

SECTOR PROFILE ON AGRICULTURE

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AGRICULTURE

A: OVERVIEW

Agricultural sector is the dominant sector in the Kenyan economy accounting for 24% of the Gross Domestic Product. The sector is the largest contributor of foreign exchange through exports earnings from Tea, Coffee and Horticulture. Agriculture also provides employment and livelihood to a large percentage of the population. An estimated 75% of the population depend on the sector. Any changes in the sector, due to its dominance will translate to changes in the whole economy. Hence further investment in this sector remains as a matter of policy, a priority. The desire to achieve a Newly Industrialised Country status by the year 2020 will only be realised with increase in productivity in this sector. Agro-processing investments will only be possible with production of adequate and high quality raw materials from the Agricultural sector. Any efforts to revive the economy and reduce poverty should have emphasis in this sector.

The agricultural sector in Kenya has since independence heavily relied on the Government for its development. The Government controlled the growth of the industry by fixing producer prices of commodities and prices of inputs. Except for the period 1985 to 1990, Kenya has since 1980 never experienced sustained agricultural sector growth. For the first time since independence, the agricultural sector recorded negative growth rates for three consecutive years in 1991, 1992 and 1993 during the turbulence following transition to multi-party democracy in Kenya. The government has since taken decisive measures to divest from agriculture and leave room for private investment and market forces to operate.

B: DEVELOPMENTS IN THE INDUSTRY:

In Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth, the following targets for agriculture to the year 2000 were indicated.

- i) Provide food security for a population of almost 35 million in 2000.
- ii) Generate farm family incomes that grow by at least 5 per cent a year over the next 15 years.
- iii) Absorb new farm workers at a rate of over 3 per cent a year with rising productivity.
- iv) Supply export crops sufficient for a 150 per cent increase in agricultural export earnings by 2000; and
- v) Stimulate the growth in productive off-farm activities in the rural areas, so that off-farm jobs can grow at 3.5 per cent a year.

However, the performance of this sector for the last decade has been declining. The poor performance of this sector has occasioned decline in the performance of the whole economy, the major reasons being the inability of the government to fully liberalise and privatise the sector at the right time. The benefits of liberalisation in the last decade can be seen on the ground, for example, in the Dairy Sub-sector, there are a number of new investments in Milk processing which have introduced new products and resulted in additional employment. Drought has occasionally resulted in the

decline in agricultural production. The effects of drought can be minimised through further investments in irrigation technology and systems.

C: TRANSFORMATION OF AGRICULTURE

The transformation of the agricultural sector will ensure that the sector will not only be involved in primary production and subsistence consumption, but will also be involved in secondary production (processing) and ensuring that the sector will be commercial even at the farm level. Strategies for development of the agro-industries in Kenya in the last few years and the vision in the 21st Century are stipulated in the Sessional Paper No.2 of 1997 on Industrial Transformation to the Year 2020 and the 8th and 9th National Development Plans for the period 1997-2001 and 2002-2007 respectively.

The Industrialisation process, will start with promotion and development of agro-industries for processing the agricultural produce, with immediate goal of increasing value added in the primary products both for domestic and export markets. The strategy for implementation of the industrial transformation process will include co-operation and dialogue between the Government and all other stakeholders in the development of agriculture and industry.

D: TEA SUB-SECTOR

Tea is the leading export commodity in the country in terms of foreign exchange generation, accounting for almost 20% of total export earnings. Tea industry is a major source of employment with over 2 million people in direct tea farming, manufacturing, marketing and indirectly in retail outlets and transportation.

Small-scale tea growers, estimated at 300,000, process and market their tea through 45 tea factories under the Kenya Tea Development Agency (KTDA), while large scale tea growers (tea estates) process and market their tea through 38 tea factories operated on individual private basis. KTDA renders managerial, production, transportation and marketing services which include management of tea factories, green leaf transportation, procurement of production inputs, marketing of processed tea and payment of tea proceeds to the growers. The tea sub-sector was restructured and fully liberalised in 2000 whereby Kenya Tea Development Authority was fully privatised and renamed Kenya Tea Development Agency Limited. The KTDA Ltd. is established under the Companies Act as a public company with limited liability, owned by small-scale tea farmers through their respective factory companies. The new KTDA offers management services to the individual factory companies and any factory, as an independent private company may opt, if it wishes, to contract any other management agent, other than KTDA, to manage their operations. Table 2 below shows the tea production and exports for the years 1996 – 2000.

