UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

BACKGROUND PAPER ON KENYA OFF-SEASON AND SPECIALTY FRESH VEGETABLES AND FRUITS

LESSONS OF EXPERIENCE FROM THE KENYA HORTICULTURAL INDUSTRY

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1.0 INTRODUCTION

1.1 Kenya lies on the eastern seaboard of Africa. It is crossed by the Equator and has borders with Ethiopia, Sudan and Somalia to the north, Uganda to the west and Tanzania to the south. Most of the country is made of highlands, rising from 1,200 to 2,800 meters. The great Rift Valley with its lakes and volcanoes bisects the country from north to south.

Considerable differences in altitude allow a great variety of climatic conditions. A temperate climate prevails in the highlands where daytime temperatures rank from 22 – 30 degrees and night-time from 6 – 12 degrees. In the temperate areas, there are two distinct rain seasons: "the long rains" from March to June, and "the short rains" from October to November.

1.2 Kenya has a long tradition of growing horticultural crops for both domestic and export markets. The country is able, from its agro-ecological zones grow a very wide range of horticultural produce, from French beans, exotic fruit to cut flowers.

The horticultural sub-sector is important in the economic development of the country. In terms of employment creation, over 1.0 million people are directly and indirectly engaged in the horticultural activities of production, processing and marketing.

1.3 The performance of the sub-sector has been impressive over the years. For example, export produce increased from 49,000 tonnes in 1990 to 98,000 in 1999. Of the total marketed produce in 1999 about 250,000 tonnes were supplied to the processing industry. Foreign exchange earnings from both fresh and processed horticultural products have been growing at an average of 20% per annum. Export revenue stood at US$ 200 million (Kshs 14 billion) in 1999. The turnover in the domestic market in 1999 was estimated at US$ 750. The sector contributes 23% of GDP and is the third foreign exchange earner ***(annex).***

1.4 Despite stiff competition in overseas markets and the problems usually encountered in the areas of production, marketing, financing, internal constraints and external interventions, Kenya has been able to maintain and even expand her market share on the International arena. This has been possible through improved produce quality, new products development, value-adding to produce, the search and exploitation of marketing opportunities and overall improved efficiency in both production and marketing.

However there are constraints which the sub sector faces and which it must deal with if the continued success has to be maintained or improved on.

1.5 The marketing of horticultural crops both locally and internationally has been a major challenge to the sub-sector. With the continued decline on the condition of roads, transportation and distribution of perishable horticultural produce has become expensive and difficult. This has been exacerbated by unreliable and inefficient railway services, expensive and inadequate telecommunication services and insufficient supply of electricity.

In the export market, import regulations have continued to get more stringent. For instance, in the recent past, the European market has revised its requirements on maximum residue levels to an analytical zero level to safeguard their consumers and the environment. At the same time, the Lome Convention, which gave African, Caribbean and pacific countries preferential treatment in the European market for horticultural produce came to an end in February 2000. In addition to the possible introduction of tariffs by the European Union countries, the new market requirements may limit market for African horticultural produce.

1.6 The government is committed to the liberalization of the industry. In this regard, the private sector, which has so far played a leading role in the development of this industry, has take up the challenge of further development. The government is ready to provide all the necessary support to facilitate the private sector in this noble task.

1.7 The EU remains the principal market for Kenya horticultural export produce; with the UK, Netherlands and France in the leading positions. Other important markets of the EU are Germany, Switzerland, Belgium and Sweden. The Middle East and South Africa are vital markets outside the EU.

Exports of vegetables and fruit have increased substantially to the UK supermarkets. The main growing and export season goes from September to June, which fits the winter market in the main outlets. However most exotic vegetables and fruit are exported all year round, albeit in smaller quantities. The vegetable and fruit production is still increasing and turning to ***better added value products*** and growers are increasingly looking for niche produce and markets.

Most of the transport to destination is done by air, using both regular and charter flights. Thanks to a big tourist industry, Nairobi has become the main hub in Eastern Africa, resulting in competitive airfreight costs (between 1.60 to 1.80 USD/kg for vegetables and fruit depending on flights, quantities, and time of season). There are direct cargo flights to Amsterdam, Frankfurt, London and Paris.

C H A P T E R 1

1.0 THE KENYA HORTICULTURAL INDUSTRY

1.1 INTRODUCTION

Currently the horticultural industry is the fastest growing agricultural sub sector in the country, and contributes 23% of GDP and the third foreign exchange earner. The sector has shown a steady increase of between 15 – 20 percent over the last decade.

In 1999, of total marketed produce per annum, three million tonnes was consumed by the domestic market, 250,000 tonnes used in the processing sector and almost 100 tonnes exported fresh.
The sub-sector generates over US$ 730 million locally and US$ 218 million in foreign exchange earnings. It is also a major employer, supplier to the processing industry and source of food needs. It is estimated that over 11% of the urban household food consumption is catered for by fruits and vegetables.

Structural and macroeconomic reforms, plus the introduction of more liberal trading environment arrangements have provided a major boost to Kenya's horticultural prospects.
This has been reflected in virtually year-on-year expansion in fruit, vegetable and flower exports - a trend which is forecast to continue - with total sendings predicted to rise 31 per cent from the present level of 100,000 tonnes to 140,000 tonnes by 2003. Exports of cut flowers alone are expected to increase 42 per cent by volume ***(Table 1).***
The area under horticultural crops in 1999 was estimated at 276,639 ha of which 1600 ha are under flowers, 180,000 ha under vegetables and 94,000 ha under fruits.

TABLE 1

THE KENYA HORTICULTURAL INDUSTRY
EXPORTS OF CUTFLOWERS, FRUITS & VEGETABLES (VOLUMES & VALUES)

	1996	84,824	18.2	118,491	19.1
	1997	84,190	-0.7	134,363	13.4
	1998	78,373	-7	149,672	11.0
	1999	98,964	26.0	218,525	46.0
	Est 2000	99,457	5.0	220,717	1.0
	2001	119,348	20.0	230,000	4.5
	2002	131,283	10.0	245,000	6.6
	2003	141,786	8.0	260,000	6.2

SOURCE: Horticultural Crops Development Authority

This progress has come via considerable investment in production infrastructure at all levels, largely funded by the private sector. There has also been increased air and sea freight capability, with the latter now accounting for 20 per cent of transport share. Avocadoes and mangoes are mainly exported via sea transport.

Further impetus has stemmed from the efforts and activities of HCDA, the Fresh Produce Exporters' Association of Kenya, and the Kenya Flower Council; stringent quality assurance programmes and the creation of central audit bureaus. In addition, a US$20m horticultural project to assist small-scale flower growers has been established, involving seven satellite collection centers feeding a central auction on a daily basis, based at Nairobi airport.

1.2 Principal Markets

Particular market gains have been achieved in the European Union. Currently, the UK is the principal market, taking a 34 per cent share of total exports, followed by the Netherlands on 31 per cent and France 15 per cent. Germany takes 5 per cent, with imports declining steadily since the early '90s ***(Annex).***

The main competitors targeting the same markets are Israel and Morocco for flowers; Egypt, Ghana, Cote D'Ivore and the Gambia for vegetables; and Pakistan, Spain, South Africa, Mexico and Mali for fruits. Although the bulk importer – Kenya is aware that this market could saturate to lower prices or entry -– restrictions. Kenya is looking at other markets; Middle East, Japan and other far East countries, South Africa (in their winter) and the Americas. Freight rates, although still high, have over the years considerably come down.

1.3 Vegetables

The overall trend is one of expansion in vegetable exports, boosted by increased emphasis on specialty and prepared lines. Sendings of French/Bobby beans rose by 28 per cent, okra by 21 per cent and sugar snap peas/snow peas by seven per cent. Further expansion is forecast. In the five-year period to 2003, exports of French beans are expected to increase by 24 per cent, babycorn 36 per cent and snowpeas 30 per cent. Bobby beans, sugarsnap peas and prepacked beans have also been earmarked for expansion. Currently, the largest vegetable exports by volume are French beans, followed by Asian vegetables and snow peas (Table 11).

1.4 Fruit

1999 saw growth in both production and exports, despite adverse weather. Avocados, the largest fruit export by volume, were a case in point, with sendings rising 45 per cent to 9,233 tonnes, of which eight per cent were channeled to the UK. Mangoes also saw a 59 per cent increase in sendings to 3,995 tonnes and passionfruit 46 per cent to 932 tonnes, with volumes to Britain put at 300 tonnes and 443 tonnes, respectively.

Avocadoes account for 59% by export volume – the main variety being the Hass type – easily recognizable by its pear shape and high oil content.

Mangoes occupy No. 2 position; mangoes exhibit great varietal diversity and include Haden, Kent, Keitt and Tommy Atkins.

The transport logistics for mangoes, avocadoes and pineapples has changed from air to sea transport, with bulk deliveries at competitive prices.

This development has encouraged the placement of produce throughout the modern retail system and this has led to its popularization among a wider range of consumer categories. Kenya ships 80% of its vegetables and fruit by air and 20% by sea (avocadoes, mangoes and pineapples).

1.5 Floriculture

Kenya has seen phenomenal growth in its exports of cut flowers, even taking into account mounting competition from Colombia, Ecuador, Israel, Zimbabwe, Zambia and Uganda. In 1999 alone, sendings amounted to 36,992 tonnes, worth a record US$100m, up 22 per cent by volume and 24 per cent by value compared with the previous year.

Overall exports to the EU were worth US$100m, with the Netherlands the largest importer, taking a 71 per share by volume, with most distributed through the auction system. Next is the UK on 20 per cent, followed by Germany on six per cent and South Africa with two per cent. Success can be attributed to Kenya's ability to provide high quality product on a year-round basis, backed by daily airfreight arrivals to key destinations.

TABLE 11

MAJOR VEGETABLE PRODUCTION /FORECASTS 1999 – 2003 (TONNES)

COMMODITY	1999	2000	2001	2002	2003
ASIAN VEGETABLES	7,366	7,366	7,919	8,315	8,730
BEANS					
- ***Bobby***	371	389	419	440	462
- ***Canned***	8,143	8,753	9,410	9,880	10,374
- ***French***	27,729	29,116	31,299	32,864	34,507
- ***Frozen***	500	550	591	621	652
- ***Prepack***	627	690	741	778	817
OKRA	2,758	2,895	3,113	3,268	3,432
PEAS					
- ***Sugarsnap***	1,237	1,361	1,463	1,536	1,613
- ***Snow***	2,357	2,593	2,787	2,926	3,073
OTHERS	337	388	417	438	459

TABLE 111
MAJOR FRUIT PRODUCTION /FORECASTS 1999 – 2003 (TONNES)

COMMODITY	1999	2000	2001	2002	2003
AVOCADOS	9,233	10,156	10,918	11,463	12,037
MACADAMIA NUTS	810	851	915	960	1,009
MANGOES	3,995	4,794	5,153	5,411	5,681
PASSION FRUITS	932	978	1,052	1,104	1,160
PINEAPPLES	67,070	70,424	75,705	79,491	83,465

C H A P T E R 2

2.0 KENYA'S HORTICULTURAL DEVELOPMENT POLICY

Kenya has a well developed policy whose overall objectives are to accelerate the rate of horticultural growth and these are:

1. Facilitate increased production of top quality horticultural produce
2. Attain food self-sufficiency
3. Provide processors with dependable supply of suitable raw materials
4. Generate and enhance more employment by introducing labor intensive enterprises
5. Use of appropriate technology
6. Enhance development in arid and semi-arid areas through horticultural production under irrigation

There are constraints which do/can hinder the attainment of these objectives; the major ones being:

