Ethiopian-Netherlands Horticulture Partnership

DRAFT-2

Mission Report

Identification of opportunities and setting agenda of activities in the Ethiopian Fruits and Vegetables Sector

February 10-21, 2007

Rolien Wiersinga (LEI)
André de Jager (LEI)

Contents

1. Introduction

Background

Fruits and Vegetables (F&V) is not a new sector in Ethiopia as the production of these crops has been undertaken for decades. The sector comprises large state farms supplying fruits and vegetables to the local market and for exports. There are few private companies involved in the production of vegetables mainly for the European market. In addition, there are numerous small producers growing a small range of vegetables for the local and regional export market. Apart from tropical fruits and few selected vegetables like onions, cabbage and tomatoes, local demand for horticultural produce is minimal. As a result, the horticultural exports compete only in few products (i.e. tropical fruits, tomatoes, onions and cabbage) with domestic supply. On the other hand, there is limited domestic market demand for produce that does not meet the high export quality standards. In East African countries like Kenya, Tanzania and Uganda, the domestic vegetable market is much larger which serves as a development base for vegetable exports.

With regard to F&V three major supply channels can be distinguished:

- The domestic wholesale channel;
- F&V produced at two large state farms or by smallholders on irrigated plots for the markets in the Middle East and neighbouring countries, exported by truck, train and/or sea via Djibouti;
- F&V produced at two large state farms or by a few private companies on irrigated land for the European market and exported by air.

The export volume and value of fruits has always been substantially lower than vegetables and it is directed mainly at Djibouti and the Middle East while exports of fruits to Europe are negligible. The main fruits produced and exported are bananas, citrus, grapes, mangoes, papaya and avocadoes. The main export markets for these Ethiopian fruits are Djibouti, Saudi Arabia, Yemen and Sudan. The majority of citrus production is still largely confined to state farms, but the productivity of their orchards is on the decline.

The Ethiopian government (MoARD), sector organizations (EPHEA) and donors (USAID, SNV) have identified potentials for the further development of fruits and vegetable sector in Ethiopia both for the domestic and export market. Also in the Ethiopian-Netherlands Horticultural Partnership Programme, technical support to the development of the fruits and vegetable sector has been prioritized. A number of actors and donors have already started activities in the area of technical production assistance, post-harvest handling and compliance to international standards.

Objectives of identification mission

- To get acquainted with the Ethiopian fruits and vegetable sector
- To get acquainted with the current and potential fruit and vegetable markets, both domestic and export oriented
- To determine Unique Selling Point of Ethiopian vegetable and fruit production and marketing
- To make an overview of existing initiatives and its results by various actors
- To determine potential product-market-combinations for exports of fresh and processed fruits and vegetables from Ethiopia
- To formulate a plan of activities for Dutch support and identify possible linkages with existing initiatives

Approach

To reach the objectives of the mission the following approach was adopted:

- Literature review and secondary data collection;
- Interviews with key stakeholders in Ethiopia;
- Visits to F&V production areas;
- Writing report to
    - Recommend plan of activities for Dutch support
    - Use as input for a stakeholders consultation meeting in March

This report firstly describes the current situation in production and marketing of the fruit and vegetable sector in Ethiopia. International (including regional) markets are more elaborated since the mission gave priority to exploring options for development of the export of fruits and vegetables from Ethiopia. Thereafter a list of recent initiatives in the sector are presented, followed by the main constraints in further development of the fruit and vegetable sector in Ethiopia. Finally the potentials for further development are described resulting in a recommended agenda for activities in the framework of the Ethiopian-Netherlands Horticultural Partnership Programme.

2. Ethiopian Fruit and Vegetable Sector

2.1 Production

The agricultural sector accounts for 55% to the Gross Domestic Product and provides 85% of employment. Ethiopia produces mainly a variety of cereals, pulses, oilseeds, and coffee. Grains are the most important field crops and the main element in the diet of most Ethiopians followed by pulses. Vegetable and fruit production and consumption is relatively limited. Small-scale farmers, who account for 90% of the agricultural output, cultivate an estimated 96% of total cropped land (Greenhalgh and Havis, 2005). The number of small-scale producers involved in horticulture is estimated at 5.7 million farmers (MoARD, 2007). Few smallholder farmers are engaged in out-growers arrangements. After the establishment of farmers association unions, like Mekibatu and Alemaya, in the rift valley and eastern part of the country respectively, approximately 600 farmers are supplying their products (tomato, onion, potatoes) to the unions under contractual agreements. The union supplies the out-growers with inputs like seed and fertilizer and sometimes pesticides (Woldsadiq,2007).

During Emperor Haile selassie's rule, there were already fruit and vegetable growers, mainly producing for the domestic market but for exports as well. The problem at the time was that investments were mostly controlled by either the royal family or foreigners close to the royal family. During the Derg regime, the few major production farms were nationalized and subsidized export of fruits and vegetables was developed mainly to earn foreign currency.

The past five years have seen a major change in Government policies towards the horticultural sector, reflecting efforts to redirect the economy away from centralized planning to a more liberalized economy. The Government increasingly considers the private sector as the engine of economic growth and the catalyst for employment creation and export expansion (Greenhalgh and Havis, 2005). As a result private companies were allowed and facilitated with an array of incentives to engage in the sector (HortiNews, 2007).

In the fruits and vegetable sector, exports are still dominated by the two state farm operations, namely Upper Awash Agro-Industry Enterprise (UAAIE) and Horticulture Development Enterprise (HDE), both established in 1979/80 and both currently in the process of being privatized. Alongside the state companies a number of private sector companies and cooperatives are involved in relatively small-scale production, processing and export of vegetable products.

