollution. Fish production can be increased through the intensification of fish farming using green house technology at the household or farm level and in tanks using gravity red water systems; promoting the production of salt-water marine products like shrimps; encouraging through economic incentives the private sector to develop, manage and maintain landing beaches, establishing cooling and processing facilities; developing and enforcing legislation of fishing gear and trawling; and establishing Fisheries Development Board to promote, develop and regulate the fish industry [GoK, 2001].

1.14 Forestry and Logging

Kenya's forest and major woodlands occupy approximately 2.4 million hectares of which 1.64 million hectares is gazetted (National Museums of Kenya 1992). Cypress, pine and eucalyptus are the main species grown. Between 8,000 and 15,000M³ of timber is annually exported mainly to Middle East while the average import duties on wood and wood charcoal is 21.3 percent. Forests are a major habitat for wildlife, which are vital for the tourism industry. The main forest ecosystems include: moist highland forest; dry forest; tropical rain forest; coastal forest; riverine and mangrove forests. The closed-canopy forest complex is about 1.4 million hectares with 0.18 million hectares

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outside the gazetted reserves. The closed-canopy indigenous forest covers 1.2 million hectares while industrial plantation forest area is estimated to be 160,000 hectares.

Constraints impeding this sector are: encroachment of forest land by people for agricultural farming; settlement of the landless people; increasing need of forest products; excision by the government; absence of a concise national land use policy; population pressure, climatic change, depletion of hard wood stocks, inaccessibility to some sources leading to over harvesting in accessible areas, low optimal usage due to lack of integrated forest industries, low technological and labor inadequacies leading to low recovery rates of 30-40 percent, pollution caused by residue disposal problems and specific supply shortages of important types of wood such as wattle.

Nevertheless, the Kenyan government has been trying to contain the management of forests through the creation of a plan and development programmes. For instance, the Kenya Forestry Master Plan (KFMP), which addresses issues such as: conservation of diversity; forest management and protection of forest against pests, diseases and fires. Alternatively, the Kenya Indigenous Forest Conservation projects promote the joint management of forestry resources by adjacent communities, the private sector and the government. The means for financing the upgrading of equipments used in the forestry sub-sector are under study while at the same time, the government is drafting a new Forest Act to implement the Forest Policy (based on the KFMP) approved in 1996. Furthermore, exploitation of indigenous timber has been banned and the export of wood is prohibited. Other strategies include: Restructuring wood procurement practices to encourage integrated harvesting to facilitate optimal allocation of logged wood to industries, formulating policies to encourage investment in pulp, paper and mechanical wood industries. The plan is also putting in place strategies to address shortcomings in wood supply and provide legal framework to enforce supply and utilization decisions, formulate specific programs to encourage farm forestry among the small holder farmers to increase wood supply, and undertake an analysis of the forestry department assessing its capacity and capability to manage forest resources and the recommendations implemented.

POLICY ASSISTANCE WORKING PAPERS

0/1 E	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>Background document</i>
0/1 F	Bureau Sous-régional de la FAO pour l'Afrique de l'Est et Australe	Sécurité alimentaire et développement agricole en Afrique sub-Saharienne - Dossier pour l'accroissement des soutiens publics <i>Document de Cadrage</i>
0/2	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Ethiopia</i>
0/3	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Kenya</i>
0/4	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Malawi</i>
0/5	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Nigeria</i>
0/6	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Tanzania</i>
0/7	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support <i>The Case of Zambia</i>