2.1 Physical Infrastructure

- The major problem that hinders commercial horticultural production is poor network. Most roads in horticultural production areas are impassable, especially during the wet season
- Telecommunications services are inadequate, expensive and unreliable
- The supply of electricity is inadequate. There is frequent power rationing and blackouts, which adversely affects horticultural production in areas of irrigation, cold storage and processing
- Water for irrigation and processing is a limiting factor in horticulture, in that the quantity supplied is insufficient and the quality unassured
- Seaport is a major facility in shipment of bulky fresh exports like fruits. However the port of Mombasa has inadequencies
- Railway transport is the second most important form of transport after roads. However, this alternative to transporting bulky produce for both local and export market is unreliable

2.2 Financing and Credit

- In the recent past, the cost of crop production has risen considerably due to the rising cost of inputs such as fertilizers, irrigation, pesticides, seeds and other planting materials, machinery and spare parts. Besides high interest rate on credit, commercial banks require securities that most farmers do not have. This has limited farmers to only low self-financing productions levels

2.3 Farm Inputs

- Shortage of high quality locally developed seeds coupled with their untimely availability have led to reliance on imports for which farmers pay exorbitant prices. Payment of royalties on imported seeds has increased cost of production even further.
- Quality of planting materials from some of the local nurseries is poor. Farmers are sold diseased, low yielding materials, which in the end give poor produce. The materials are not true to type and are often raised on wrong rootstocks

2.4 Inputs, Chemical Usage and Extension Service

- Production at small-scale level has been affected by incorrect and inadequate use of farm inputs
- Farmers have inadequate knowledge and skills in adhering to the use of recommended pesticides. This has affected the safety of consumers and the environment. High residue levels have reduced competitiveness of Kenyan produce in the International market. The market requirement on residual levels is analytical zero.
- Due to inadequate extension services, farmers in the horticultural industry have inadequate knowledge and skills on production, storage and marketing. As a result, they attain poor yields, low quality produce, incur heavy losses during storage and transportation, and hence realize poor returns.

2.5 Research

- The level of research in horticultural crops has remained low for many years. Furthermore, poor dissemination of research findings has aggravated the problem leading to poor crop yields. As a result, farmers continue to rely on imported seeds, planting materials and other technologies so as to keep pace with the constantly changing trends of production and consume demands, especially in the foreign markets.

2.6 Constraints

Infrastructure

Seaport Services

Products presently exported by sea are:

- Avocadoes
- Mangoes
- Pineapples

There is a lot of potential for passion fruit andpawpaw to be transported via sea.

Constraints via Sea Transportation

- Delays on the road especially during the rainy periods
- Delays at the point of exit – Mombasa Port
    (a) Yard congestion resulting from poor inland transportation and delays in clearance procedures
    (b) Congestion of baths leading to delays in loading and off loading
    (c) Too many costs involved in freighting – these include:
        - Transport to the port
        - VDS (Vessel – Delay – Surcharge)
        - Freight charge
        - Sea handling charge
        - KPA fees
        - HCDA fees

Suggested solutions

1. Documents should proceed consignments so that agents can process them for clearance
2. The port services should be improved to be more competitive in the region

2.7 Railway Services

Railway transport, for internal travel, is the second most important form of transport after roads. However this alternative to transport bulk for local and the export market has not been adequately utilized due to its efficiency and unreliability – major ones being:

- Frequent breakage's in the journey between say Nairobi and Mombasa (this is mainly to old rolling stock.
- Slow – the time taken is long – to the detriment of fresh horticultural produce
- A general lack of wagons
- No refrigerated wagons for fresh produce.

2.8 Airport Transport

This remains the key mode of transport of high value exports and perishable produce.

- It is currently fairly reliable in terms of space and frequency of flights
- Freight rates of between US$ 1.60-1.80 per kg still high in comparison to competition of Zimbabwe, South Africa, Egypt and Israel.
- Part of the reason for the high freight rates is the cost of aviation full – which contains a high taxation element. Government is constantly lobbied by HCDA and Trade Associations to lower the taxation and thus the cost.

2.9 Irrigation

The availability and supply of water is a major constraint. Rainfed production is available in a small portion of the country – this leads to low and seasonal production. Almost all horticultural production, especially for export cropping is done by some form of irrigation and in addition to drip (for large/medium farms) there exists simple technologies which are in use:

1. Furrow and basin irrigation
2. Flooding
3. Overhead
4. Watering cans
5. Simple drips

Small-holder irrigation is promoted by MOALD. Water is usually diverted from small perennial streams by gravity up to the plots. Farmers are generally organised to implement such a scheme, and pay some money for a water permit, and they (farmers) cover the construction and/maintenance costs of the scheme.

Government policy exists and; encourages water supply schemes; monitoring and protecting water supply sources against pollution; better utilization of available water; improvement and encouragement of water harvesting; damming of rivers for irrigation; and preservation of water catchement areas

C H A P T E R 3

3.0 THE ROLE OF PRODUCER AND TRADE ASSOCIATIONS

There are a number of institutions, both government, semi-government (parastatals) and private members Associations, which directly or indirectly participate, in horticultural industries. Each one of them offers supportive and useful facilitating roles. Below is a list of major functions and the various levels of success.

ROLE OF MAJOR PRODUCER AND TRADE ASSOCIATIONS

	NAME		MAJOR ROLE	CRITICAL FACTORS
1.	MOALM	G	• Supply information management to Agricultural sector	M
			• Facilitation of appropriate agricultural extension services	M
			• Research liasion	P
			• Promotion of private sector development	G
2.	HCDA	SG	• Licensing horticultural exporters	G
			• Advising growers on the use of certified planting materials and post handling techniques	M
			• Training farmers on the proper use of farm inputs, pesticides and Maximum Residue Levels (MRLs)	P
			• Organizing groups of small-scale growers for production and marketing purposes	G
			• Registering fruit tree nurseries	M
			• Provision of cold stores and pre-cooling facilities at major collection centres and their management	M
			• Provision of a specialized market oriented service	M
			• HCDA in collaboration with other governmente Institutions	P
3.	FPEAK	PMA	• Provision of market information	G
			• Promotion of members exports, through overseas exhibitions etc	G
			• Training members on production	M
			• Outgrower scheme	M
			• Code of Practice	G
4.	KFC	PMA	• Promotion of members exports	G
			• Code of Practice	G
			• Acceptance of Kenya Flower Label into the market	G
			• Environment concerns	G
5.	KARI	G	• Horticultural Research	P
6.	KEPC	SG	• Spearhead horticultural promotion activities	M
7.	KEPHIS	G	• Coordinate matters related to pest and disease control	M
			• Monitor levels of toxic	M
			• Produce inspection, quarantine control, seed and planting material testing	G
			• Phytosanitary inspection for imports	M
			• Establish machinery for education on safe use of agro-chemicals	P
			• To be responsible for inspection of produce for export and import	G
8.	PCPB	G	• Regulate	
			- Importation and exportation)	M
			- Manufacture and distribution of products that control pests etc)	M
9.	KBS	G	- Establish and enforce quality standards – e.g. packaging	P
10.	Universities of Agriculture		• Training in horticulture	G
			• Horticultural research	M

1. MOALD - Ministry of Agriculture, Livestock and Rural Development
2. HCDA - Horticultural Crops Development Authority
3. FPEAK - Fresh Produce Exporters Association of Kenya
4. KFC - Kenya Flower Council
5. KARI - Kenya Agricultural Research Institute
6. KEPC - Kenya Export Promotion Council
7. KEPHIS - Kenya Plant Health Inspectorate Services
8. PCPB - Pest Control Products Board
9. KBS - Kenya Bureau of Standards

G - Government body
SG - Semi-government
PMA - Private Members Association

G - Fairly successful
M - Satisfactory
P - Not satisfactory

Other who contribute although to a lesser extent include:

3.1 National Irrigation Board (NIB)

It is involved in the production of irrigated horticultural crops. It liases with the stakeholders in the provision of irrigation infrastructure for horticultural development.

3.2 Local Authorities

Develops markets and marketing infrastructure for horticultural produce, collection and dispose of garbage, provide sanitary facilities, provides land for developing marketing facilities and collaborates with the Ministry of Agriculture in the collection of levy for horticultural development.

3.3 The other Organisations involved in Horticultural Sub-Sector include:

- Ministry of Health (public health division): is charged with responsibility of ensuring that hygiene is observed in public places.
- Ministry of Water: In charge of water, including for irrigation purposes.
- Ministry of Public works: Involved in the construction and maintenance of roads.

3.4 Regional Organisations

- Ewaso Nyiro Development Authorities
- Lake Basin Development Authority
- Kerio Valley Development Authority
- Tana and Athi River Development Authority
- Coast Development Authority

The above organisations promote the growth of horticultural crops through the establishment of nurseries and especially for local urban markets.

C H A P T E R 4

4.0 THE PROCESSING INDUSTRY

There are over 10 horticultural processing firms in Kenya. The process includes canned, frozen, bottled, solar dried, dehydrated or preserved in brine.

4.1 Present and Potential Processing

	TYPE OF PRODUCE	CURRENT PROCESSED	WITH POTENTIAL
1.	French Beans	✔	
2.	Other Beans - Frozen - Dried	✔	
3.	Tomatoes	✔	
4.	Bananas	✔	
5.	Coconuts	✔	
6.	Oranges	✔	
7.	Macadamia Nuts	✔	
8.	Pineapples	✔	
9.	Concentrates - Oranges - Grapefruit - Mangoes - Passion Fruits - Tomatoes	✔	
10.	Avocadoes		✔
11.	Dried mangoes		✔
12.	Cabbages		✔
13.	Potatoes		✔
14	Strawberries		✔
15	Onions		✔
16	Snow Peas		✔

4.2 Adding Value

In the European Union, there is an increased demand for semi-prepared foods, added value preparations/presentation and increased demand for “easy prepare/easy eat foods”.

The consumer preference is for high standards of visual presentation of quality in retail displays, with fresh, uniform quality in a ready to eat condition, often a chill cabinet.
The majority of the “added value” produce is destined for UK supermarket chains of Marks and Spencer, Tesco and Sainsburgs. The trend is likely to continue.

4.3 Constraints

1. Prices of fresh produce peaks in the high export season. This makes it unaffordable for processors to pay such prices to farmers.
2. Limited local market
3. High costs of packaging
4. Most of the existing processing technologies are large scale and have large capital outlays.

HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

LIST OF PROCESSING COMPANIES

NAME OF COMPANY	ADDRESS/TELEPHONE CONTACT	PRODUCT
Bawazir Food Processors Ltd	P.O. Box 80326 Mombasa Tel: 011-485551/485478 Fax: 011-485480	Concentrates, oranges, grapefruit, Mangoes, passion fruits, pineapples, tomatoes.
Delmonte Kenya Limited	P.O. Box 147, Thika Tel:0151-21601/21600 Fax: 21414/30350 Tel:334510/70 Nairobi Office	Pineapples
Trufood Limited	P O Box 41521 NAIROBI Tel: 557700	Canned fruits and juices
Kabazi Canners Limited Frig-O-Ken	P.O. Bx 1000 Nakuru OR P O Box 41521 Nairobi Tel: 037-51311 Nakuru P O Box 30500, Nairoobi Tel: 802612/802613/860096 Fax: 860098	tomatoes french beans
Greenfields Investments Limited	P.O. Box 53366 Nairobi Tel: 545308/9, 534200/1/2/3 Fax: 53417	Frozen beans
Highland Canners Limited	P O Box 64182, Nairobi Tel: 803040/803048 Fax: 802485	Beans, Ghekins, Dry beans
H.R. Retief Limited	P.O. Box 672, Malindi	Dried fruit, mangoes, pines, bananas, coconuts.
Kenya Orchards Limited	P O Box 14, Machakos Tel:21626/21627 Machakos	Juices, jams, guava, passion fruits
Njoro Canning Factory	P O Box 7076, Nakuru Tel: 037-211736/737 Fax:037-43830	Beans, tomatoes.
Njoro Vegetables Ltd	P.O. Box 1176 Nakuru Tel: 037-61028 Nakuru Fax: 037-61233 Nakuru Tel: 0151-52353/4 Thika	beans, tomatoes
Kenya Fruit Processors Ltd	P O Box 775, Thika Tel:0151-21645 Fax: 0151-22625 Thika	Passion fruit concentrates, oranges
Premier Food Industries Ltd	P.O. Box 41476, Nairobi	
Kenya Nut Company Limited	P.O. Box 52727, Nairobi Tel: 762554 Fax: 762434	Macadamia Nuts

C H A P T E R 5

5.0 FINANCING AND CREDIT

5.1 Commercial Banks

All commercial banks in Kenya indicate their interest in lending to the horticultural industry. With few exceptions, commercial banks have a preference for lending to the business sector and large scale farmers and not to small-holders. This is because the banks regard smaller holders as having a low credit ratings and hence unacceptably risky. In order to hedge their perceived risks, the banks charge comparatively higher interest rates.

