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)**

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

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
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, [Ndewga 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 restrain 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)

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

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.

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


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

![Price per ton of maize, wheat and rice in the US and Kenya](image)


### 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
Building a Case for More Public Support

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
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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 loses.

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 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.
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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

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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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Constraints</th>
<th>Strategies/Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>Drought, poor extension services, lack of working capital, access to credit and low yielding varieties.</td>
<td>Research on high yielding varieties; extension; promotion of optimal use of fertilizers and improved seed quality assurance.</td>
</tr>
<tr>
<td>Wheat</td>
<td>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.</td>
<td>Research and extension services, credit, market promotion, storage and appropriate technology.</td>
</tr>
<tr>
<td>Rice</td>
<td>Conflict over ownership of the rice schemes, low yielding varieties, poor disease and pest control, high cost of production and poor marketing channels.</td>
<td>Research and extension services, land use policy, disease and pest control.</td>
</tr>
<tr>
<td>Horticulture</td>
<td>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.</td>
<td>Extension services and cooling facilities at Kenya ports provide duty exemption for packing materials and machinery.</td>
</tr>
<tr>
<td>Traditional Crops</td>
<td>Poor marketing, poor research and extension and limited alternative use of traditional crops.</td>
<td>Market promotion, and research and extension</td>
</tr>
<tr>
<td>Oil Crops</td>
<td>Low producer prices, lack of high yielding varieties, inadequate processing facilities, poor pest and disease control, inadequate quality seeds and poor extension services.</td>
<td>Research and extension, processing facilities, pest and disease control and production of high quality seeds.</td>
</tr>
<tr>
<td>Tea</td>
<td>Inadequate tea factories, poor marketing, inadequate research on high yielding drought, frost resistant varieties and poor promotion and high input costs.</td>
<td>Construction of new tea factories, market promotion, and research and extension.</td>
</tr>
<tr>
<td>Coffee</td>
<td>High input cost, lack of credit, high processing costs, inadequate extension, inadequate high yield-enhancing technologies, and poor legal and regulatory framework.</td>
<td>Credit, research and extension and value adding exports.</td>
</tr>
<tr>
<td>Cotton</td>
<td>Poor seed quality and inadequate seed multiplication, and poor research and extension.</td>
<td>Research and extension, and seed multiplication.</td>
</tr>
<tr>
<td>Pyrethrum</td>
<td>Poor marketing, low product prices and increased competition, and monopoly.</td>
<td>Market promotion and liberalize the sub-sector.</td>
</tr>
<tr>
<td>Dairy</td>
<td>Poor genetic potential of existing herd, inappropriate institutional framework, disease and pest control, poor artificial insemination service, inadequate credit and high cost of feeds.</td>
<td>Research on improvement of genetic potential, disease and pest control, artificial insemination and credit.</td>
</tr>
<tr>
<td>Meat</td>
<td>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.</td>
<td>The intensification of feed production, storage and slaughter facilities especially in the rural areas, disease control and the production of quality feed.</td>
</tr>
<tr>
<td>Poultry</td>
<td>High initial or start-up capital, high feed cost and diseases epidemic, poor and inaccessible extension services.</td>
<td>A programme for disease control, extension service and provide credit.</td>
</tr>
<tr>
<td>Fisheries</td>
<td>Poor infrastructure (access roads, poor storage and landing jetties and beaches, extension services, poor quality assurance, heavy post harvest loses, discharge of industrial waste into the water bodies leading to reduction of fish due to pollution and high export sanitary requirement.</td>
<td>The construction of access roads, storage, landing jetties and beaches, extension services, a program for quality assurance, and post harvest technology and waste control.</td>
</tr>
<tr>
<td>Forestry and Logging</td>
<td>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.</td>
<td>A study for establishment of pulp and paper industry. Analysis of the forestry department assessing its capacity and capability to manage forest resources.</td>
</tr>
</tbody>
</table>
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

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

<table>
<thead>
<tr>
<th>Clause</th>
<th>Description</th>
<th>Cost (Ksh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGRICULTURAL SUBSIDIES</strong></td>
<td>Provide subsidies for fertilizers, seeds, feeds, farm implements, exports and transport.</td>
<td>186.70</td>
</tr>
<tr>
<td><strong>RESEARCH AND DEVELOPMENT</strong></td>
<td>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.</td>
<td>400.80</td>
</tr>
<tr>
<td><strong>LAND POLICY</strong></td>
<td>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.</td>
<td>1.30</td>
</tr>
<tr>
<td></td>
<td>Accelerate survey, titling and registration of land</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>Total Five Year Programme Cost</strong></td>
<td></td>
<td>1,650.10</td>
</tr>
</tbody>
</table>

## 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.

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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 foregone (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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Building a Case for More Public Support


The Case of Kenya


World Food programme.

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 un adjudicated 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 rainfed 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 loses, 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 constrains 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 dilutent 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 tea\(^\text{13}\).

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 respectfully. 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.

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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 15,000M$^3$ 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
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.
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