Due to Ethiopia's good agro-climatic circumstances it is able to produce fruits and vegetables throughout the year. Both the low- and highland areas offer good opportunities. Table 1 shows the cultivated area and production of fruit and vegetables. Major vegetables are tomatoes, onions, potatoes, cabbage and green peppers, mainly produced by smallholder farmers and the state farms. Fruit production in terms of

acreage and volume but also in terms of value has always been substantially lower than vegetables (Kubsa et al., 2006). Within the group of fruits, banana is the most common fruit being produced. In the period 2000 – 2004 total production of bean, cabbage, garlic and onion show a growing trend (Table 2).

Table 1: Estimate of Area and Production of Fruit and Vegetables in 2004/05 and 2005/06 (in Meher Season)

Crop	Area (1000 ha)			Production (1000 ton)		
	2004/05	2005/06	% Change	2004/05	2005/06	% change
Vegetables						
Green beans						
Lettuce	0.2	0.3	14	0	0	
Head cabbage	2.1	1.7	-22	15	13	-15
Eth. Cabbage	27.1	23.0	-15	262	181	-31
Tomatoes	2.9	4.8	64	36	35	-2
Green peppers	4.8	6.3	31	4.5	40	-9
Red peppers	57.0	81.5	43	72	179	147
Beetroot	1.5	1.5	1	16	16	-1
Carrot	1.7	1.1	-38	18	6.9	-62
Onion	18.0	16.6	-8	229	176	-23
Potato	51.7	61.8	20	509	450	-12
Garlic	13.7	12.5	-9	196	107	-46
Fruits						
Avocado	3.2	3.6	11	17	28	69
Bananas	28.7	28.1	-2	182	211	16
Guavas	1.1	0.8	-24	1.9	1.4	22
Lemons	0.9	0.6	-33	1.0	4.2	316
Mangoes	5.8	5.4	-7	30	55	81
Oranges	3.1	2.8	-11	17	51	192
Papayas	2.7	2.9	7	15	71	371
Pineapple[1]	0.13			4.3		

Source: Central Statistics Agency, 2006

[1] Data refer to 2000/01 from Fresh Fruits and Vegetables Production and Marketing Study, Ethiopian Export Promotion Agency, Sisay Habte, April 2004

Leek production Alemya | Green beans with drip irrigation Lake Koka | Yellow courgette Debre Zeit

The supply of vegetables for the European market comprises predominantly green "bobby" beans (see also previous section). The export to Europe used to be somewhat more diversified, including peas, mangetouts and asparagus. However, the share of these latter crops has declined over the past years, whereas the export of green beans has been growing again. The supply is limited to a relatively short export season from December through April or May. Europe does not produce fresh beans in winter season and production in countries like Egypt and Morocco in January and February can be unreliable.

Compared to fresh beans from some competing countries, the current export supply chain of green beans lacks value addition. The produce is usually exported in palletized open boxes, either for direct supply to supermarket chains or for repacking and sale by international traders. Due to the fact that the crop is perishable and a route by sea takes far too long, all green beans are exported by air and thus mainly airlifted from Addis Ababa by Ethiopian Airlines Cargo which flies into Brussels via Rome. The main destinations of the green beans are The Netherlands and Italy. The beans for The Netherlands are cleared in Brussels and then transported by truck to The Netherlands where they are (partly repacked into small size packets depending on the client's requirements) and distributed throughout The Netherlands, but also re-exported to Germany and France. It is estimated that the state farms cultivate some 650 ha (UAAIE) and 200 ha (HDE) of green beans with expected export volumes of around 750 to 1000 tons. The two private exporters cultivate around 225 ha of green beans each and have outgrowing arrangements with a limited number of farmers in their vicinity.

The production of green beans relies on surface or furrow irrigation, which is a cheap but very labour intensive and water inefficient method. Moreover, it requires machinery for proper levelling of the fields. A joint venture near Koka is the first to make the considerable investment in drip irrigation, which has the following advantages compared to surface irrigation:

- Far higher water efficiency;
- Reduction of water logging if fields are not properly levelled;
- Reduction of spread of water borne diseases like Brown Rot and Rust;
- Better germination as less seeds are "drowned" in the irrigation water.

The experiences and economic feasibility still need to be assessed.

Whereas the state farms used to grow and export a wide variety of crops including asparagus, peas, leeks, paprika, chilli peppers and tomatoes, the present trend in production for export to the EU market is away from a wide range towards exports of green "bobby" beans in bulk. The Horticulture Development Enterprise has reduced its produce range significantly over the past years and big chunks of its land near Ziway have been leased out for floriculture. Also the UAAIE has been for sale for several years without a buyer coming forward. On the other hand, some experiments and trials are undertaken (by private companies) of production of peas, mangetouts, cherry tomatoes and asparagus for export to the EU market.

The main fruits produced and exported are bananas, citrus, grapefruit, mangoes, papaya and avocadoes. The main export markets for these Ethiopian fruits are Djibouti, Saudi Arabia, Yemen and Sudan. The majority of citrus production is still largely confined to state farms, but the productivity of their orchards is on the decline. The production of mangoes is to a large extent scattered and unprofessional; the varieties and quality tend to be not as good in quality as those produce in competing countries and are usually unfit for further processing. In the Chencha highland apples have been grown for decades by small farmers. Apple production is expected to go up as the State of Oromia ordered 70,000 apple tree seedlings from Spain. Pineapple production is also scattered and has been unstable over the past years, which caused a pineapple drying plant near Nazareth to function below its production capacity for years in a row.