5.1.1 AFC

A parastatal organization with the responsibility for providing development and inputs credit to the agricultural sector. Although willing to lend, small-holders cultivating less than 2.0 ha are perceived as high unit in either recovering the loan or foreclosing on the collateral. Repayment of AFC loans has been poor (<50%). This, coupled with excessive overheads, has restricted its lending capacity.

5.1.2 Cooperative Bank of Kenya

Functions both as a normal commercial bank as well as a specialized institution lendings to the Cooperative sector. Only registered Co-operative societies can borrow from the Central Bank of Kenya. For small-holder farmers, who are not members of a Co-operative society, they can only borrow using a special scheme where borrowing is guaranteed through a deposit equivalent to the loan. This special scheme, has been the principal means of channeling donor supported credit to farmers.

Cooperative unions also provide loans to affiliated farmers. AFC provides, various types of short-medium loans such as seasonal crop credit, small capital development and purchase loans.

Like coffee and tea, large horticultural farms, who provide, the requisite collateral are financed by the commercial banks. It is small-scale farmers who are unable to access the credit.

5.1.3 Development Bank of Kenya (DBK)

DBK offers credit services:

Credit Services Condition

	Types	Period (year)	Interest % year
1	Production loan	5 to 8	15 - 22
2	Short-term loan	1 - 3	23 –36
3	Medium - term loan	3 - 25	-

The subject to credit are:

a) Production loan to purchase farm inputs

b) Short term loan for working capital and business expansion

c) Medium term for financing production project

Collateral is required.

5.1.4 Agricultural Produce Buyers

Some exporters of horticultural offer credit support to small holder farmers with whom they have a production contract. The standing crop which is the basis of the agreement, acts as security.

5.1.5 Agricultural Input Stockist (AIS)

Small stockists ensure the availability of farm inputs at the local level. They also provide a credit service by permitting some farmers to take farm inputs for later-after production/sell of the crop.

Since there is no tangible security, the stockist bases the decision on trust and knowledge of the borrower. The prevalence and efficiency of this type of credit is dependent on existing marketing situation as well as on production.

With stable price levels and rainfall/or irrigation sufficient, stockist will give credit – and are reluctant to do so when markets are depressed or volatile.

Supporting of small-scale growers consists of technical, marketing and financial aspects. Although the technical and marketing roles are fairly addressed by HCDA and other players eg trade associations etc, financing has not been. There is no government policy vis-à-vis credit to the agriculture or horticulture sector.

The Agricultural Development Bank is not yet in operation. Most private banks do not lend to the sub-sector, especially so to small scale. Even national banks like KCB are reluctant to provide loans owing to high risk of defaulting.

Only a rigid institution exists for small holders irrigation schemes which loans and schemes which loans and other credit agencies are offered. Some cooperative unions also provide loans to affiliated farmers. AFC provides various types of short-medium loans such as seasonal crop credit, small capital development and purchase loans.

Like coffee and tea, large horticultural farms, who provide, the requisite collateral are financed by the commercial banks. It is small-scale farmers who are unable to access the credit.

5.2 Role of Regional Banks

1. The East African Development Bank (EADB) is a regional body based in Kampala. It lends in both foreign and local currencies.
2. Off – Shore

There are a number of International financing institutions which offer long term finance at reasonable interest of between 8 – 14%; these are:

1. The European Investment Bank (EIB)
2. The International Finance Corporation (IFC)
3. The German Development Bank (GDB)

The above have the following advantages and disadvantages:

5.2.1 Advantages

- They can lend up to very high amounts (US$ 3 million) on a long term basis (5 – 10 years)
- Cash flow is greatly eased.
- Professional management is often introduced and maintained during the whole project life.

5.2.2 Disadvantages

- Feasibility studies are required. Costs of such a study (representing 1% of the study cost) are often prohibitive.
- Securities in term of land is needed, in addition to portfolio shares of the ratio of 40:60. (Entrepreneur to bank)

These elaborate and stringent requirements make borrowing, especially for the medium and small-scale holders, difficult to fulfil.

5.2.3 CONSTRAINTS TO OFFERING CREDIT

	INSTITUTION	SERVICES TO FARMERS	CONSTRAINTS
1.	AFC	1. Field Inspection of land offered as collateral 2. Charging of land at the Land Control Board 3. Train of loan beneficiaries in farm management skills 4. Recovery of loans	1. Requirement of land title as security/collateral – which discourages many small-holders reluctant to risk loss the land 2. Considerable paper work. Preparing a farm plan and cash flow projection 3. Need for the prospective borrower too present themselves to the AFC office – an intimidating act to small-scale holder based on the village 4. Severely limited amount available for loans
2.	Commercial Banks - KCB - NBK - BKK - SCB - SB - ABN	1. Issuing and preliminary assessment of a loan application 2. Appraisal of cash flow projection 3. Charging of land offered as collateral 4. Loan disbursement	1. Requirement for land as security/collateral 2. Short-term grace period 3. Repayment period relatively short – which places immense pressure on the project 4. Lengthy paper work which takes a considerable amount of time between loan initiation and disbursement at farmer level
3.	Cooperative Bank	1. Signing and exchange of a memo of understanding 2. Preparation of cash flow projections 3. Loan disbursement by directly crediting the borrowing society, or in case of special scheme, by paying to suppliers of inputs or services on behalf of group borrowers as per guarantor's instructions	1. Lengthy paper work which takes a considerable amount of time between loan initiation and disbursement at farmer level
4.	DBK	1. Lower interest rates	1. Has a head office in Nairobi 2. No branch offices
5.	Agricultural Cooperatives	1. Opening of produce sales account 2. Issuing of farm inputs 3. Recovery of loan from proceeds	1. Loanable funds insufficient in relation to demand 2. Credit restricted to Cooperative members 3. Loan processing and account reconciliation done manually this affecting the speed at which a loan request is finalized. 4. Inadequate management and organizational skills.
5.	Agricultural Produce Buyers (APB)	1. Informing farmers about available credit packages in formal field meetings 2. Organize farmers for a production contract agreement	1. Credit limited to commodity of the buyers choice 2. Availability of credit is not long-term and is influenced by factors such as the commercial fortunes of a company and incidence of epidemic diseases 3. Signing of a production contract that specifies the price, supply and timing of produce on exclusive basis. 4. Provision of inputs on credit to individual farmers 5. Recovery of input costs from produce sale
6.	AIS	1. Permit farmers to take farm inputs in expectation of later payment 2. Base discussion on trust and knowledge of borrower	1. Input stockists are, at times located too far from production areas, poor access roads worsen the situation 2. Stockists could hold wrong types of inputs 3. The price tends to be higher than expected and farmers tend to use them in low (sub-optimal) quantities 4. Demand for inputs is limited by poor or unstable produce markets or sufficient rainfall.

C H A P T E R 6

6.0 IMPORTER AND COMPETITOR ANALYSIS

6.1 Main Importers

6.1.2 UK

The UK is the primary market for fresh produce from Kenya with a share of over 30% by volume year on year. The market offers:

- Outlets across the high streets of UK providing high quality product to discerning customers, where added value is a requirement. These outlets have gradually replaced the "open air (wholesale) markets" and associated smaller greengrocers originally taking lower prices bulk product
- Sales of Kenya based pre-packed vegetables of the correct quality have been increasing annually – particularly snow peas, sugar snaps, baby vegetables, runner beans and French beans
- Large volumes of airfreight to the UK is available (both scheduled and charter flights)
- Supermarkets hold continuous audit checks on Kenyan growers, advise on technical aspects etc and have binding constraints
- All year round supply possible

6.1.3 France

The Kenyan market share revolves almost solely around French beans (Haricot Verts) and avocadoes. The avocado is limited to seafreight/airfreight demand in competition with the South African season, supplies from Kenya normally being in demand when South African is short (April/May or August/September).

- With good quality and competitive prices (e.g. FF 25/kg gross – net FF 14), the French market is open to Kenya French beans
- There is considerable freight space to France

Disadvantages

- Competitive from Francophone West African countries with lower freight costs
- Sometimes poor quality beans to the market
- Delays and shipping problems at the Port of Mombasa for seafreight avocadoes
- Lack of quality control in picking, handling and containerization of seafreight avocadoes

6.1.5 Holland

- Imports mainly through the Dutch auction system – roses, carnations, alstromeria, statice and foliage
- Holland offers a massive opportunity through the auctions for growers/exporters with good quality product, the necessary contacts and large volumes on a continuous basis.

Disadvantages

- Protection of Dutch growers by the auctions, limiting the opportunity for Kenyan small-scale growers,
- High fixed charges for handling, etc, as well as commissions whereby low value produce is likely to realize a negative return
- Competition for other countries on similar produce – e.g. roses ex-Zimbabwe. Only top quality produce with proper varieties can make a profitable return

6.1.7 Germany

- Flowers make the bulk of imports (20%). Prices are on fixed contracts and gives a more stable opportunity
- Good airfreight connections. Germany offers a growing central and eastern market, centred around imports into Frankfurt.
- Freight rates are however high on German cargo and LH passenger flights and precludes the expansion of vegetables and fruit

6.1.8 United Arab Emirates

- Exports mainly to Dubai, mainly of mangoes (varieties Ngowe, Kent, Apple, Sensation and Tommy Atkins). Sales are in January – March, then October – December.
- Other exports include small amounts of fruit (pineapples, avocadoes) beans and flowers

6.1.9 Belgium

- A parallel scenario to France with similar marketing and consumer habits. A strong French bean market for the right produce and an acceptable price
- Good airfreight via direct Sabena flights and many transit flights to Brussels
- Avocadoes also has a small market share

6.1.10 Switzerland

- The market continues to attract top quality flowers, especially roses, alstromeria and lisianthus
- Swissair allocates its airfreight space to Swiss importers – onward transit flights from Zurich are rare
- Consequently, the opportunity for Kenya exporters to break into this market is very limited, thereby having to be an agreement between Swiss importer/Kenya exporter usually on a seasonal basis
- Further freight rates are higher than average, thus limiting the scope for development of the denser lower value exports such as vegetables and fruit

6.1.11 Main Competitors

The key market window is the winter months in the northern hemisphere. Demand builds from mid September to until May for the flowers. Specialty vegetables and fruit that have acquired a constant market especially to the supermarkets go on all year round. Mangoes all year round and short term opportunities for avocadoes when Israel/South Africa is short comes in April to September.

The main competitors at full Kenya demand, is South Africa, South America and Australia.