**Table 2:
Tea Production and Exports (1996 – 2001)**

Year	ESTATES		Small holder (KTDA)		Total Area (Ha.)	TOTAL Production (MT)	EX-PORTS (MT)	Value of Exports (billion Kshs.)
	Area (Ha.)	Production (MT.)	Area Ha.	Production (MT)				
1996	32,523	113,091	81,159	144,071	113,682	257,162	244,500	21.6
1997	32,694	91,014	84,657	129,708	117,351	220,722	209,682	24.1
1998	33,761	118,527	84,657	175,628	118,418	294,165	263,023	33.2
1999	33,586	94,852	86,813	153,855	120,399	248,708	241,739	32.7
2000	34,090	90,740	88,146	145,546	122,236	236,286	217,282	35.1

Source: Crops Division, MOARD

It is important to note that companies wishing to process and package tea should be licensed by the Tea Board of Kenya for co-ordination of supply by farmers to the factory.

Opportunities for investment:

- Investment in Tea plantations;
- Processing and packaging of tea for export especially under the Manufacturing Under Bond and Export Processing Zones programmes.

E: COFFEE SUB-SECTOR:

In recent years, contribution of coffee to the economy in terms of foreign exchange earnings and employment has been steadily declining. The decline can be explained by low coffee production, which has resulted due to the uncertainty of the outcome of recent policy changes, low world market prices and lack of credit. The coffee sector has been liberalised. Kenyan coffee could fetch higher prices if higher quality standards are attained through improved crop husbandry, proper pulping, drying, storage, milling and grading. Also opportunities of increased earnings both for the local farmers and the country exist, if there could be increased value adding and aggressive promotion of Kenya Coffee, especially in the external market.

Opportunities for Investment:

Investment in Coffee production is necessary for maintaining high production volume and further employment. Opportunities exist in: -

- Coffee processing and packaging to final products.
- Processing of instant coffee.
- Growing of Robusta Coffee, which will be used to support the blending of Arabica coffee.
- Manufacture of coal from coffee husks.

Table 3
Coffee Production, Consumption and Exports:

Year	Hectarage	Production '000 tonnes	Production/ha (Kgs)	Exports (Metric Tonnes)	Value Earned (Million Kshs.)
1997	162,410	67.678	416.7	68	16,546
1998	167,398	53.434	317.5	51.3	13,198
1999	167,398	68.163	407.1	64.3	10,050
2000	167,398	100.7	601.5	98	11,282
2001	167,398	51.7	308.8	-	-

Note: Local consumption is Negligible
Source: Department of Agriculture, Economic Survey, CBS and the Coffee Board of Kenya.

F: PYRETHRUM SUB-SECTOR:

Pyrethrum is an important crop in Kenya's economy for it offers livelihood to approximately 200,000 households with one million individuals. It is a major foreign exchange earner for the country ranking fifth after tea, horticulture, tourism and coffee. For over 60 years, Kenya has been the leading world producer of natural pyrethrum whereby the country produces between 65% and 75% of all pyrethrum traded in the world in any given year.

Over the years, pyrethrum production has been characterized by cyclic periods of high and low production. The highest production ever recorded was 18,720 Kg. realised in 1981/82. However, over the last two decades production has fluctuated between 17,710 Kg. achieved in 1992/93 and 3,995 Kg. realised in 1998/99 with an average of 8,500 Kg. per annum. Production in the year ended June 2001 was 7,964 Kg. flowers with a pyrethrins content of 1.53%. Production is projected to rise to 14,000 Kg. by June 2003. The current value of pyrethrum exports ranges between Kshs. 1.5 and 2.0 billion per annum. Production for the last five years has been as indicated in table 4 below:

Table 4
Pyrethrum Production and Exports (1995/96-2000/01)

Year	Area Ha	Production (KG)	Export Value (KShs.)
1995/96	27,570	7,490	2,104,277,840
1996/97	27,052	6,220	1,335,856,260
1997/98	27,500	7,161	1,137,207,220
1998/99	15,000*	3,995	587,7
1999/2000	18,000*	4,720	587,753,380
2000/01	20,000	7,964	1,130,484,300

Source: PBK (* estimated)

Pyrethrum Board of Kenya (PBK) has the monopoly of buying dry pyrethrum flowers from the farmers, processing the flowers and marketing the processed pyrethrum products. The local market consumes about 5% of the national pyrethrum production while 95% is usually exported to North America and Western Europe. It is anticipated that the market in future may expand to encompass South America, South East Asia and Africa.

Opportunities for Investment: -

Investment opportunities exist in: -

- Seed production - plant propagation
- Investment in plantation
- Processing pyrethrin insecticides, and pesticides.