In addition to the export of relatively low value fruits, nowadays there are a number of trials undertaken to produce more high value crops for export and to access new or more attractive fruits markets (i.e. grapes, avocado, passion fruit). As mentioned before also, a foreign strawberry grower ventured into the drip irrigated production of this fruit in Ethiopia mainly for the fresh export to the EU market.

In its agronomic practices, Ethiopia's F&V export sector lags behind most sub-Saharan Africa exporting countries. This partly due to the fact that the state farms and few private entrepreneurs lack capital to invest in new technology and to pay for external technical and commercial expertise. For the state farms also other factors play a role such as inappropriate management structure, limited control mechanisms etc. Overall limited formal and organized research takes place focused on exported horticultural crops.

Table 2: Fruit and Vegetable production trend

Fruit and vegetables	Quantity produced (1000 tonnes)				
	2000	2001	2002	2003	2004
Avocados	78	79	80	81	82
Bananas	82	82	82	84	84
Beans (incl. string beans), green	4	3	3	3	3
Cabbages and other brassica's	120	130	150	152	152
Carrots and turnips	1	1	1	1	1
Cauliflowers and broccoli	0	0	0	0	0
Chick peas	165	176	187	114	136
Citrus fruit, nec	2	2	2	2	2
Cucumbers and gherkins	1	1	1	1	1
Other Fruits	137	143	145	160	160
Garlic	40	50	70	71	71
Grapes	6	7	7	7	7
Guavas, mangoes and mangosteens	153	157	160	163	135
Leeks and other alliaceous vegetables	1	1	2	2	2
Other Leguminous vegetables	2	2	3	3	3
Lemons and limes	7	7	7	7	7
Lentils	59	65	38	36	35
Lettuce and chicory	6	6	6	6	6
Onions (incl. shallots), green and ripe	93	120	140	142	162
Oranges	14	15	15	16	16
Papayas	197	223	226	231	230
Peas, green	1	1	1	1	1
Tomatoes	54	55	55	60	55
Other Vegetables (incl. Okra)	420	420	420	430	430

FAOSTAT | © FAO Statistics Division 2007 | 02 February 2007

2.2 Cultivation zones

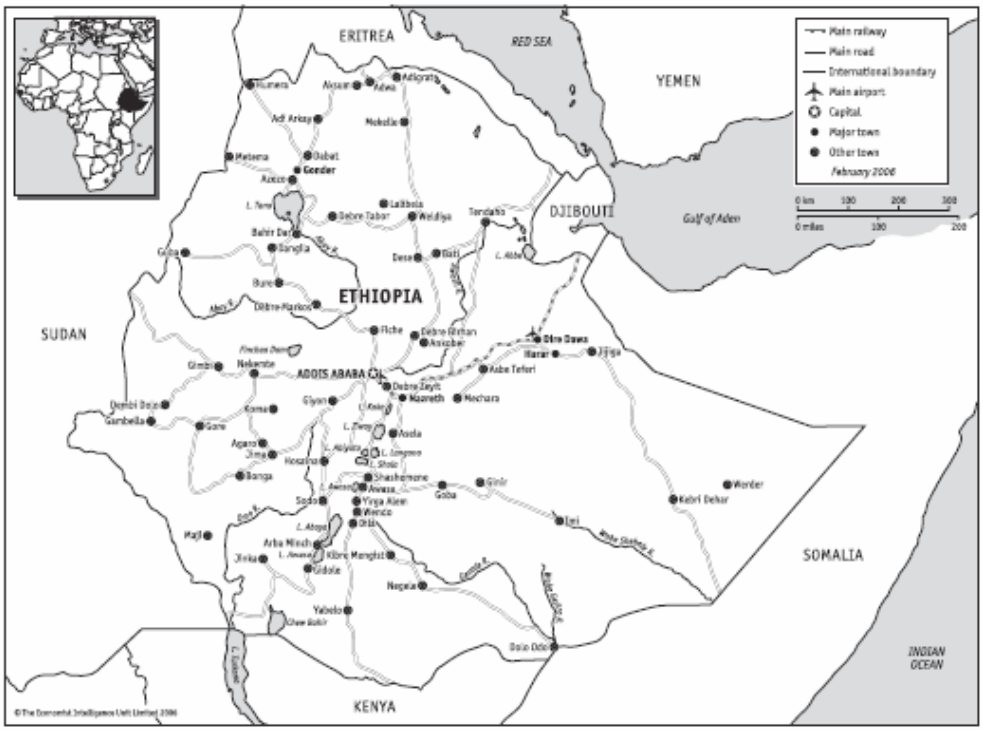
Fruits and vegetables are grown in different parts of the country both in commercial quantity as well as small volumes by private farmers and other operators engaged in the business. Small-scale production is concentrated in Harerghe (eastern high land parts) and the central high lands, whilst large commercialized cultivations are widely spread in the low land zones, mainly following the Awash and Gibe/Omo rivers.

According to a recent study made by Ethiopian Export Promotion Agency (Sisay Habte, April 2004), the major fruits and vegetables growing areas of the country are summarized as follows.