- **Africa**

Competing countries include Zimbabwe, Zambia, South Africa, Senegal, Burkina Faso, Mali, Gambia, Nigeria, Cameroon, Ghana, Ivory Coast and Egypt.

- **Zimbabwe**

Probably the country most like Kenya in its export development and trends is Zimbabwe, for similar historical reasons in Kenya. However, the country does not have as many of the advantages of Kenya and is struggling to compete, particularly in the key market window period September – June. It also suffers from lack of airfreight capacity, its tourist market being much less than Kenya.

6.1.12 Competitor Analysis

Main Vegetables

PRODUCT	MAIN COMPETITION	KENYA MARKETING CONSTRAINTS	POSSIBLE SOLUTIONS
French Beans	Senegal, Burkina Faso, Mali, Zimbabwe, India	1. Quality/variety 2. Higher airfreight cost	1. Better husbandry/cool chain 2. New varieties 3. Lower airfreight cost 4. Kenyan auction to raise standards, returns to farmers
Asian Vegetables	West Indies, Gambia, Zambia, India	1. International supply 2. Quality varies 3. High airfreight cost	1. Growing programmes 2. Technical input 3. Kenyan auction to raise standards, returns to farmers
Snow Peas	Guatemala, Zimbabwe	1. Quality problems May- Sept, November	1. Cover the crop in wet months 2. Better, more vigorous seed 3. Kenyan auction to raise standards, returns to farmers

Main Fruits

PRODUCT	*MAIN COMPETITION*	*KENYAN MARKETING CONSTRAINTS*	*POSSIBLE SOLUTIONS*
Fresh Pineapples	Ghana, Ivory Coast, Costa Rica	1. Limited availability 2. Poor seafreight facilities 3. High airfreight cost	1. Process fresh at source/airfreight 2. Preferential airfreight rate
Mangoes	South Africa, Gambia, Ghana, Costa Rica, Ruerto Rico, Mexico	1. Poor harvest/husbandry control 2. Wrong varieties for seafreight 3. Poor seafreight facilities 4. High airfreight for inferior product	1. Process at source/airfreight 2. Preferential airfreight rate 3. Technical assistance on husbandry, handling
Avocados	South Africa, (by seafreight in Kenya season), Israel, Spain, U.S.A, Mexico	1. Fuerte not preferred variety 2. Poor seafreight facilities 3. Poor picking control from small scale farmers	1. Move to Hass variety 2. Sort out Mombasa Port 3. Preferential airfreight rates in June-August
Strawberries	Israel (in Kenya season) Spain, Holland, U.S.A	1. Variety constraints/sweetness 2. Travel delays 3. Long growing period	1. New varieties, better yields 2. Tight transport cool chain
Passion Fruits	Zimbabwe	1. Not a major market	1. Processing at source
Melons	Spain, Brazil, Israel, South Africa (all by seafreight)	1. Not possible by airfreight (too heavy) 2. Quality/climate control	1. Seafreight 2. Technical Inputs

CHAPTER 7

7.0 PRODUCTION AND MARKETING ISSUES

7.1 CONSTRAINTS TO THE DEVELOPMENT OF THE HORTICULTURAL SECTOR IMPROVING SUPPLY CAPABILITY

7.2 Lessons of Experience

The following chapter discusses the lessons which can be learnt from the Kenyan experience in the horticultural industry. Firstly it details out the strengths, weakness, opportunities and threats to the industry in a tabulated format. **(A Swot Matrix)**

A. Strengths

1. Favourable climatic conditions with equable temperatures all year round.
2. A wide range of vegetables and fruit species, with fairly reliable and consistent supplies, which makes it attractive to buyers.
3. Large to medium scale companies, which give a degree of stability and technological leadership to the sector.
4. There are close linkages with European importers, mainly the UK, France, Holland and Germany and a steady flow to the Middle East.
5. Reliable and direct flights to the main market destinations
6. Readily available and easily trained and low cost labour.
7. As a signatory of the UPOV convention, Kenya recognizes breeders rights, thus giving the country a better access to new varieties.
8. A well trained labour force

B. Weaknesses

1. Inadequate infrastructure; poor access roads to the production areas and to the market; insufficient and yet expensive electricity; inefficient railway system.
2. Low quality produce and low yields leading to high production costs.
3. High cost of farm inputs, including seed, fertilizer and chemicals.
4. Insufficient horticultural extension services, ineffective extension messages and poor delivery system and adoption.
5. Poor post-harvest handling leading to post harvest loss.
6. Unacceptably high pesticide use and ignorance of environmental concerns as demanded by importing countries.
7. Lack of cooling facilities in the rural areas.
8. Unstreamlined marketing channels and the exploitation of farmers by middlemen.
9. Heavy handling charges for services at the Jomo Kenyatta International Airport
10. Fairly high freight rates and (inadequate cargo space)
11. Lack and access to adequate and reasonably priced credit.
12. High bank interest rates, which discourages borrowing
13. Lack of adequate market promotion.
14. Ineffective regulatory constraints

C. Opportunities

1. The Horticultural Produce Handling Project – this will provide the handling of product to outgrowers/small-scale farmers – collection depots with precooling facilities, technical advice and collection facilities to a main Horticultural Centre where cooled produce are consolidated and then sold to exporters on an auction basis. This will reduce post-harvest loss, improve quality and increase farmers income.

2. With increased fresh value adding niche markets in the European Union will be consolidated.

3. Able to exploit marketing opportunities of next door neighbours, e.g. the Middle East.

D. Threats

1. The expiry of the Lome Convention may affect the present competitiveness of the industry.
2. Unacceptably high usage of chemicals by farmers and the MRL (Maximum Residue Limits) on vegetables and fruits – is a worrying issue.
3. Adverse International Publicity concerning use of chemicals and social and environmental issues like labour and the environment
4. Competition from other countries for market share, offering new varieties of traditional Kenyan products – e.g. French beans.
5. Lack of investment by Kenyan growers/exporters in European Union standard packhouses for supermarkets, mainly duly to duty/VAT constraints in Kenya on imported equipment required for cool chain.
6. Airfreight rates from other countries lower than from Kenya e.g. South Africa.

Over 70% of vegetables and fruit is produced by small-scale holders – who have certain specific problems which need to be addressed if the industry is to continue to grow; and these are:

E. Problems/Constraints specific to Small Scale Growers

1. Their acreage under horticultural crops(s) are narrow – 0.25 – 1.5 acres. And mostly rainfed.
2. Difficulty in procuring seed and other inputs.
3. Relatively expensive inputs costs
4. Unavailability/inaccessibility to financing loans - they do not have access to loans from AFC or private banks due to lack of mortgage security.
5. Labour shortage in peak harvesting time.
6. Precarious and irregular collection by exporters/and brokers (road conditions from collecting points are generally poor)
7. Unrenumerative farm gate prices. Small-scale farmers also suffer from cost-price squeeze – there is a tendency for input cost indices to increase while farm-gate price decline, due mainly to exchange rate, expensive air cargo tariffs and poor quality product.
8. Lack of information – market prices and prices and the supply and demand dynamics.

1. Horticulture offers increased food self-sufficiency, generation of income and employment
2. Provides raw materials to the processing sector – thus encouraging industrialization.
3. Produce should/must be of good quality to be well accepted in the International markets.
4. Development of new product lines is vital to the survival of the industry. Consumer preferences are never static.
5. Producers/Exporters need to be in touch with markets, gather appropriate marketing information (i.e. price, packaging, timing) and respond to it.
6. Apart from traditional markets, continuously search for new markets and opportunities.
7. In order to develop new products, farmers should have access to new varieties and updated production technologies at a competitive price.
8. In addition to basic research, adaptable market oriented research is necessary, and resultant finding be developed into appropriate extension packages and the resultant data to be simplified for easy use by extension officers and farmers, e.g. in local languages
9. Address the constraints by involving the government and other Trade Associations.
10. Regulation should create an enabling environment.

7.3 PRODUCTION ISSUES

1. Low quality produce and need for good Agricultural Practice (GAP)
2. Poor post harvesting handling and phytosanitary problems leading to crop loss.
3. Low yields with the resultant high production costs.
4. High cost of farm inputs, including seed, fertilizers and chemicals.
5. Insufficient horticultural extension services, ineffective extension messages and poor delivery system and its adoption
6. Limited horticultural research
7. Lack of cooling facilities, especially in the rural areas
8. Unacceptably high pesticide use and ignorance of environmental concerns as demanded by importing countries
9. Unaccessibility to production credit
10. Inadequate water for irrigation

1. Low Quality Produce and need for GAP

Horticultural produce is judged on its perceived qualities – and its important to put in place quality control systems (QSS).

7.4 STANDARDS AND QUALITY CONTROL

Standards are applied to meet the qualitative aspect of demand from the importers, inclusive of packaging, sizes and quality, requirement of health etc. Maximum Residue Levels (MRLs) have been imposed by EU. Problems may arise when farmers spray banned chemicals without observing pre-harvest intervals (usually 2-3 weeks depending on chemicals) to crops for export. MOALD&M has established quality standards for major horticultural export produce, covering size, appearance/colour, packaging module/weight etc. Plant quarantine check is applied to all horticultural exports by inspectors of MOAL&M at the airports, seaports, extracting samples from a lot of produce.

As to MRLs, HCDA field officers and front-line extension staff adequate instructions to growers to avoid trouble in exporting activities. Also, they provide timely advice for relevant spraying practices, specifying suitable chemicals to control quality deterioration by insect attack or by outbreak of diseases that spoil the quality of exportable produce, giving stain, spot, rot and other dirty appearance or cause of rejection by buyers.

7.5 POST – HARVEST CONSIDERATIONS

While spraying a fresh market from a range of products, say Asian vegetables, “post-harvest’ will be the difference between the harvested and that exported, defined by:

1. That rejected by the farmer, grader or packer as being below the quality required. This can lead to large losses of the crop harvested.
2. Produce that has been harvested and graded to the appropriate quality but subsequently not sold. This is due to a variety of reasons, including; poor marketing, lack of access to areas served by bad roads by buyers during wet weather, poor interest of buyers based on poor international prices. This can create a potential “post-harvest’ loss of up to 100% of crop harvested in some instances.
3. The reasons behind ‘post-harvest’ losses in the case of export produce are:
    - Poor harvest practice and poor grading
    - Damage of deterioration of the product once graded
    - Poor cooling/unsuitable transport to the market

The relationship between the health and quality of the growing crop of pre-harvest treatment, harvesting tecnique and post-harvest treatment packing is responsible for the quality and success of the individual producers and their products.

It is impossible to separate one aspect and look at it in isolation. The best harvesting techniques will not improve the quality of an unhealthy crop, nor will good “post-harvest” treatment make up for poor harvesting technique. The point is that they are all part of a system of production for export and must be treated as such.

Attached is a profile of the current practices in the principle product growing areas, followed by a summary of the factors affecting export for Asian vegetables quality which can be summarised into:

Pre-harvest

1. Planting Material
2. Agronomy

Post-Harvest

3. Field Harvest
4. Grading and Cooling
5. Transport and Sale

The current estimates for post harvest losses are given, along with a potential reduction which can be achieved with the advice, technology, transfer and inputs available through the proposed horticultural centre and satellite depots.

7.6 FARM INPUTS (PLANTING MATERIAL)

These are comparatively expensive and at times unavailable both in quality and quantity.
Seeds determine the basic quality of produce, hence it is important for the production of export-oriented crops. Almost all vegetable seed for these crops should be imported from, and usually horticultural crop importers are at the same time suppliers of these. Seed is in some cases delivered from exporters that have supply contracts with growers, but in most cases growers buy it from village stores, middlemen, etc. Seedlings of fruit trees are locally available in nurseries established in each district etc. Seed supply is tabulated below.