G: SUGAR SUB-SECTOR

Kenya currently produces about 70% of her domestic requirement. Sugar production has increased from 384,171 tonnes in 1995 to 470,788 in 1999. Sugar consumption -- increased from 560,000 tonnes in 1995 to 631,200 tonnes in 2000. The deficit in sugar production is met through imports. The area under sugar cane is much more than the area of sugar cane harvested, indicating some inefficiency in sugar production and an indication of loss to farmers. This low crashing rate indicates one of the reasons why the cost of sugar production in the country is high. There exist potential for Kenya to become and retain self-sufficiency in sugar production and also produce surplus for export. Table 5 below shows the Sugar Production Trend from 1995 – 2000.

Table 5

YEAR	1995	1996	1997	1998	1999	2000	2001
Area Planted Ha	115,975	131,130	127,392	117,657	108,793	107,985	
Area Cane Harvested Ha	48,588	39,249	43,814	50,111	51,833	57,243	
% Area Harvested over Area Planted	42%	30%	34%	43%	48%	53%	
Production (Sugar)	384,171	389,138	401,610	449,132	470,788	401,984	
Production Planted Ha. (Sugar)	3.31	2.97	3.15	3.82	4.33	3.72	
Production/ Harvested Ha (Sugar)	7.91	9.91	9.17	8.96	9.08	7.02	
Gross Value in Ksh '000	11,909,30	13,592,59	14,257,155	16,760,259	17,691,74	17,157,079	
Value in Ksh/Ton	31,000	34,930	35,500	37.317	37,579	42,681	
Consumption	560,000	570,000	580,000	587,134	609,428	631,200	
Imports	24,440	65,826	52,372	186,516	57,701	118,011	
Exports	17,220	24,478	25,050	NIL	NIL	2,088	

Source: MOARD

The smallholder farmers are the main producers of the crop and they produce about 90% of the cane crushed. Refined sugar, which is wholly imported, is an essential raw material in food processing, beverage manufacture, soft drinks and pharmaceutical making, among others. Some of the key problems affecting the sugar industry are inefficiency, low productivity, weak management, distortions in the sugar market, inadequate credit facilities for sugarcane development, persistent droughts and fires.

The sugar companies operate under the umbrella of the Kenya Sugar Board, which is a public body charged with the responsibility of promoting and fostering the effective and efficient development of sugar cane for production of white sugar. The country has 6 major factories with an annual production capacity of between 550,000 and 600,000 tonnes. The sugar sub-sector has been liberalised and all the sugar companies will be privatised. There is need to improve the factories by increasing their efficiency through installation of diffusers and to revive the non-operational ones. The factories include Mumias Sugar Company, South Nyanza Sugar Co. Ltd. (SONY), Nzoia Sugar Company, Chemelil Sugar Company, Muhoroni Sugar Company, Miwani Sugar Company, West Kenya Sugar Company and Ramisi Sugar Company.

Opportunities for investment.

The following are the investment opportunities available in the sugar sub-sector: -

- Production of industrial refined sugar.
- Construction of new factories especially in the coast region since it is ideal for sugar cane production due to its early maturity period.
- Financial support to the small and medium scale out-growers: and,
- Investing in any of the five factories where the Government is in the process of divesting.
- Rehabilitation of the sugar plantation and factories
- Utilisation of sugarcane by-products to generate power, produce soft boards.

H: COTTON SUB-SECTOR

The cotton sub-sector in Kenya can be used as an ideal tool for poverty alleviation. Its employment and income generation potential is large due to its labour-intensive nature. Thus, there are about 140,000 small-scale cotton farmers, and about 7 million Kenyans (1/4 of the population) could benefit from the industry. In early 1980s there were over 200,000 farming households growing cotton and about 30% of total labour force was absorbed by the sector. The status of the sub-sector is as follows:

- Annual lint production is about 20,000 bales from the peak of 70,000 in 1984/85.
- Only 40,000 ha are under cotton although potential is estimated at more than 350,000 ha.
- There is very low productivity (250 kg/ha or 42% of realisable yield) compared with Mexico (1000 kg/ha), Israel (1400 kg/ha), and African average 300-370) kg/ha).

- There is low usage of certified seeds and other inputs like insecticides and fertilizers (as low as 19% of requirement).
- Cost of production is high due to poor organisation; low yielding varieties, and high cost of inputs.
- Ginnery capacity utilisation stands at only 16.3% due to inadequate supply of raw materials, technical problems, and lack of market for ginned lint. Many ginneries are still not operating.
- Many textile firms have collapsed and for the remaining ones, capacity utilisation stands at 25-75%. It is estimated that 70,000 jobs have been lost.
- Close to 80% of lint consumed by the local textile industry is imported.
- There is poor performance in export markets due to lack of competitiveness arising from inefficiency associated with protection, high cost of local raw materials and the quota restriction previously existing in the US market.