- East Hararghe (eastern part of the country, i.e, Alemaya and Kombolcha districts in Oromia Regional State), with vegetables dominating,
- East Shewa (Central Ethiopia in Oromia Regional State) produces both fruits and vegetables including tomato, green beans, orange, mandarin, papaya, etc,

- West Shewa (central Ethiopia in Oromia Regional State) which is good for producing tomato and mango fruits, among others.
- Arsi (central Ethiopia in Oromia Regional State), particularly in the Awash River basin which is known for its various types of fruits and vegetables,
- Gamo Goffa (Southern Nations, Nationalities and Peoples Regional State), particularly Woliata and Sidama zones, are good producers of banana, avocado, pineapple, papaya and other types of fruits and vegetables in various districts.
- Dire Dawa and Harari (eastern Ethiopia) are also well known production and supply areas of both fruits and vegetables.
- Tigary and Amhara regions

Figure 1: Map of Ethiopia



Source: Cehmeda et al, 2005

2.3 Processing

Processing plays an important role in the conservation and effective utilization of fruits and vegetables. It converts perishable fresh products to more durable processed products in cases of sluggish markets or when there are profit-generating demands for processed products. In general processing can add-value, contribute to generating rural employment and is an additional source of foreign exchange earnings.

In Ethiopia, the number of fruits and vegetables processing industries is limited. Currently, there are only 5 fruits and vegetables processing plants in the country (Table 3). These plants

presently process a limited variety of products: tomato paste, orange marmalade, vegetable soup, frozen vegetables and wine. Currently most processed products are geared to domestic markets. (EIA, 2006)

Table 3: Capacity of Fruits and Vegetables Processing Plants in Ethiopia.

Name of Processing Plant	Location	Ownership	Major Products	Plant Production Capacity
Melge Wendo Food Processing Factory	Melge Wendo/Southern Nations, Nationalities and Peoples National Regional State	Private (foreign)	- Tomato paste - Tomato paste - vegetable soup	- 4250 kg/day - 3280 kg/day - 9600 kg/day
Gonder Food Processing Factory	Gonder/Amhara National Regional state	Private (foreign)	- Tomato paste	- 1065 kg/day
Merti Processing Factory	Merti/Oromia National Regional State	State-owned	- Tomato paste - Orange marmalade	
Awash Winery	Addis Ababa	State-owned	- wine	- 10.9 million liters/ yr
Green Star Food Company(Ethiopian Branch)	Debre Zeit/Oromia	Private (foreign)	- canned vegetable	9,990 ton/yr

Source: 1. ELIFORA 2. Seifu Gebremariam (EARO), Status of Commercial Fruit Production in Ethiopia

Merti is UAAIE's fruits and vegetables processing plant. The Plant has been operational since 1983 and is currently producing a range of products such as: tomato paste, tomato juice and tomato ketchup, orange marmalade, juice and squash and guava nectar (Table 4). All products are packed in consumer-size units (mostly tins). The sales fluctuate strongly in between and over the years. The turnover in fiscal year 2003/2004 stood at US$ 2.2 million, almost half of the US$ 4 million which was recorded one year earlier, while in 2001/2002 production output and sales were at about same level as in 2003/2004 (Cehmeda et al, 2005). Tomato paste is by far the most important product. Orange marmalade is the most important product among the processed fruits.

Table 4: Production of processed fruits and vegetables by Merti Processing Plant (2002/2003)

Product type	2002/2003		2003/2004	
	Volume (ton)	Value US$	Volume (ton)	Value US$
Fruit products				
Orange marmalade, 1000 g	387	339,660	367	310,362
Orange marmalade, 520 g	10	12,920	28	35,297
Orange marmalade, 450 g	26	32,155	-	-
Orange Squash, 500 ml	53	70,578	0.9	1,247
Guava nectar, 400 ml	-	-	26	22,160
Guava nectar, 500 ml	41	29,901	0.7	511
Subtotal	**517**	**485,215**	**423**	**369,578**
Tomato products				
Tomato paste, 850 g	2516	2,945,568	1070	1,208,857
Tomato paste, 410 g	360	466,505	379	483,764
Tomato paste, 70 g	21	3,024	43	5,676
Tomato juice, 420 g	2,283	182,614	1,632	133,089
Tomato ketchup, 340 ml	17	12,263	7	1,099
Subtotal	**31,097**	**3,610,074**	**16,172**	**1,832,485**
Total	**36,251**	**4,095,289**	**20,397**	**2,202,064**

Source: UAAIE (March 2003)

The Merti Fruits and Vegetable Processing plant has a total processing capacity that could reach 5,000 tons per year. However, it has on average been utilizing only about 50% of this capacity. At the highest capacity level utilized by the plant so far it processed 48,000 quintals of finished products (Cehmeda et al, 2005). Merti received HACCP certification two months ago. The factory sources produce mostly from its own farm. In the future it wants to increase tomato processing with more than 400% by also sourcing tomatoes from out-growers covering 2000 ha. A business plan for the construction of a new factory has been formulated, but no start has been made yet with the implementation.

Greenstar Factory Product

MERTI factory product

Greenstar processing line

Green Star is a privately foreign owned enterprise focusing on food processing operations. It is located in Debri Zeit (45 km East of Addis Ababa) and consists of a new Italian designed can-making and food processing line. The company started processing in Ethiopia due to its favourable agro-climate and cheap labour. Know-how and finance were however lacking. Production of the firm is planned at some 10 thousand tons of canned food per year for the export market. The processing plant started to operate in July 2006, now the 13th container with canned chick peas and kidney beans is being shipped. The processing line has been designed for a wider range of produce like lentils, chick peas, carrot, French beans, tomatoes and mixed vegetables. Produce is sourced from the local market. The factory is working at low capacity due to lack of sufficient and regular supply of F&V. Currently the factory even sources produce from other countries to be processed. The company plans to set up their own farm as well. The factory is in the process of HACPP certification.