7.7 HORTICULTURAL RESEARCH

There exists serious gaps between technology generation and adoption and these gaps are a factor to the decline in small holder contribution to the industry.

a) Production Packages

1. Higher yielding and disease resistant varieties.
2. Site specific fertilizer recommendations based on soil analysis and varieties.
3. Crops management practices based on actual field experiences.
4. Better and safer crop protection, chemicals and more practical information of IPM.

b) Marketing and Other

1. Post harvest handling technologies
2. Irrigation technologies
3. Research on pests and disease management
4. Legislation regarding use of biological pest control methods

CONSTRAINTS

1. The existing organizations charged with the responsibilities of research lack the dynamism and sensitivity required in the competitive and commercial sub-sector
2. High reliance on donor funds for research with little contribution from the industry.
3. Weak research – extension – farmer linkages
4. Limited collaboration between research organizations and other stakeholders
5. Lack of market driven and participatory research

7.8 RESEARCH SERVICES (KARI)

1. Conducting soil fertility tests on request
2. Carrying out surveillance on crop pests and outbreaks of disease
3. Farm inputs for crop spacing, fertilizer and crop application
4. Introducing new crop varieties and screening them for adaptability

CONTRAINTS

1. KARI to a great extent, depends on the Government for its operational budget. Hence, at times, KARI is unable to execute some of its field activities and implement its research work plan due to lack of funds
2. Weak linkages between extension and research in solving small-holder problems
3. Lack of a section for addressing special research problems for small-holder horticulture

7.9 EXTENSION SERVICE DELIVERY

Supporting of small-scale growers consists of technical, financial and marketing aspects.
The Ministry of Agriculture has an extension service network which offers general information. HCDA offers special horticultural service through its local staff and provides farmers with practical know-how and systematic field practices to cope with confronted problems, like plant protection and irrigation. It also helps them procure inputs or appropriate economic transactions like bulk purchase of fertilizers through relevant organizations (e.g Cooperatives etc). HCDA staff are consulted by growers who need to solve their technical problems and latest information for their better marketing and future farm planning. However, with regard to the latter, progress has so far been made for them to organize groups for contracting delivery with collectors/exporters, without proceeding further to unite into cooperatives etc, for better economic viability. Efforts have been made by them to organize horticultural cooperatives, etc for supporting horticultural activities.

7.10 EXTENSION SERVICE SUPPORT

1. Organize field days for training farmers on post-harvest horticultural crop handling and packaging
2. Organize demonstrations of pesticide applications
3. Assist in arranging exhibitions of packaging of produce
4. Assist farmer groups in concluding production contract agreements with exporters
5. Collecting and analyzing price information

CONSTRAINTS

1. Insufficient funds for operational activities
2. Inadequate capacity for disseminating technical and marketing capacity to farmers particularly guide them on cropping and planting patterns.

UNACCEPTABILITY HIGH PESTICIDE USE

Pesticides

The area of chemical application rationale and their usage has its shortfalls.

Little awareness of pest/disease levels of crops

- There is a tendency to spray because of weather conditions or the neighbour is praying.
- Application is by knapsack sprayers which often are in poor conditions and therefore leak etc. Leaking to low efficiency which in turn promotes pest and disease resistance.
- Chemicals in use are the older types where larger quantities are needed, consequently contributing to higher residues.
- Incorrect dosages

HCDA, PCPB and KEPHIS do inform at national levels the importance of residue level requirements (via press and radio). HCDA and Ministry of Agriculture extension service emphasise this aspect through "barazas) (district forums) and at cooperative and individual farmer levels.

Large-scale farmers who export to EU supermarkets have implemented most requirements of normal pesticide use due to pressures of their clients. They have also the ability to do so as they employ knowledgeable managers.

On the whole, the MRL requirement is a cause of difficult and concern to the industry.

- The MRL issue is complex, from a technical point, for extension officers to understand and effectively explain.
- Official channels for communication are not always effective, partly due to inadequate field extension capacity (funding).
- Growers and exporters are relying on diverse sources of information (importers etc) which has tended to provide inaccurate and inconsistent information.
- Smaller growers are unable to switch to alternative chemicals with lower a.i's due to expense and unavailability.

If implemented, MRL's will cause a drastic reduction in small holder involvement in export. However small holders may switch producing fruit and vegetables for the local urban markets.

C H A P T E R 8

8.0 A CASE STUDY

1 A Profile of French Beans

8.2 Background

This represents the series of steps that farmers of French beans go through. Through a series of farm visits, the type of technical and marketing support was evaluated, and an understanding gained of farmers particular needs and problems as they perceive them.

Access of their crops allowed an appraisal of the crop, plant health, pest and disease levels etc to be carried out to allow an objective view of their growing systems and operations made.

8.3 Farming System

French beans are the most popular cash crop amongst small-holders. The relatively short growing period allows the crop to be the basis of a regular cash income. There are constraints in input availability and marketing which prevents the wider cultivation of French beans, along with the more local constraints of water availability and climate/rainfall patter.

Generally, farmers will plant as much as they can sell and those with contracts or a firm commitment from an exporter may have up to 100 per cent to their land to French beans.

In this instance the beans will be cropped up to four times on the same land until a noticeable reduction in plant vigour occurs when they may plant maize. Some farmers may manure very heavily to support such a mono cropping system.

The rainy season brings with is two problems, a higher disease incidence in the crop and poor accessibility to areas with bad roads preventing regular collection by exporters.

Typically cropping would follow:
Mid-August to mid-March –French beans planted
Picking completed by mid-May
March, April, May, June – maize, potatoes, cabbage, onions, carrots planted for local market/consumption.

Sites with good access to local markets may give tomatoes and onions more prominence in a rotation with French beans.

The size of holding is mainly between three and five acres, typically farmed by a family. In general one acre of French bean does fully occupy one person, but during the peak production more labour for harvesting are needed.

There are a number of collection centres. At each place there is simply a clean room with a table for check grading. Obviously the buyers, exporters must turnup regularly and this the greatest concern of the farmers, leading to potentially massive losses. It is against the background of poor commitment from the exporters the middlemen thrive, feeding on the uncertainty of the market to panic/persuade farmers to sell their produce at lower prices. In many cases these middlemen are only young men with an attitude and bicycle so they can get the produce to a main road or pick up point, but lamentably they can be all the security a farmer has to market his crop. Some companies have organised farmers into regular planting so no shortfalls and gluts are experienced, and collection is regular and dependable. These simple points create the basis of a dependable cash income for countless small farmers.

From a technical point of view, it is clear that farmers have been informed to a reasonable level in the basics of growing beans. All farmers use a sensible fertilizer application programme, planting distances are regular and plots are well managed and attended. It must be concluded that the HCDA and other extension services have succeeded in getting basic information over to the farmers. Also farmers have good interest and opinion about the crop, which forms the basis for improvement.

On every farm a pesticide application programme is underway with a variety of chemical and criteria for their use. Farmers know of the need to spray and do so, but the area of chemical application rationale and their usage does have its shortfalls.
Growers show little awareness of the pest and disease levels of their crops. There seems a tendency to spray because the neighbour is spraying or because of the weather conditions, rather than a more objective decision.

Chemicals inputs are expensive, sourced from local shops in small containers in rather dilute concentrations, at about twice the price a larger wholesaler could source in a bulk purchase.
There is a larger than expected differential with the farmer paying up to three times the price of a larger concern. Also there is a noticeable difference in prices within districts and between districts, which may well be due to a scarcity and growers buying whatever they can get at whatever price.

Application is largely by knapsack sprayers, even some old stirrup pump coffee sprayers are in use. Considering up to twenty five percent of the crop cost may be chemical and, therefore, pass through a poorly, unmaintained sprayer there is a great potential to lose the full effect of the product. A chemical used at low efficiency can only promote pest and disease resistance to the products.
Chemicals in use are the older types where larger quantities are needed, consequently contributing to higher residues and potentially less efficient than more modern products. The older products are cheaper per kilogram but more is needed per acre, the newer products are more expensive but less in need, so overall cost is similar but they are effective, a concept the farmers have not grasped.

Evidence of incorrect dosage was observed, where one product was applied at four times the correct rate. An expensive and potentially harmful practice.

Protective clothing is rarely in use and mixing of chemicals is usually done near a water source. If this happens to be a spring or steam (as observed), then the possibility of contaminating the supply is alarmingly high.

The importance of seed type, variety and quality cannot be overstated. Farmers are constrained to the varieties sought by the exporters, irrespective of yield potential. More importantly, the quality and availability of seed is very unreliable. Due to the irregular supply, growers are keen to get hold of whatever seed they can, but the quality of which may be poor by International standards. Currently there is no way that the farmer can assess the seed quality before committing further scare and expensive resources to its cultivation.

To illustrate how seed is such a constraint, farmers express all crop costings and yields on a "per kilogramme of seed basis" which compares to other farming systems where land is a limiting resource and crops and costs are expressed "per are or hectare". Good quality seed presently is very weak and not dependable.

POST – HARVEST LOSS

A total of post-harvest losses as shown

- Worst case 65%
- Best case 15%
- Therefore, average 40%

ANALYSIS OF POST-HARVEST LOSSES (FRENCH BEANS, MANGETOUT AND OTHER LEGUMES)

PROJECT	LOSS	CURRENT SYSTEM	LOSS
Field Harvest a) Crop harvested to market specifications e.g. Fine 15 cm. X-Fine 10 cm. Use of containers/picking/trays/field boxes washed and disinfected to prevent contamination of product also allowing air circulation/shade, so warm produce does not gain any more heat. Installation of field coolers, wet hessian or wet charcoal to reduce initial high temperatures.	**Post-Harvest**	**Small scale farmers/outgrowers** Poor harvest discipline/control of pick stage Picking into plastic bags, kikois, dirty boxes, produce picking up more heat, begins to break down, produce contaminated/damaged	5-15%
Grading and Cooling a) Care in handling, protection of produce from physical damage and contamination using appropriate pack station containers, grading in shaded areas, use of field coolers		Picking up heat in sun, drying out, picking up dirt, produce degrading	5-15%

ANALYSIS OF POST-HARVEST LOSSES (FRENCH BEANS, MANGETOUT AND OTHER LEGUMES)

CURRENT SYSTEM	LOSS	PROPOSED SYSTEM	LOSS
Use of locally/self propagated seed carry forward of disease/bacterial infection. Poor vigour, reduction in crop ability to withstand disease/pressures/inability of crop to reach full potential. Yield and quality produce reduction. Use of whatever seed they can find and at whatever price Poor understanding of correct storage	15%	**Planting Material** a) Access to good quality seed, with high vigour and health status. b) Informed on variety choice to suit farmers' situation, the season and export market c) Access to well stored seed to maintain viability and high germination	Minimal Minimal
Loss of control and high incidence of pest and disease Poor rotation and pest/disease build up. Inappropriate or inadequate feeding of the crop.	20%	**Agronomy** a) Use of correct pest and disease control measures, pest and disease identification. Appropriate pesticide/ fungicide choice for the main problems, rusts, aphid, thrips and caterpillars, seed dressing for bean stem maggot. Appropriate spray application techniques, correct calibration and spray cover, use of rotation irrigation and fertilizer inputs appropriate to farm situation	Minimal

PROPOSED SYSTEM		CURRENT SYSTEM	LOSS
Poor harvest discipline/control of pick stage Picking into plastic bags, kikois, dirty boxes, produce picking up more heat, begins to break down, produce contaminated/damaged. Picking up heat in sun, drying out, picking up dirt, produce degrading	5-15% 5-15%	**Field Harvest** a) Crop harvested to market specification. Use of containers/picking/trays/field boxes washed and disinfected to prevent contamination of product also allowing air circulation/shade, so warm produce does not gain any more heat. Installation of field coolers, wet hessian initial high temperatures. **Grading and Cooling** a) Care in handling, protection of produce from physical damage and contamination using appropriate pack station containers. Grading in shaded areas, use of field coolers	Minimal Minimal