Table 6

Seed Cotton Production, Hectarage, Consumption, Export and Imports - 1995 – 2000

The units for cotton are metric Tonnes and Cotton Lint Bales is 185 Kgs each.

YEAR	1995	1996	1997	1998	1999	2000
Ha. Under Production	40417	37436	38138	38960	39500	20,114
Prod (Tons) Seed Cotton	11,970	11,115	11,685	11,570	11,400	14,590
Lint Bales	21,000	19,500	20,500	20,300	20,000	23,659.5
Imports- Raw Cotton (Tons)						
Imports (Ksh)						
Exports- Raw Cotton (Tons)	962	-	81	87	54	
Exports (kshs)	76,840,000	-	6,460,000	2,600,000	4,500,000	

Revival efforts undertaken to date include:

- Consultative meetings with stakeholders that have led to a draft policy on the industry's revival. The policy proposes pre-season stakeholder negotiation of cotton marketing and pricing and many stakeholder associations.
- Distribution of newly developed cottonseeds to farmers is free while in subsequent seasons; Ginners Association will supply the seeds. However, farmers are not convinced that the market will be available at good prices.
- Encouraging formation of cotton development committees. These are not effective yet, however, because the people leading them lack clear and adequate vision.
- Extension services to cotton farmers

- Review of Cotton Act and policy
- Proposal of an apex body for regulatory functions and to ensure availability of high quality seeds, funded by the industry. There is also a proposal to form a tribunal to deal with group/cooperative leaders who abuse their offices.
- Encouragement of stakeholders to buy all local cotton before going out to the import market.
- Removal of suspended duties on cotton imports and banning of importation of used underwear.
- Recommendation of reduction of duty on machinery and equipment from 5% to 0%.
- Request for technical assistance from USA to set up an AGOA centre.

Opportunities for investment

Investment opportunities exist in cottonseed multiplication, development of new cotton ginneries;

- Construction of textile industries, cotton plantations;
- Cooking oil, soaps, animal feeds.

I: OIL CROPS SUB-SECTOR

Kenya imports over 95% of her total edible oil requirements, estimated at 200,000 tons annually, which cost the country US \$ 90 million annually. The consumption of edible oils and fats remains low at 5.6 Kg per capita. This, while comparable to 7.4 Kg average per capacity consumption for developing countries is lower than ¼ of 24 Kg average for developed countries. The oil is mainly in form of palm oil imported from Malaysia. The oilseeds that can be commercially grown in Kenya are many but of major importance are sunflower, simsim, soyabeans, rapeseed, coconut, castor, groundnuts and sunflower. The agro-ecological zone potential for oil-crops production is Coast province Emphasis in oil crops production should be placed on Arid and Semi Arid Lands (ASAL).

The Government will adopt policy strategies, which should lead to efficient utilisation of Kenya's agricultural and industrial resources in the production and processing of oilseeds. The oil crops will be declared as special crops. This will enable the Government to promote or foster the development of oil crops grown in Kenya for the purposes of sale. To spearhead these efforts, an Oilseeds Development Council (ODC) will be established under the Agriculture Act Cap 318, section 191, to work closely with the Ministry of Agriculture.

Our past duty structure tended to favour importation rather than local production. A strong oilseed processing industry is necessary in order to stimulate local production of oilseeds and bring into full utilisation the installed processing capacities. Until the domestic production of oilseeds is able to meet the local requirements, the availability of oilseeds for crushing should be ensured through imports.

In this regard, the Government, through fiscal measures will support the development of the oilseeds sub sector through encouraging imports of oilseeds as raw materials rather than processed products (crude and refined oils). The private sector investment is therefore being encouraged in oilseed production, marketing and edible oil processing. In oil seed processing, the major oil crops to be considered are sunflower, simsim, groundnuts and Soya beans.

Table 7
Coconuts and Cashew nuts Production, Hectarage Consumption, Export and Imports over the Last Five Years.