2.4 F&V Consumption

Fruit and vegetables are not common items in the Ethiopian diet. In particular the fruit consumption, compared to other African countries, is low (Table 5). Only one of every 5 Ethiopians eats fruits regularly. On average the Ethiopian diet consists of 1.3 kg of fruit per person per year while that ranges from 11.9 to 39 kg in the other African countries. Although the price per kg of fruit in Ethiopia is one of the highest in the researched African countries, the percentage of the food budget spent on fruits is the lowest. In contrary to fruits, vegetables are more common in the Ethiopian diet. However the quantity consumed per person is still one of the lowest compared to the other countries even though price per kilogram in Ethiopia is the lowest of all countries.

Common available vegetables include onions, peppers, squash, and a cabbage similar to kale.

Table 5: Summary of fruit and vegetable consumption patterns

	Ethiopia	Burundi	Malawi	Mozambique	Tanzania	Rwanda	Kenya	Uganda	Ghana	Guinea
Fruit consumption										
% consuming	20	50	45	23	72	57	46	22	62	75
Quantity (kg/person/yr)	1.3	15.8	11.9	13.4	22.2	15.3	25.8	23.6	25.8	39
Value (US$/person/yr)	0.4	3.1	2.8	1.6	3.4	4.6	5.9	2	8.3	8.2
Price (US$/kg)	0.31	0.2	0.24	0.12	0.15	0.3	0.23	0.08	0.32	0.21
% of food budget	0.4	1.8	1.9	1.3	2.5	4.2	1.9	1.3	2.1	3.8
% of total budget	0.3	1.3	1.2	0.8	1.7	3.4	1.3	0.7	1.3	1.9
Vegetable consumption										
% consuming	93	72	93	93	98	91	90	88	90	95
Quantity (kg/person/yr)	25.4	20.8	45.8	61	38.6	47.5	88.2	53.8	51	31.2
Value (US$/person/yr)	3.3	9.5	19.9	16.6	10.3	10.7	21.3	9.3	29.1	15.1
Price (US$/kg)	0.13	0.46	0.43	0.27	0.27	0.23	0.25	0.17	0.57	0.48
% of food budget	4.1	4.1	12.2	13.9	9.4	11.6	7.9	8.1	9.2	6.9
% of total budget	2.5	2.9	8.6	9.3	6.7	9.3	5.6	4.6	5.7	3.6

Source: Workafes, 2007

3. Marketing

3.1 General

The Ethiopian size of the domestic market for fruit and vegetables is limited as is also clear from the very low consumption data. Export of fruit and vegetables can be categorised into three types. First, export of relatively high value perishable produce to Europe. Second, the export of low value produce cultivated predominantly in Eastern Ethiopia around Dire Dawa, to regional markets (mostly Djibouti) and, third, some processed and fresh produce to Middle East countries (Greenhalgh and Havis, 2005).

The export of fresh fruit and vegetables began to develop in the early 1970s. However, private sector efforts to export to Europe and Middle Eastern countries were thwarted by the Derg regime, and exports fell drastically after the 1974 revolution. Under the centrally-planned economy of the Derg regime, exports were dominated by state-owned farms. In the late 1980s exports began to grow again, but failed to achieve levels reached prior to 1974. Since the collapse of the Derg regime in 1991, private sector operations have slowly entered the market. However, horticultural exports are still dominated by the state farms established in 1979/80. Prior to the revolution, urbanization increased the demand for fruit, leading to the establishment of citrus orchards in areas with access to irrigation in Shewa, Arsi, Harerge, and Eritrea. The Mengistu regime encouraged fruit and vegetable production. Fresh fruits, including citrus and bananas, as well as fresh and frozen vegetables, became important export items, but their profitability was marginal. The Ethiopian Fruit and Vegetable Marketing Enterprise (EFVME), which handled about 75 percent of Ethiopia's exports of fruits and vegetables in l984-85, had to receive government subsidies because of losses (F&V Ethiopia, 1991).

Etfruit was the first state company to market to countries of the E.U. The Ethiopian Fruit and Vegetables Marketing Enterprise (Etfruit) was established in 1980 under the former Ministry of State Farms Development, the Horticulture Development Corporation with the aim of serving as a marketing organ for all state owned horticultural farms. With the decentralization and liberalization of the country's economic policy, Etfruit was reorganized in 1993. The scope of its services has since then been extended to include private horticultural producers striving to enter export market. Etfruit also renders other services such as market information, refrigerated semi trailer truck transport rent, and supply of quality imported seeds and various export packing materials. Etfruit has developed its distribution centres and branches and is today present in 10 major towns of the country. In the nation's capital, Addis Ababa, Etfruit has three main branches, twenty-one retail handling shops and thirty mobile shops strategically placed to render efficient service. The types of fruits delivered to domestic markets are oranges, mandarin, grapefruit, lemon, lime, mango, avocado, guava, banana, processed horticulture products such as tomato juice, orange marmalade, orange squash, and grapefruit squash and guava nectar. The major suppliers of fresh fruits and processed products are the Upper Awash Agro-Industry Enterprise the Horticulture Development Enterprise and Metehara Sugar Factory (Ethiopian Fruit & Vegetable Marketing Enterprise website, as on Jan 24, 2007)

However, the main producer of horticultural products, Upper Awash Agro Industrial Development Enterprise (state farm), has now started exporting its products directly to

these same E.U. markets, bypassing Etfruit entirely. The role of Etfruit in marketing abroad is now limited to refrigerated trucks rentals. At present, generally there appears to be a declining interest of state enterprises in the sub-sector, and increasing interest of private investors and cooperatives (Greenhalgh and Havis, 2005).