GROSS MARGIN ANALYSIS – FRENCH BEANS

	QUANTITY	*UNIT VALUE/PRICE US$*	*RETUNS/ EXPENSES UNIT = US$*
1. Production Costs			
Hired labour (80% family 20%)	3,200/manhour	1.50	480
Land rent (1/3 of a year)	1 ha	100 ha/year	34
Water rates (1/3 of a year)	1 ha	10	4
Land preparation	1 ha	15	15
Seed	50 kg/ha	7/kg	334
DAP as basal dressing	200 kg	34/50 kg	136
CAN as top dressing	200 kg	30/50 kg	120
Ambush	4 ltr	36/ltr	144
Copper-oxychloride	2 kg	12/kg	24
Dimethoate	2 ltr	18/ltr	36
Benlate	2 kg	40/kg	80
Baicor	2 ltr	35/200 ml	350
Sub – Total			1,757
2. Marketing Costs			
Hire of boxes	1,900 cartons	0.30/carton	570
Transport costs	1,900 cartons	0.14/carton	266
County Council Cess	1,900 cartons	0.04/carton	76
Market off-loading	1,900 cartons	0.04/carton	76
Miscellaneous	-	-	40
Sub – Total			1,028
Total variable costs			2,785
Yield/ha and its value (FOB)	1,900 cartons	70-90/carton	2,026

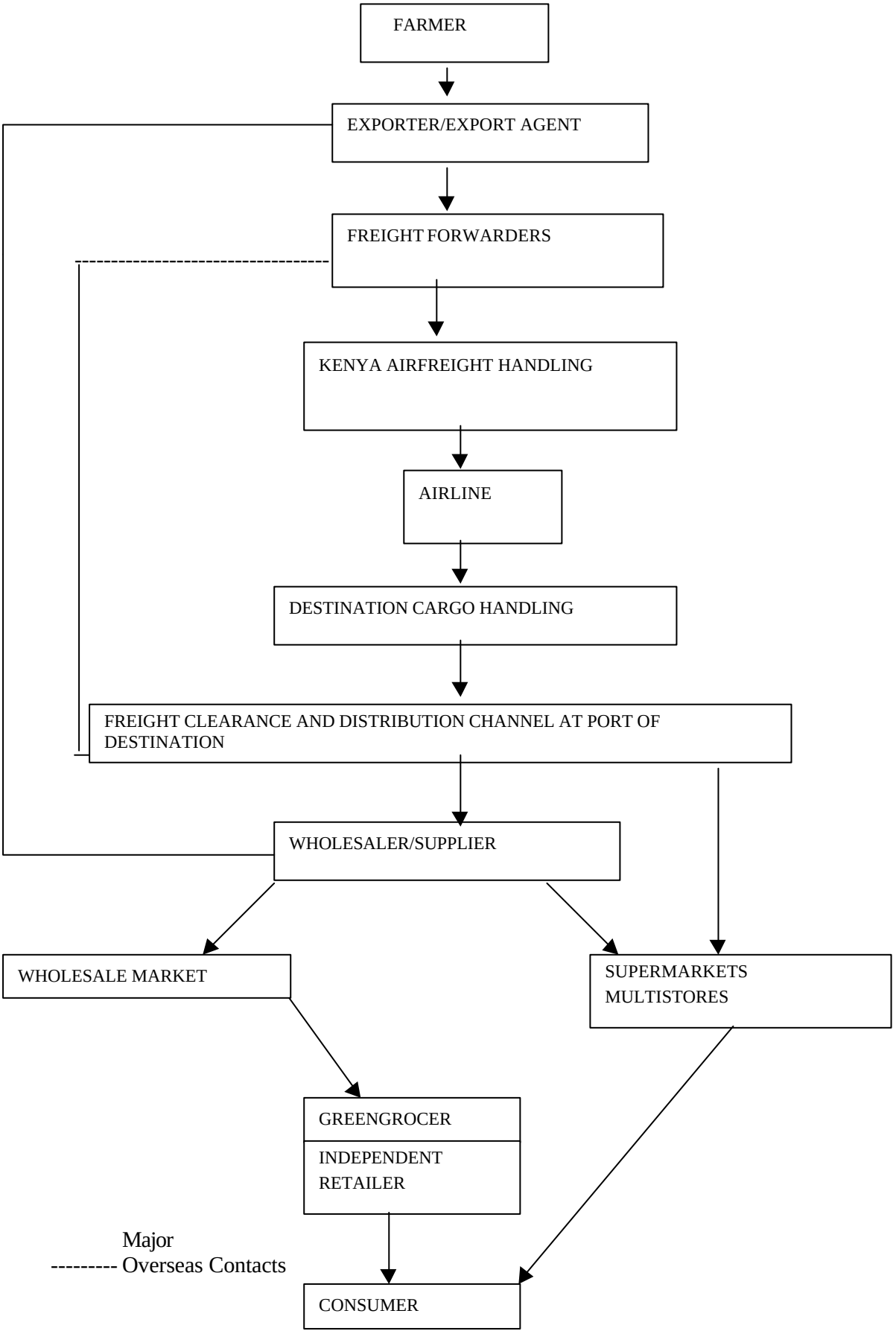
C H A P T E R 9

9.0 MARKETING ISSUES

These can be classified as:

1. Unstreamlined marketing channels and the exploitation of farmers by middlemen/exporters
2. Heavy handling charges for services at the Jomo Kenyatta Airport
3. High freight rates and at times inadequate cargo space
4. Poor packaging and labelling of the produce
5. High distribution costs/low profit margins
6. At times unable to meet specified product of required quality; continuity of supply and volume and delivery schedules.
7. Export promotion is inadequate
8. Adverse publicity on Kenyan produce
9. High royalty payments on planting materials
10. Regular gluts and shortages

A NORMAL CHANNEL OF KENYA HORTICULTURAL EXPORT PRODUCE

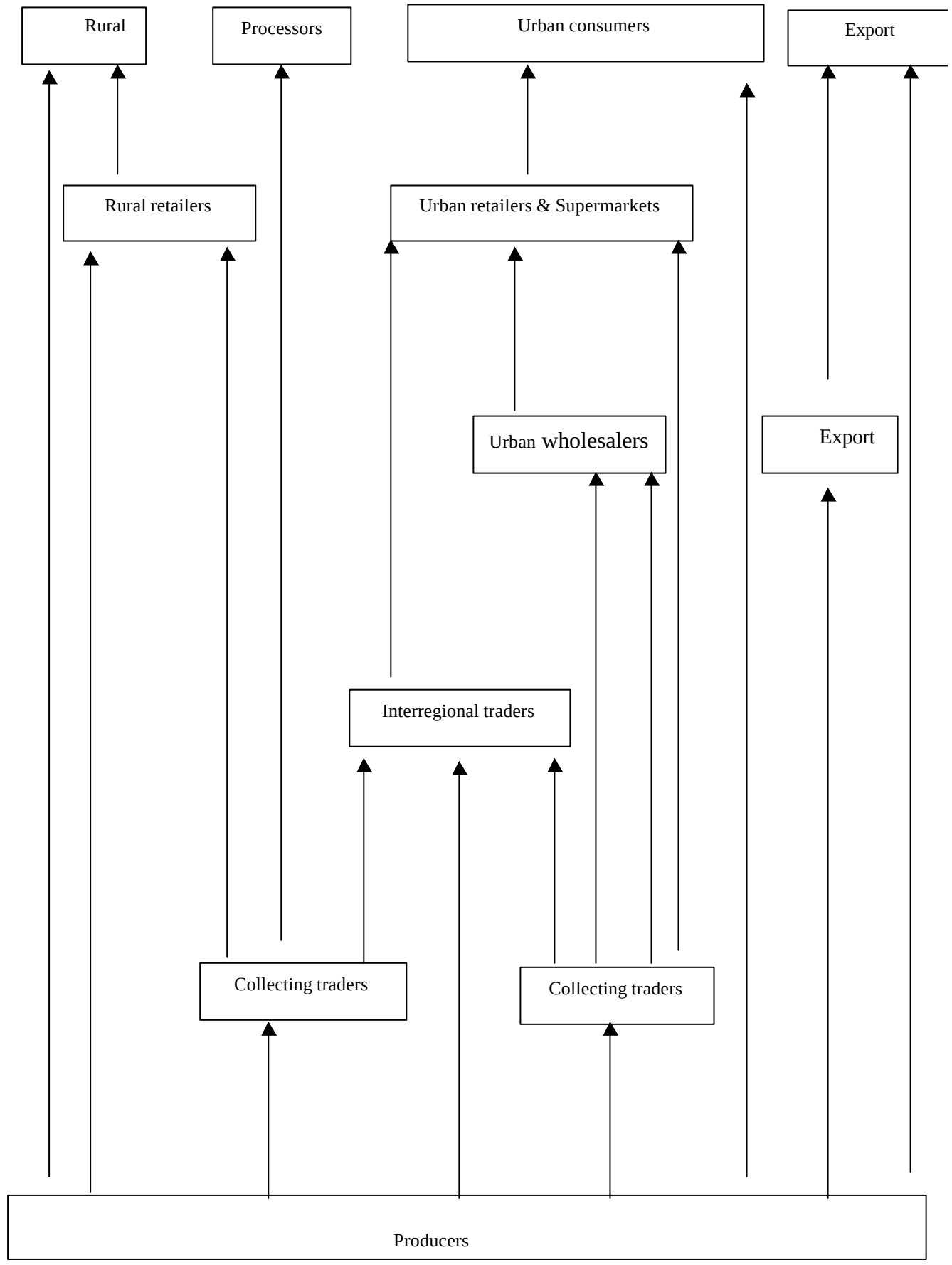


LOCAL MARKETING

Many vegetable and fruit types are grown for the market – cabbages, banana, avocadoes, mangoes, pineapples, plums, pawpaws, tomatoes etc. In addition, export quality produce, which does not meet the International standards are offloaded into this market sector and referred to as “rejects”. Urban centres consume the major part of the produce. Wholesale markets handle 70% of the fresh produce; 20% by direct sales and 10% by supermarkets.

A typical flow of produce is shown below

Horticultural commodity flows and traders involved



LACK OF ADEQUATE PROMOTION

AT EXPORTER LEVEL

i. Lack of what the market wants in terms of variety and timing.
ii. Inadequate price information – to enable a competitive bargain and margins.
iii. Often importers claim (in bad faith) that the unacceptable quality; leading to non-payment. The lack of representation has led to enormous losses.

AT FARM LEVEL

1. Without proper marketing information (plan) – production planning is haphazard.
2. There is a tendency to exploit the farmer on prices.
3. If the exporter is not paid, due to deceit by importer, the farmer in most cases, does not get paid.

AT GOVERNMENT LEVEL

1. Presentation at International shows and exhibitions.
2. Effective advise on the latest issues like MRL's

- The role of price/market information is best played by specialized bodies like COLEACP, Auction Houses, Media (Reuters) etc but the costs are high.
- The role of representation at shows and customer/exporter reconciliation can be achieved through missions via trade sections.

REGULATORY

1. Licences and charges minimise these costs
2. Water irrigation (some water sources are polluted through sewage disposal and industrial effluent) – adding chemical residue levels to the unacceptable residue tolerance)
    - Establish water supply schemes for horticultural production
    - Monitoring and protecting water supply sources against pollution
    - Dam river water for irrigation
    - Preservation of water catchment areas
3. Reduce some government levies – e.g freighting
    - VAT, VDS (Vessel delay surcharge)
    - Freight charges, KPA fees and HCDA fees
4. Improvement of overall infrastructure; road access; electricity, water supplies, telecommunications, railway and seaport facilities
5. Effective extension by HCDA and regular training on us eof inputs etc.