COCONUTS

Years	1996	1997	1998	1999	2000
Ha	43,217	43,247	30,423	43,821.5	36,620
Prod NUTS (Tons)	64,443	62,766	11,434	57,430	54,930
Consumption – (bags)	64,226	62,613	11,272	57,189	54,584
Raw Exports (MT)	216.186	152.392	161.719	240.628	345.680
Export (ksh.)	8,365,882	6,279,029	13,411,782	5,646,206	12,940,702

CASHEWNUTS

Years	1995	1996	1997	1998	1999	2000
Ha	32318	30687	30900	30870	30972	27,077
Prod. (Tons)	9998	10000	8754	14531	12260	14023.5
Consumption – (bags)		9759.8	8241.13	12861		
Exports (Tons)	81	798	603	1,661	12,827	5,181
Export (ksh.)	21,480,000	34,160,000	7,500,000	85,460,000	587,980,000	266,567,280

Opportunities for Investment

- Coconut, cashew nut, sunflower, groundnuts, simsim and soya beans plantations.
- Investment in plantations
- Investment in edible oils processing;
- High quality packaging of cashew nuts for export.

J: HORTICULTURE SUB SECTOR

The horticulture sub sector has expanded rapidly in the last two decades largely due to the involvement of the dynamic private sector supported by appropriate government policies. However, horticulture business is dominated by large-scale growers while the majority of horticulture farmers are small holders who produce for home consumption and local domestic market and constitute about 80% of all growers and produce 60% of export produce. The small holders are not well integrated in

commercial horticulture farming due to technological and financial constraints. In addition the evolving horticulture technology are dynamic and there is need for provision of technical information/skills to smallholder farmers for successful commercial horticulture farming.

The horticulture sub sector currently commands a total of annual hectareage of about 250,000 with total annual production of slightly above 3.1 million MT, valued at Kshs.45.8 billion. About 250,000 MT is processed into juices, jams, sauces, canned products; 100,000 MT exported as fresh horticultural produce and the rest is marketed locally for home consumption and hotels. The sub sector has grown in the last 20 years and has overtaken coffee to become the second most important foreign exchange earner in the agricultural sector after tea. The sub sector has continued to attract and create employment on farms and related agro-industries, hence improving rural incomes.

Table 8

Exports of Fresh Horticultural Products, 1997 - 2001

Year	Volume '000 Tonnes	Value in Kshs Billion
1997	84.2	8.7
1998	78.4	9.7
1999	99.0	14.2
2000	99.2	13.9
2001*	95.2	23.5

Source: Economic Survey (CBS) 2001, ** Provisional figures

Horticultural production in Kenya is both rainfed and irrigated. Due to seasonally and unreliability of rainfall, production is inadequate. However, due to the diversity of the agro-ecological zones, a wide range of horticultural crops are grown ranging from the tropical crops such as bananas, mangoes, brinjals, French beans, temperate crops such as apples, plums, peaches, carrots, kales, cabbages, snow peas; to other crops relatively suited to drier conditions such as local vegetables.

Table 9:**Production of horticultural produce**

YEAR	CROP	HECTARAGE (HA)	PRODUCTION (MT)	VALUE (K£)
1996	Fruits	95,112	1,397,515	1,184,972,171
	Vegetable	81,010	935,884	465,756,025
	Herbs and Spices	1,8709	6,926	9,044,430
	Cut flowers	1,357	39,124	218,315,928
	Total	179,349	2,379,449	1,877,588,554
1997	Fruits	128,876	1,713,021	635,896,813
	Vegetable	88,318	988,400	614,039,265
	Herbs and Spices	1,085	5,963	7,343,845
	Cut flowers	1,445	39,837	372,164,250
	Total	219,724	2,747,221	1,629,444,173
1998	Fruits	134,859	2,141,236	718,373,534
	Vegetable	91,297	1,043,006	596,698,319
	Herbs and Spices	833	4,779	4,421,800
	Cut flowers	1,500	33,579	242,846,692
	Total	228,489	3,222,600	1,562,340,345

In order to adequately address the concerns of the industry the Government has proposed through the Draft Horticulture Bill for the Horticultural Crops Development Authority (HCDA) to be established under an Act of Parliament. The Act will enable the Authority to adequately regulate the industry with the aim of boosting horticulture performance in the country.

The Bill is also meant to restructure the management of the Authority so as to provide efficient services to stakeholders. The interventions to be pursued include: -

- Improvement of infrastructure including roads, and construction of cooling facilities.
- Improved market channels – growth opportunities exists for increased production to meet both local and export demand, but Kenya requires aggressive marketing of horticultural produce in wider markets besides EU to include Middle East, America and Japan.
- Improve yields and quality of horticultural produce through expansion of irrigated horticulture and intensification of production through improved husbandry techniques, increased use of inputs and the development of an efficient marketing system.
- Recent regulations on sanitary and phytosanitary conditions such as zero residuals need to be reinforced through more aggressive horticultural extension system that incorporates good agricultural practises in every stage of production.