Ethiopia lost access to the port at Assab owing to the war with Eritrea (1998- 2000) and was obliged to shift the bulk of its international trade to Djibouti, which now handles about 98% of Ethiopia's traffic. This makes the relationship with Djibouti a critically important one. Bilateral relations remain solid, and they continue to improve following the resolution of disagreements over transit regulations and port fees in 2004. (EIU, 2006).

The horticulture sector's contribution to Ethiopia's export earnings is still relatively small but increasing rapidly (Table 6). However, it should be noted that the fast growth of the floriculture sector in the period 2001-2007 has considerably increased the contribution of horticulture in the Ethiopian export. Current export consist of mainly green beans (Table 7) and flowers (roses) exported to northern Europe and a number of vegetables as potatoes, tomatoes and onions to Djibouti.

Table 6: Ethiopia's Horticulture Export Share

	Fruits and Vegetables		**Flowers**		**Tot. horticulture export**		**Total national agriculture export**		**% share of horti-culture**	
	Prod.	Value	Prod.	Value	Prod.	Value	Prod.	Value		
1994	19.3	121	0.3	37	19.6	158	389	20,624	5	0.8
1995	15.7	75	0.2	25	15.9	101	276	26,022	5.8	0.4
1996	20.8	264	0.1	14	20.9	278	346	26,509	6	1
1997	23.3	513	0.0	10	23.4	523	374	39,384	6.3	1.3
1998	17.7	319	0.1	17	17.8	336	242	39,660	7.4	0.8
1999	13.3	257	0.1	9	13.5	266	243	3,496	5.5	7.6
2000	12.0	262	0.2	31	12.2	293	323	39,590	3.8	0.7
2001	27.8	715	0.0	13	27.8	728	335	36,590	8.3	2
Total	1,500	2,526	10	157	1,510	2,683	25,282	231,875	6	1.2

Production in 1000 ton en Value in 1000 bir
Source: EEPA

As mentioned earlier, beans are predominantly exported to Europe, while the other vegetables are mostly exported to Djibouti. The fruits are all exported to Djibouti as well, with some avocados going to India. The group of vegetables which are not futher specified is extremely large. These products are exported to both Djibouti and Somali and probably consist of the mentioned vegetables as well.

Table 7: Trend in Ethiopian export of fruits and vegetables

Fruit and Vegetables	Ethiopian export of fruits and vegetables (1000 US$)						
	1997	1998	1999	2000	2001	2002	2003
Potatoes	**15**	**463**	**1,002**	**770**	**1,462**	**967**	**1,242**
Legumes	**15,921**	**10,279**	**13,355**	**8,879**	**20,758**	**30,522**	**18,521**
- peas				23	18	6	17
- chickpeas	17	31	14	59	9,298	14,672	777
- beans	15,524	10,201	13,246	8,671	10,890	14,119	12,045
- lentils	39	14	18	69	324	559	329
- horse bean	317	16	33	58	65	1,054	5,297
- other legumes					163	112	56
Tomatoes	**80**	**251**	**581**	**420**	**847**	**792**	**941**
Other vegetables	**3,206**	**2,111**	**2,371**	**2,316**	**2,614**	**3,449**	**2,993**
- onions, shallots	5	306	587	492	783	881	967
- garlic, leek	10	78	100	67	259	188	236
- cabbage					94	78	85
- lettuce					163	129	179
- edible roots					191	171	214
- cucumbers		34	40	34	47	66	55
- legumes		28	1,240	1,394	1,075	1,936	1,257
- other vegetables	3,184	1,664	404	329	2		
Vegetables frozen	**2,780**	**602**		**1**	**1,802**	**2,820**	**1,229**
-sweet corn frozen						1	
- other vegetables frozen	2,780	602		1	1,802	2,819	1,229
Fruit,nuts excl.oil nuts	**1,323**	**1,109**	**1,237**	**1,072**	**1,429**	**2,519**	**1,615**
- oranges	4	290	641	408	755	609	715
- mandarins	2	61	69	18	63	865	42
- lemons,limes		25	61	418	105	71	87
- bananas	1	125	155	100	191	167	329
- avocado,guava,mango	16	39	263	102	220	675	286
Vegetable not else specified	**43,941**	**52,954**	**67,976**	**72,522**	**57,256**	**45,881**	**116,554**

Data source: ITC/WTO data

Djibouti has for a long time been the main export country for Ethiopian vegetables (Table 8). Only in 2003 they have suddenly been overtaken by Sudan. Europe is the third most important export destination importing 4.5 million US$ worth of vegetables while Sudan imports 6.1 and Djibouti 5.7 million US$ in 2003.