STRATEGIES FOR THE FUTURE

1. Increased quantity production
2. Strong government and industry support for small-scale producer
3. Expand product portfolio and intensify the search for new markets and marketing opportunities
4. Develop alternative and cheaper means of transport (e.g. sea transport)
5. Support for horticultural research
6. Ensure judicious use of pesticides be environmental friendly
7. Implement action on the national code of conduct and the industry's code of practice.
8. Develop and encourage ethical trading.

1. Encourage production in all areas of the country to meet food needs, export and create employment.
2. Develop efficient rural collection and marketing systems through the private sector and the local authorities.
3. Encourage contracted production and marketing arrangements to reduce waste and maintain a fair return to the farmer.
4. Encourage financial institutions to avail credit to growers.
5. Train farmers to improve yields by adopting appropriate technologies and maintain quality.
6. Ensure the protection of the environment and safe use of pesticides.
7. Encourage investment in modern technology through duty exemption on equipment and inputs like greenhouses, shade nettings, PVC, cold storage and soluble fertilizers.
8. Encourage adding value to export produce through duty exemption for pre-packaging material.
9. Improve on the establishment of processing industries through appropriate fiscal policies.
10. Develop sea freighting of less perishable produce to widen the clientele overseas.
11. Improve general infrastructure, and especially accessibility to production areas.

ANNEXES

ANNEX 1

1.0 KENYA

GENERAL FEATURES

1.1 Location

Kenya is located on the East Coast of Africa, with the Equator running almost straight through the middle of the country. Its Northern border touches 5^{o} of latitude North and the southern border touches 4^{o} South. The western border is marked by 34^{o} East longitude with an elevation of 1,200 to 2,800 m.

1.2 The Geography

The country has a great diversity of physical features. The low-lying arid and semi-arid lands of the north and northeastern province cover nearly two-thirds of the country. The Coastal belt runs along the Indian Ocean from the Kenya - Tanzania border to the Somali border.

1.3 Climate

The country's altitude rises from sea level to 5,000 meters, making the climate vary from high humid temperatures of the coast to the often cold and wet regions of the Aberdare's, Cherengani, Mau Escarpment, Mt. Elgon and the permanent snow caps of Mt. Kenya.
Kenya presents great variation in climate and vegetation, enabling the production of a variety of horticultural crops in various parts of the country.

Kenya has two rainy seasons, March to May and November to December, with an intervening dry season. Two main wind systems also affect the climate; the dry North-East trade winds and the tropical South-East trade winds, which bring heavy rain in the month of April. Higher rainfall in Western Kenya is a result of south-westerly passing over Lake Victoria.

1.2 Population

In 1999, Kenya's population was censured to be 29.1 million out of which 49% is male and 61.0% female.

1.3 Land Area

Kenya has a land area of 580,370 sq.km. Out of this 40% is classified as of high and medium agricultural potential.

1.6 Economic Structure

Although sectorally diverse by African standards, the Kenyan economy remains dominated by agriculture, which still accounts for 28% of GDP. The sector is itself diversified, consisting of varied food and cash crop sub-sectors, as well as livestock, forestry and fishing. The non-monetary component of agriculture is small.

In sub-regional terms, Kenya is the most developed of the three countries of the former East African Community, with GDP in 1999 in dollar terms almost three times that of Tanzania and 40% higher than Uganda’s.

TABLE 1V

Main Horticultural Production Areas

Production area	Altitude	Type of production (rainfall p.a.)	Major vegetables		Minor vegetables	Fruits
			Domestic market	Export market		
A) Kiambu, Machakos, Nairobi	800-2400 metres	Rain-fed (1500-2000mm) Machakos: irrigated (1) (600-1000 mm)	Cabbage Carrot E. potato Kale (spring) onion	Brinjal capsicum chili Okra French bean karela	Broccoli Pea Brussels sprout cauliflower courgette lettuce spinach cucumber	Mango citrus Papaya banana Pineapple passion fruit avocado
B) Baringo, Nyandarua, Nakuru	2100-2800 metres, Lake Naivasha: 1900 metres Lake Baringo: 1000	Molo, Nyandarua: rain-fed (1200-1800 mm) Lake Naivasha, Lake Baringo: irrigated (400-600 mm)	Cabbage carrot E. potato Kale (spring) onion garden pea	Capsicum Chili courgette French bean cut-flowers (2)	Broccoli spinach Brussels sprout cauliflower courgette lettuce cucumber (2)	Plum apple pear
C) Embu, Meru, Nyeri, Murang'a	800-2500 metres	1200-2500 m: rain-fed	Cabbage Carrot E. potato Kale Onion tomato (4)	Brinjal Capsicum French bean (5)		Banana orange papaya pineapple
D) Kisii, South Nyanza	1100-2200 metres	Rain-fed (Kisii: 1200-2100mm, S. Nyanza: 700-1800 mm)	Cabbage Kale Onion tomato			Banana, pineapple passion fruit
E) Busia, Siaya, Kakamega, Bugoma, Kisumu	Busia, Kisumu, Siaya: 110-1500 metres Bungoma, Kakamega: 1200-2000 metres	Rain-fed (Bungoma, Busia, Kakamega: 1100-2000 mm; Kisumu, Siaya: 700-1800 mm) Lake Victoria: irrigated	Cabbage Kale (spring) onion tomato	French bean (tinned)		Mango banana passion fruit orange
F) Trans Nzoia	1600-2200 metres	Rain-fed and irrigated (6) (900-1400 mm)				Citrus apple avocado
G) Kilifi, Kwale	0-500 metres	Rain-fed and irrigated (7) (400-1400 mm) (8)	Brinjal Capsicum onion tomato			Mango citrus cashew nut
H) Taita-Taveta	600-1000 metres Taita Hills: irrigated (400-600 mm)	Cabbage Carrot Kale Onion Tomato				Banana, mango, passion fruit
I) Oloitokitok	1800-200 metres	Irrigated (600-800 mm)	Onion tomato			
J) Garissa	200-300 metres	Irrigated (250-500 mm)				Banana, citrus, melon

SOURCE: HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

ANNEX 2

2.1 LIST OF VEGETABLES GROWN IN KENYA

1 VEGETABLES

Common Name	Other Names	Scientific Name
1. French Bean	Snap Bean, Haricot Bean, Green Bean, String Bean.	Phaseolus Vulgaris L.
2. Chilli	Capsicum, Hot pepper, Pilipili	Capsicum annum L.
3. Brinjal	Egg plant, Aubergine, Garden egg, Biringanya (swa).	Solanum melongena
4. Okra	Ochro, Okro, Lady's finger, Gumbo, Mbinda (swahili).	Habicus esculentus L.
5. Courgette	Marrow, Vegetable marrow, Summer Squash	Cucurbita pepo L.
6. Mangetout	snowpea, sugar pea.	Pisum sativum L. var macrocarpon ser
7. Baby corn	Sweet corn, Mealies corn.	Zea mays L. var saccharata sturt.
8. Runner bean	Scarlet Runner Bean	Phaseolus coccineus L.
9. Cherry Tomato		Lycopersicon esculentum Mill var cerasiforme.
10. Karela	Bitter Gourd Bitter cucumber, Bitter Melon	Momordica charantia L.
11. Guar	Cluster Bean	Cyamopsis tetragonoloba L. Taub.
12. Dudhi	Bottle Gourd, White flowered Gourd, Trumpet Gourd, Mongu (kikuyu), mumunya.	Legenaria siceraria (molina) standl.
13. Curry Leaves	Limdi	Murray koenigii
14. Papdi	Patri, Bbonavist Bean, Dolichos Bean, Njahi (kikuyu)	Dilicos lablab L.
15. Chora	Asparagus Bean, Vegetable Cowpea, Long Bean, Kunde.	Vifna sinensis (L) ex Hassk.
16. Tinda	Round Gourd,	Citrus vulgaris var Fistulosus.
17. Saragwa	Drumstick, Singo (swah).	Moringa oleifera lamk.
18. Valore	Hyacinth Bean, Mafutu (swa)	Labkab perpureus L.
19. Tindori	Ivy Gourd, small Gourd.	Coccinia cordifolia cogn.
20. Tuwer	Pigeon pea, Mbaazi (swa).	Cajanus cajan (L), mill sp.
21. Turia	Angled lofah, Ridge Gourd,	Luffa acutangula (L) Roxb
22. Patra	Taro, Cocoyam, Dasheen, Aarvi, Nduma (swa).	Colocasia anntiquorum.
23. Mooli	Radish	Rophamus sativus L.
24. Methi	Fenugreek	Trigonella foenumgraecum L.
25. Brussels Sprout		Brassica oleracea var Gemmifera.
26. Mushrooms		
27. Cassava Leaves		
28. Asparagus		
29. Padola (snake gourd)		

2.2 LOCAL MARKET

COMMON NAME	BIOLOGICAL NAME
Cabbage	Brassica oleracea var Capitata
Capsicum	Capsicum Annuum
Carrot	Daucus Carota
Cauliflower	Brssica oleracea var Botvytis
Chilli	Capsicum Frutescens
Courgette	Cucurbita var Meduliosa
Cucumber	Cucumis Sativus
French Bean	Phaseolus Vulgaris
Kale	Brassica Oleracea Convar
Acephala	
Okra	Hibiscus Esculantus
Onion	Allium Cepa
Peas	Pisum Sativum
Potato	Solanum Tuberosum
Radish	Radphanus Sativus Var
Longipannatus	
Spinach	Spinacia Olerea and Tetragonia
Expansa	
Tomato	Lycopersion Lycopersium
Water Melon	Citrulus Lanatus
Lettuce	Lactuca
Sativa	

2.3 FRUITS

Common name	Other names	Scientific Name
1. Mango	Maembe	Mangifera indica
2. Passion fruit		Passioflora endulis
3. Strawberry		Fragaria ananassa Dutch
4. Avocado		Persea americana
5. Tamarillo	Tree tomato	Cyphomandra betaceae
6. Pawpaw	Papaya	Carica papaya
7. Pineapple	Ananas	Ananas comosus
8. Banana	Apple banana, Cavendish types, Matoke	Musa spp
9. Lime		Citrus aurantifolia
10. Lemon		Citrus limmon
11. Sweet melon	Cantaloupe, Musk melon Honey dew melon.	Cucumis melo
12. Prickly Pear	Indian fig, Cactus pear.	Opuntia ficus-indica
13. Physalis	Cape gooseberry	Physalis Peruviana
14. Cherimoya		Annona cherimola
15. Horned melon	Kiwano, Jerry melon.	Cucumis metuliferus
16. Lychee		
17. Macadamia Nuts		Macadamia spp
18. Coconut	Nazi	Cocos Nacifera
19. Bixa		
20. Cashewnuts	Makanfu Mabibo,	Anacardiumm Occidentale