Opportunities for Investment

Investment opportunities therefore exist in production, processing, storage and marketing of horticultural crops and fruit juice making, jams, sauces, dried vegetable, canned fruit slices, fruit flavours and concentrates

K: LIVESTOCK SUB-SECTOR

The livestock sector contributes about 10% of GDP, accounts for over 30% of the farm-gate value of agricultural commodities, employs over 50% of the agricultural labour force, and earn some foreign exchange through exports of hides and skins, dairy products, live animals and canned beef. The per capita consumption of livestock products is 10 kg. Beef, 2 kg sheep/goat meat, 1.2 kg poultry meat, 0.3 kg pork and 125 kg milk in urban areas and 19 kg in rural areas.

Kenya livestock statistics show the huge potential of the livestock sub-sector. See table 10:

Table 10

Livestock statistics between 1995 – 2001

Years/product	1995	1996	1997	1998	1999	2000	2001
Dairy cows Population (m)	3.2	3.2	3.4	3.2	3.0	3.167	
Milk Production (m Ltrs.)	2,362	2,399	2,448	2,508	2,557	2,410	
Fermented Milk (Tonnes)	7,907	8,831	9,714	10,685	11,754	12,929	
Butter & Ghee (Tonnes)	2,074	1,964	1,521	1,304	1,238	1,130	
Cheese (Tonnes)	421	426	464	342	257	315	
Beef (Cattle & calves) – “000”Mt	210	252	260	270	320	317	
Layers (eggs – Million)	1,034	1,120	1,153	1,190	1,249	1,368	
Broilers (Meat – Mt)	17,568	18,128	18,671	19,227	19,995	20,004	
Sheep & Goats (meat – Mt)	75,098	79,050	82,200	78,000	84,300	95,000	
Pork meat (Mt)	4,687	4,900	4,950	4,900	6,554	7,840	

Source: Livestock Department, MOARD
Economic Survey of Kenya (Various)
Internal & External write-ups

Kenya has one of the largest dairy sectors in sub-Saharan Africa, consisting of about 3.2 million dairy cows that produce about 2.5 million litres of milk, with smallholders accounting for about 80% of this total milk production. Procurements of milk have mainly been through dairy cooperatives especially for Smallholders. There are about 250 dairy co-operatives countrywide.

Previously, the Kenya Co-operative Creameries (KCC) monopolized milk processing. With liberalisation, private processors handle a substantially smaller proportion of the milk production, with the remainder being sold as non-processed milk. Most of the milk-marketing channels have been regulated through the Dairy Industry Act (CAP 336, Laws of Kenya). The Kenya Dairy Board is responsible for the licensing of the milk handling agencies, although currently hawkers especially near the urban centres handle much of the milk production. #

There is considerable potential in the sector in terms of increased employment and income generation if modernization is intensified through appropriate technologies, improved management and appropriate policy. This can be achieved by:

- Provision of superior breeding stock, especially by the private sector as well as intensification of research on characterization, selection and breeding of indigenous stock;
- The private sector can greatly benefit if it invests in both primary and secondary livestock processing plants, close to domestic production areas. This includes the rehabilitation of the Kenya Meat Commission facility at Athi River. Investment opportunities also abound for the investor targeting export markets.
- Fattening of the cattle especially meant for export to eastern world. This involves the export of live animals.
- Investment in facilities for processing of Ghee, butter or cheese meant for local or international markets.
- There is great potential in honey refining. Opportunities involve rehabilitation of the refining facility at Thika. This requires moderate funds to bring it back to processing locally produced honey. This can target both local as well as the international markets.
- Production of livestock feeds from sorghum, millet, cassava, oilseeds, fishmeal and the utilisation of by-products of sugar, pineapple, sisal and other crops to augment conventional foodstuffs is an area of investment potential.
- Promotion of fisheries, tourism through stocking of rivers, identification of suitable areas and facilities for entrepreneurs.
- Establishment of fish demonstration country wide in fish farming especially in potential areas,

- Laboratory services to provide physical-chemical analysis and microbiological analysis capacity.

Opportunities for Investment:

- Production and marketing of canned dried and fermented meats, and its by-products especially based on integrated slaughter facilities in production areas;
- In areas of leather tanning, Kenya exports hides and skins in basically raw form while at the same importing leather for her domestic use. Investors are therefore invited to exploit not only the existing local demand for leather but also the export demand;
- Rearing of wild animal and production of game meat is a new area, which has a very wide investment scope in Kenya. Areas like ostrich farming and crocodile farming have already proved profitable;
- In Kenya, chicken is more expensive than beef despite the fact that it is technically and genetically more profitable to produce poultry than cattle. At present, chicken stock birds are imported. There exist investment opportunities in producing them locally;
- Production of high value milk products such as milk powder, fermented milk and butter;
- Financial support to the sub-sector; and,
- Provision of low cost/affordable technologies and equipment for small-scale processing.