Table 8: Trading countries for Ethiopian vegetables

Country of Destination	Ethiopian export of vegetables (1000 US$)						
	1997	1998	1999	2000	2001	2002	2003
World	22,028	13,751	17,386	12,722	28,101	38,872	25,358
Belgium/Luxembourg	255	125	600	109	502	615	660
Djibouti	3,636	3,036	3,211	2,588	4,723	4,088	5,765
Germany	3,046	1,897	1,937	1,743	1,716	2,115	722
Italy	457	288	679	672	619	939	511
Morocco	60		285	1,240	1,548	1,191	738
Netherlands	2,893	1,375	2,519	1,922	2,717	1,726	1,831
Pakistan					772	13,575	786
India					5,961	2,263	2,151
Sudan				104	280	1,999	6,123
United Arab Emirates		3		164	1,548	966	106
United Kingdom			155	13	797	1,127	837
Yemen	1,931	1,514	2,480	2,158	1,940	2,048	2,960

Data source: ITC/WTO data

Table 9: Trading countries for Ethiopian fruits

Country of destination	Ethiopian export of fruits (1000 US$)						
	1997	1998	1999	2000	2001	2002	2003
World	1,323	1,109	1,237	1,072	1,429	2,519	1,615
- France						1	28
- Djibouti	1,279	1,105	1,205	1,059	1,399	2,471	1,439
- Japan							52
- India							74
- United Kingdom							10
- Yemen				10	21	42	4

In the case of fruits, Ethiopia is practically only exporting to Djibouti (Table 9)

3.2 Domestic market

The size of the domestic market for fruit and vegetables is very limited and not diverse. Fruits are hardly found at all and within the group of vegetables mostly potatoes, onions and tomatoes are sold. Fruits and vegetables are transported to the local market by local transport, carts and donkeys. Regular trucks are used for transportation to Addis.

Packaging for local markets is rudimentary. Baskets are used to contain leafy vegetables, while jute and plastic sacks are used for marketing onions, shallots, potatoes, carrots, beets, and head cabbages. Growers of leafy vegetables near urban areas do not use any containers, but instead tie the product into bundles. Wooden crates

are mainly used for tomatoes. Plastic crates are also used for packing fruits, but are in short supply due to high prices. There is no uniform size or standard for the packages used in the local markets (Anonymous, 2003)

Main fruit and vegetables markets in Addis Ababa are Piazza, Mercato and Mesalumia Fahil berenda. These markets have all kind of clients; wholesalers, retailers and consumers are sourcing their fruit and vegetables at these markets. Approximately 50% of the supply originates from smallholder producers or farmers' cooperatives. Piazza and Mercato sell mostly vegetables and only a limited range of fruits (some banana and papaya). Some traders have their own shop and storage place. A lot of traders are selling their produce at the messy pathways of the market. Produce comes from all over the country, but mostly from the Rift valley.

Fruit and vegetables are also sold at some supermarkets in Addis Ababa but to a very limited extent. The most modern supermarket, Bambi Supermarket, sells little vegetables but in a wide range. Availability of fruits is low, mostly apples are offered. Fruits and vegetables are not sold in any processed manner like salads. The fruit juices at the shelves are all imported from countries as South Africa and the USA.

Wholesale transport Dire Dawa Addis

Piazza market Addis

Vegetables Bambi supermarket

3.3 Regional markets

Djibouti's arid climate and rocky soil mean that it must import 90% of its fruit and vegetable demand. Djibouti is the largest F&V export market for Ethiopia. With an increased expatriate and military presence in Djibouti there appears to be opportunities for supplying this community with higher-value (and higher quality) niche vegetables, especially leafy greens. Regular cargo flights are bringing produce in from France to be sold in supermarkets, which are Djibouti family owned. Djibouti imports up to 15 tonnes of fresh produce per week from Kenya, which Ethiopian exporters can try to capture with consistent quality and competitively priced produce. Initial attempts by exporters to ship higher-value niche products to Djibouti from Addis via air freight were not commercially viable and have stopped. (Greenhalgh and Havis, 2005; personal communication EHPEA)

The trade, especially from Dire Dawa, is dominated by ethnic Somalis. The Merchant Union around Dire Dawa is stronger than the farmers' cooperatives. Somali and the Djibouti traders are very powerful. This market is mainly supplied by middlemen who obtain produce from smallholders, private growers as well as the state farm at Upper Awash.

The poor export logistics into Djibouti (handling, packing, storage, train infrastructure, etc.) means that Ethiopian produce is only sold in the lower value market. Gurmed, a consortium of 18-20 individual exporters in Dire Dawa, is one of the largest Ethiopian exporters to Djibouti. Fruit and vegetables are brought by train and road to Djibouti from Dire Dawa. The train from Dire Dawa to Djibouti takes about 10-12 hour, by truck it takes about 8-10 hours. Time to wait at the border can take up to 10 hours. The train system is owned by the Djibouti and Ethiopian government. Currently a South African enterprise is in process of acquiring the train system. Currently the transport of fruit and vegetables through Dire Dawa train station is not well organized. Fruits and vegetables are stored in crates before loading. No cool storage is available. Loading is often taking place during midday, the hottest time of the day. As a result of poor handling of the produce, the fruits and vegetables arrive Djibouti in a very bad state. Part of fruit and vegetables export is probably not going through customs. By-passing customs (illegal trade) saves the trader time due to no paper work and the produce can be transported by night (at lower temperatures) Greenhalgh and Havis, 2005).

Storage room at train station in Dire Dawa

Train for transporting fruits and vegetables from Dire Dawa to Djibouti

Ethiopia and Djibouti have a certain agreement in which Ethiopia delivers fruit and vegetables at fixed prices. Prices for fruit and vegetables haven't changed for years. As a result of fixed prices, quality of the produce doesn't matter much. Therefore all produce transported by train are sold at the lower end of the Djibouti market. For a further development of this important regional trade, this price agreement needs to be abolished.

During the fasting season before Eastern (lasts about 8 weeks) Christians don't eat meat and therefore consumption of vegetables increases. As a result of higher demand for vegetables, prices increase as well. In February 2007 tomato price increased from 2.5 to 4 birr and orange price from 1 to 4 birr. Because prices at the local market increases, the exported volume decreases drastically.