ANNEX 3

3.1 VEGETABLES AND HERBS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
French Beans	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~
Runner Beans	||	||	||	||	||	||	||	||	||	||	||	||
Chilli	#	#	#	#	#	#	#	#	#	#	#	#
Okra	**	**	**	**	**	**	**	**	**	**	**	**
Karela	#	#	#	#	#	#	#	#	#	#	#	#
Aubergine	**	**	**	**	**	**	**	**	**	**	**	**
Bobby Bean	**	**	**	**				**	**	**	**	**
Snow Pea	**	**	**	**	**	**	**	**	**	**	**	**
Asparagus	0	0	0	0	0	0	0	0	0	0	0	0
Valore	#	#	#	#	#	#	#	#	#	#	#	#
Dudhi	**	**	**	**	**	**	**	**	**	**	**	**
Baby Corn	#	#	#	#	#	#	#	#	#	#	#	#
Coriander	**	**	**	**				**	**	**	**	**
Celery	#	#	#	#	#	#	#	#	#	#	#	#
Chive	**	**	**	**	**	**	**	**	**	**	**	**
Fennel	#	#	#	#	#	#	#	#	#	#	#	#
Ginger	**	**	**	**	**	**	**	**	**	**	**	**
Garlic	#	#	#	#	#	#	#	#	#	#	#	#
Mint	**	**	**	**	**	**	**	**	**	**	**	**
Curry Leaves	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~	~~
Chamomile	||	||	||	||	||	||	||	||	||	||	||	||
Hibiscus	#	#	#	#	#	#	#	#	#	#	#	#
Parsley	**	**	**	**	**	**	**	**	**	**	**	**
Dill	#	#	#	#	#	#	#	#	#	#	#	#
Tarragon	**	**	**	**	**	**	**	**	**	**	**	**
Rosemary	**	**	**	**				**	**	**	**	**

3.2 FRUITS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Avocado			**	**	**	**	**	**	**			
Mango	0	0	0	0	0	0	0				0	0
Passion Fruit	#	#	#	#	#	#	#	#	#	#	#	#
Strawberry	**	**	**	**	**	**	**	**	**	**	**	**
Pineapple	#	#	#	#	#	#	#	#	#	#	#	#
Pawpaw	**	**	**	**					**	**	**	**
Melon (Sweet)	#	#	#	#	#	#	#	#	#	#	#	#
Lime	**	**	**	**	**	**	**	**	**	**	**	**
Banana	#	#	#	#	#	#	#	#	#	#	#	#
Tamarillo	**	**	**	**	**	**	**	**	**	**	**	**
African Melon	#	#	#	#	#	#	#	#	#	#	#	#
Macadamia Nut	**	**	**	**	**	**	**	**	**	**		

Low season

Not available

ANNEX 4

USEFUL CONTACTS

1. **Horticultural Crops Development Authority**
   P.O Box 42601 Nairobi Kenya
   Tel: 254/2-333150
   Fax: 254/2-228386
   E-mail: okado@swiftkenya.com

2. **Fresh Produce Exporters Association of Kenya (Flowers, Fruits & Vegetables)**
   Studio House, Karbarnet Road,
   P.O Box 40312 Nairobi Kenya
   Tel: 254/2-710977+8+711989+90+712102
   Fax: 254/2-729485
   E-mail: fpeak@form-net.com
   www.fpeak.org

3. **Kenya Flower Council**
   P.O.Box 24856, Nairobi, Kenya
   Tel/Fax: 254/2-883041
   Email: kfc@africaonline.co.ke
   www.kenyaflowers.co.ke

4. **Export Promotion Council**
   Anniversary Towers, 1st & 16th Floors,
   University Way
   P.O.Box 42047 Nairobi, Kenya
   Tel: 254/2-228534
   Fax: 254/2-218013/228539
   Email: chiefexe@epc.or.ke
   www.cbik.or.ke

5. **Pest Control Products Board (PCPB)**
   P.O.Box 14733 Nairobi Kenya
   Tel/Fax: 254/2-446115

6. **Kenya Plant Health Inspectorate (KEPHIS)**
   P.O.Box 49592 Nairobi Kenya
   Tel:254/2- 440087/441804
   Fax: 254/2-448940
   Email: kephis@nbnet.co.ke

7. **Kenya Agricultural Research Institute (KARI)**
   P.O.Box 14773 Nairobi, Kenya
   Tel: 254/2 - 444144

DETAILS OF AN EXPORTING LICENCE (HCDA LICENCE)
POLICY AND REGULATION

HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

……. ……..Kenya Subsiadiary Registration 1995 ……..

Form 1 (Para. 4 (1))

HORTICULTURAL CROPS DEVELOPMENT AUTHORITY
APPLICATION FOR EXPORT LICENCE

1. Full Name of Applicant ……..
2. Postal Address ……
3. Location of premises ……...
4. When was the exporting firm established ……...
5. Is the Applicant registered ……
6. Is the Applicant engaged in any other business ……..
7. If so give particulars :Name, Address ……
8. How long has the applicant been exporting fruits, vegetables and flowers? …….

   Name and Address of your Bankers……...……
9. Overseas markets supplied ……
10. Frequency of shipments ……
11. Please specify months when export will be made ……...
12. Produce returns: January…….. December ……..

I hereby declare that the particulars which I have given are true and accurate to the best of my knowledge and belief.

Date…….. ……

(APPLICANT)

NOTES

1. **Consideration of this application will be conditional on the applicant's information which must satify the Authority that the applicant is capable of complying with standards of export quality as laid down in the Agricultural Produce (Export) (Horticultural Produce Inspection) Rules (Cap. 319. Sub. Leg.) and operating such methods of quality control as the Authority may from time to time prescribe. The Authority may require the personal attendance of the applicant for interview before granting a licence.**
2. **The exporter shall produce such documentary evidence as requested to support the statements made above.**
3. **Should the Authority wish to restrict the quantity of certain crops to be exported, it shall be empowered to do so by giving the exporter written notice of such restrictions.**
4. **An exporter shall pay all dues to the Authority before his application can be considered.**
5. **A licence issued under this order shall be valid for three years from date of issue.**
6. **The licensee will be required to present annual returns of foreign exchange remitted into Kenya against invoices.**

Note:- Note elsewhere stated.

HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

FORM 2
(PARA. 4(20)

APPLICATION FOR EXPORT LICENCE FOR TH YEARS……

Name of Applicant …….

(a) List of Shareholders/Directors, their citizenship and percentage shareholding for each.

NAME **CITIZENSHIP** **% OF SHARES**

_____ _____ _____

(b) Location of offices including telephone, fax numbers.

Location_____ Tel: _____ Fax: _____

(c) Overseas markets to be supplied and terms of payment._____

Specify the prices by the customers_____

(d) Name and Address of your Bankers _____

(e) Frequency of shipments and estimates requirements for cargo capacity for the period of export.

_____

(f) Types and quantity of produce intended for export _____

(g) Main sources of supply for produce and whether from small holders or large scale farms.

_____

(h) Arrangements made in order to meet the quality specifications for the produce in accordance with agricultural produce (Grading of fruits and Vegetable for Export) Rules (Cap 319, Sub Leg.)

_____

HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

(i) Price contracts with farmers for the various types of produce

_____

(j) All agreements entered into with farmers are to be attached to the application.

_____

FOR OFFICIAL USE ONLY

_____

_____ _____

Approved/Not Approved Chairman/Marketing Committee

Table V

EXPORT DESTINATIONS 1995 – 1999

COMMODITY	1995	1996	1997	1998	1999	1999 Ranking
United Kingdom	29.5	27.0	31.0	31.8	33.6	1
Netherlands	35.6	33.0	38.0	31.0	30.9	2
France	16.8	12.0	13.0	15.2	15.4	3
Germany	8.8	7.0	7.0	6.5	4.6	4
Switzerland	-	7.0	2.0	1.1	2.5	5
Belgium	-	3.0	1.7	2.3	1.9	6
S. Arabia	0.6	1.0	1.0	0.7	0.7	7
Sweden	-	0.3	0.7	0.4	0.7	7
S. Africa	-	1.0	1.4	4.3	0.6	8
Italy	-	0.4	0.4	0.4	0.3	9
Djibouti	-	0.1	0.1	-	-	-
Others	8.6	8.3	3.8	6.4	8.8	-
Total	**100.0**	**100.0**	**100.0**	**100.0**	100.0	-

VEGETABLES

TABLE V1

MAIN TYPES EXPORT OF VEGETABLES (VOLUMES) 1995 - 1999

BEANS	1995	1996	1997	1998	1999	1999 % Shares
Beans Fine	9,503	11,722	11,569	10,829	15,041	
Beans Extra Fine	3,769	3,052	1,607	2,332	2,761	
Beans Runner	1,819	2,179	1,519	2,215	2,952	
Beans Prepacks	886	867	565	695	627	
Beans Bobby	686	687	459	352	371	
Beans Frozen	447	492	221	14	500	
Beans Top Tail	89	104	119	272	287	
Beans Canned	-	-	-	7,251	8,143	
Sub – Total	17,199	19,103	16,509	23,924	30,682	66.15
Chillies	814	1,098	978	555	527	
Chillies Long	472	358	175	243	219	
Chillies Short	161	198	205	54	144	
Chillies Thin	79	124	232	497	384	
Capsicums	43	12	43	23	19	
Chillies Fresno	11	101	15	9	106	
Sub – Total	1,580	1,891	1,648	1,381	1,399	3.01
Peas Snow	2,074	3,000	3,707	2,637	2,357	
Peas Snap	556	904	571	725	1,237	
Sub-Total	2,630	3,904	4,278	3,362	3,594	7.75
Okra	1,898	2,048	2,648	2,156	2,758	
Karela	1,384	1,337	1,489	1,568	1,786	
Aubergines	786	896	921	775	588	
Dudhi	422	403	531	191	228	
Valore	319	427	288	228	248	
Asparagus	29	15	8	5	5	
Courgettes	15	19	16	13	45	
Sub-total	4,853	5,145	5,901	4,936	5,658	12.20
Others	2,256	2,699	2,996	3,160	5,044	10.89
Grand Total	28,518	32,742	30,882	36,800	46,377	100.00

SOURCE: HORTICULTURAL CROPS DEVELOPMENT AUTHORITY

ANNEX 5 A LIST OF ABBREVIATIONS

1.	ABNM	-	ABN
2.	AFC	-	Agricultural Finance Corporation
3.	AIS	-	Agricultural Input Stockist
4.	BBK	-	Barclays Bank of Kenya
5.	CBK	-	Central Bank of Kenya
6.	CDC	-	Commercial Development Corporation
7.	COLEACP	-	Committee de Liaison Europe - Afrique - Caraibes
8.	EAB	-	East African Development Bank
9.	EIB	-	European Investment Bank
10.	EPC	-	Export Promotion Council
11.	EU	-	European Union
12.	FPEAK	-	Fresh Produce Exporters Association of Kenya
13.	GAP	-	Good Agricultural Practice
14.	GDB	-	German Development Bank
15.	GDP	-	Gross Domestic Product
16.	HCDA	-	Horticultural Crops Development Authority
17.	ICDC	-	Industrial and Commercial Development Corporation
18.	IDB	-	Industrial Development Bank
19.	IFC	-	International Finance Corporation
20.	KAA	-	Kenya Airports Authority
21.	KARI	-	Kenya Agricultural Research Institute
22.	KBS	-	Kenya Bureau of Standards
23.	KCB	-	Kenya Commercial Bank
24.	KEPC	-	Kenya Export Promotion Council
25.	KEPHIS	-	Kenya Plant Health Inspectorate Services
26.	KFC	-	Kenya Flower Council
27.	KIRDI	-	Kenya Industrial Research and Development Institute
28.	KRC	-	Kenya Railways Corporation
29.	MOALD	-	Ministry of Agriculture, Livestock and Marketing
30.	MT	-	Metric Tonnes
31.	MRLs	-	Maximum Residue Limits
32.	NBK	-	National Bank of Kenya
33.	NGO	-	Non Governmental Organization
34.	PCPB	-	Pest Control Products Board
35.	PHI	-	Pre-Harvest Intervals
36.	SB	-	Stanbink Bank
37.	SCB	-	Standard Chartered Bank
38.	UPOV	-	International Union of the Protection of New Varieties and plants
39.	VAT	-	Value Added Tax