L: FISHERY SUB-SECTOR

Fish processing is relatively new in Kenya. The contribution of the fisheries sub-sector to the GDP is about 5%. The sub-sector employs over 60,000 people directly and 5,000 people are dependent on fish industry indirectly. Fish catches, are done through the use of boats. Currently there are 6,229 active boats in Lake Victoria where about 3% are motorised while the rest are propelled manually. Lake Victoria produces over 90% of the fish in Kenya. The dominant species is the Nile Perch, which forms the total catch by weight. This species is used for filleting in fish processing factories.

Lake Turkana the largest fresh water under Kenya's jurisdiction produced 18,000 MT in 1997 but now produces 1000 MT. Several factors are responsible for the decline, which include bad climatic conditions leading to the receding of the lake, reduced recharge from river Omo and lack of processing plants for the fish catches from the lake. The other sources of fish in Kenya are from fish farming which is a recent phenomenon. There are three types of fish farming practices in Kenya namely: Warm water fish (tilapia, bass and common carp); Cold mountain farming e.g. trout; and Coastal (saline water) fish farming (mariculture) mainly for prawns.

Marine fish catches since 1993 have varied between 6,000 – 12,000 metric tonnes per year. In 1997, the catches amounted to 4,790 Mt. There are 25 fish processing factories in Kenya with a total processing capacity of 25,000 Mt. Per year. The Government policy on fish industry targets encouragement of fish filleting for export, rationalisation of tariff structures on inputs of fish processing machinery and support of programmes that provide boats and gear (engines and nets) to fishermen.

Opportunities for Investment:

The following investment opportunities are available in the industry: -

- (a) Investment in deep sea fishing including technical support
- (b) Financing of processing plants
- (c) Fish farming, particularly of prawns at the coastal region
- (d) Export oriented investment targeting the European Market for fresh water fish.

Others investment Opportunities exist in: -

- (a) Food processing in small and medium enterprises;
- (b) Production of suitable packaging materials for various agricultural products especially horticultural produces, flowers, milk and other products;
- (c) Production and processing of cassava, cassava chips and starch extraction from fresh tubers for export and industrial use;
- (d) Provision of affordable credit to small-scale farmers; and,
- (e) Manufacture, marketing and distribution of farm inputs, machinery and livestock feeds.

M: SISAL SUB-SECTOR:

This is a very old industry in Kenya although little is known about it. About 95% of the total sisal production in Kenya comes from the large estates. Most of the sisal produced in these estates is exported while the local industries needs are met by production from the small scale farmers.

Some of the constraints faced by the small scale farmers include:

- (a) Low yields reflecting inadequate research over the years;
- (b) Low and fluctuating prices;
- (c) Competition from synthetic substitutes;
- (d) Inefficient processing technology;

For five years from 1995 to 1999 the land area under sisal decreased from 36,045 in 1995 to 26,000 in 1999. However, production level for the five years declined from 33,953 metric tonnes in 1995 to 18,200 metric tonnes in 1999. This is a decline of 86% in the five years, as shown in table below:

Table 11**Sisal Production, Hectarage and Export-value:**

Year	Area Cropped (Hactares)	Production (M. Tonnes)	Export Value (Million KShs.)
1995	36,045	33,953	608
1996	36,000	27,100	680
1997	21,000	28,188	614
1998	20,240	18,216	623
1999	26,000	18,200	-

Source: Economic Review of agriculture (DPIS)

Opportunities for Investment:

Investment in plantations;

- Manufacture of high quality paper, mats and sisal bags;
- Sisal mops, dart-boards, ropes and cords, cushion covers, smooth surface cleaning materials, etc.

N: BIXA

Kenya is a world leader in the production of Bixa, an industrial and cash crop that does well in the coastal region of the country. Bixa is valuable for its bixin principally used as a natural food colour. Bixa's market share of food colours is projected to gain increasing importance since most of the synthetic substitutes have been proved to be carcinogenic. The Table below shows the production trend of bixa from 1997 – 2000.

Bixa Production 1997 – 2000:

Year	Production (M' Tonnes)
1997	3,850
1998	2,282
1999	2,516
2000	2,746

Opportunities for Investment:

- Investment in plantations
- Investment in processing and packaging.

O: CONSTRAINTS TO AGRICULTURAL SECTOR GROWTH AND ADDITIONAL INVESTMENT OPPORTUNITIES:

The sector is however, characterized by major constraints some of which will present good opportunities for intervention by foreign investors. Some of the major constraints are:

- i) **Inadequate rural infrastructure:** Agricultural production is particularly affected during the wet seasons where its increased output is unfortunately accompanied by reduced accessibility due to bad roads, thereby leading to on-farm wastage and reduced production by farmers. Other infrastructural constraints include inadequate electrification, irrigation and telecommunications.
- ii) High dependence on rain-fed production.
- iii) Kenya agricultural production is largely weather determined to the extent that any year characterized by poor rains is also a poor agricultural year.

This is so despite the country's relative fresh water availability as well as availability of potential land for irrigation estimated at about 320,000 hectares.

In addition, the vulnerability of the sector to weather related fluctuations as well as changes in international prices for major exports points to the need to expand the agricultural base as well as the need for unified development strategy that harness existing water resources for production, particularly in the medium and low potential areas where livestock, horticulture, oil crops have great production potential.

- iv) **Inadequate inputs:** The sector is not adequately served in the provision of seeds and inputs for the various crops. This situation is particularly wanting in the horticultural sub-sector where smallholder producers have no access to quality seeds since Kenya is not a signatory to the Union for the Protection of Plant Varieties (UPOV), and there are few certified seeds in Kenya, given the diversity of existing crop production.

With the formation of East African Co-operation and Kenya acceding to UPOV and IPBRA accords, there is ample opportunity for foreign investors to enter the Kenyan and East African market.

- v) **Inadequate credit:** Credit in any productive enterprise is an integral element of the production process. The agricultural sector credit demand is estimated at approximately K£ 8 billion, yet the sector receives only 10 per cent of the total lending in the economy with only 2 per cent going to the smallholder, with a further bias towards the tradition cash crops. In view of the dominance of smallholder,

emphasis is definitely required in the provision of credit to small-holders for increased agricultural production.

Foreign investors with experience or expertise in lending to the agricultural sector could take advantage of the large existing demand for agricultural credit in Kenya and East Africa region.

- vi) Low investment in agriculture: Investment in the agricultural sector has been low since the 1980's. As a proportion of total Gross Capital Fixed Capital (GFCF) formation, the agricultural share has been, since 1980, below 10 per cent. For a sector which contributes at least 25 per cent of total GDP and is expected to carry the burden of ensuring sustainable economic growth, any annual private sector investment into the sector below 15 per cent per annum (of total GFCF) is unlikely to generate meaningful development of the sector on a sustainable basis.

Investments in any sector are critical for production, agriculture included. All efforts then need to be deliberately focused to those factors that impeded sustained investment in agricultural production by the private sector. Farmers on their own have made tremendous efforts to farm production investments. Lack of adequate access to credit and other constraints means that even farmers are under-investing in agriculture.

Foreign investors are welcome to invest in large-scale irrigation projects to help boost agricultural production the country.

P: SPECIFIC OPPORTUNITIES IN AGRICULTURE:

Upstream:

- Fertilizers, chemicals
- Better high yielding seeds and plant materials cross breed
- Irrigation system; water pumps, steel pipes, hosepipes
- Pesticides
- Storage including, cold storage
- Refrigerated transport
- Agricultural tools and equipments
- Air (transport) freight
- Assembly of tractors, generators, motors
- Extension services
- Organic farming
- Spare parts and accessories

Downstream:

- Pest control, fumigation
- Fresh juices, concentrates and flavours
- Jams and marmalades
- Canned foods, fruits, vegetables
- Flowers (various types)
- Starch
- Maize, milling & packaging
- Edible oils
- Food colours from Bixa
- Instant Tea, coffee
- Confectionary products – biscuits, bread
- Pyrethrum
- Caffeine
- Sisal mop and cushion covers, cleaning and shining materials, dartboard.
- Crisps from potatoes, cassava
- Pepper powder, sauces
- Food seasoning
- Garlic powder – spices

By products processing:

- Paper
- Building Blocks, Tiles etc.
- Animal feeds – seed cake, Husks
- Coal – coffee husks, sawdust etc.
- Electricity generation
- Soft Boards

Services:

- AI services
- Agricultural extension
- Veterinary services
- Dipping services
- Farmers Training – Better production methods, quality control and improvement
- Transport services (from farm to markets)
- Farm preparation – ploughing, harrowing, planting.
- Storage and drying of harvested Agricultural produce.

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