Ethiopian exports to Sudan are increasing due to the economic development in the Southern part of the country. However, very little trade data available on trends in Sudanese horticulture product consumption and imports. If the peace process in Sudan is successful then opportunities exist for an acceleration in growth rates (Greenhalgh and Havis, 2005).

The conflict with Eritrea resulted in complete stop of once a major export flow of fruits and vegetables to that country. A final solution of this conflict over time could result in a re-emerging export to Eritrea.

The Eastern region of Ethiopia is exporting fruit and vegetables to Somalia and Somaliland (Hergeisha) as well. Again, no statistical data could be found about this export market.

3.4 Middle East Market

The markets with the highest potential for F&V exports in the Middle East are United Arab Emirates (Dubai and Abu Dhabi), Saudi Arabia and Yemen.

The UAE depends heavily on the importation of horticulture products to fill the gap between the country's requirements and the limited domestic production. The Emirate of Dubai is considered the trade centre of the UAE and the Arabian Peninsula/Gulf region as a whole. Horticulture re-exports from Dubai make their way northward to Africa. In the absence of accurate government data on re-exports, major traders estimate that 50% of imported produce find their way to other re-exports destinations. An increase in population and high growth in tourism have led to consistently increasing demand for imports. At the same time, dramatic changes in the lifestyle of the UAE consumers in recent times have led to an increase in demand for superior, high quality foods. Few Middle East markets are under-supplied. Also domestic production in many Middle East countries has been growing rapidly over the past decade. State of the art technology has been used leading to production of high quality produce. As yet, domestic production meets less than half of the demand for fresh fruit and vegetables in UAE, Saudi Arabia and Oman Greenhalgh and Havis, 2005).

Although there is growing local production of tomatoes, cucumbers, strawberries and dates, among other F&V, most fresh F&V consumed are imported from nearby countries such as Iran, Syria, Lebanon, Egypt, Saudi Arabia, Turkey, Jordan, the Indian Subcontinent and several African countries. The USA, Chile, the Netherlands, Australia and New Zealand are the principal suppliers of high quality products that are in demand by luxury hotels and restaurants and high quality supermarket chains. As regards imports from Africa, South Africa and Kenya are the major suppliers Greenhalgh and Havis, 2005).

As is happening internationally, there is a definite consolidation in the food retail business in the Gulf. In the UAE, it is reported that nearly 50% of total retail sales is concentrated within hypermarkets, superstores and supermarkets despite their limited number. The remaining 50% is conducted through smaller-sized groceries and convenience stores. With the arrival of Carrefour which now has seven hypermarkets in the UAE and one each in Oman and Qatar and the start of operations in Bahrain of a hypermarket by another French retailer, Casino, the business of food is being transformed. In addition to the French interests, other supermarket chains have been established such as Co-op and Spinneys, and an Abu Dhabi importer, distributor and retailer, EMKE Group, has moved into the hypermarket business. Except for Carrefour and the Co-op all major chains directly import a large part of the products they stock, especially through consolidated shipments which gives them an edge. These chains also depend on local companies to import the items, often handled by an exclusive agent. The major food companies own modern warehousing facilities which are equipped with fleets of dry and refrigerated trucks and run organized food distribution. (Greenhalgh and Havis, 2005)

Supermarkets in the Middle East require high quality of fruit and vegetables, but not to a similar extent as the European market. The external quality of the produce is important, not the internal quality or food safety. Dubai and other ME countries require both high and low quality products. In the high quality segment you need a good product and good packaging. To be able to trade to trade with the Middle East you furthermore need direct contacts or family linkages. Middle East traders are notorious for their late and irregular payments .

Major changes in lifestyle and consumption patterns in addition to rising incomes have paved the road to fast expansion in the quick service sector over the past decade. Hotels and restaurants are thriving based on the growing numbers of business and increasingly leisure tourists. It is estimated that food demand through hotels and restaurants will increase with 10% annually over the next 5 years (Greenhalgh and Havis, 2005).

Three big importers dominate the Saudi trade. The share of the horticulture produce being sold in supermarkets is growing, as is the market for organic, frozen and pre-packed produce. The main vegetable imports are onions, tomatoes and potatoes. Some exotic fruits and vegetables are shipped by air as organic pineapples and green beans (Greenhalgh and Havis, 2005).

Overall, there is less concern about production and process methods and conformity inspection procedures in the Middle East markets than in EU markets. The growth of exports from Kenya and South Africa has helped to improve the image of African traders and products (Greenhalgh and Havis, 2005). Unfortunately, supermarkets in the Middle East are still suspicious about Ethiopian produce. For this reason an Ethiopian-Dutch exporter is now emphasizing the “Dutch flavour” of his Ethiopian vegetables hoping to bypass the bad Ethiopian image.

Ethiopia is competing with other nearby countries as Egypt, Jordan and Kenya. Saudi Arabia imports fruit and vegetables from the Arab League countries duty free. Trading

contracts between Ethiopia and Middle East markets need to be more fully established. Middle East markets offer a better opportunity for smallholder and outgrower exports than EU markets since rigorous codes of practice do not have be met and traceability audit trails are not required (Greenhalgh and Havis, 2005).

3.5 European market

The EU is increasingly developing legislative standards for imported products which define the permitted levels of pesticide residues, general hygiene requirements and traceability to ensure compliance with EU safety standards. There are now a range of technical standards for food crops based on voluntary codes of practice and protocols which are accepted throughout the EU. Compliance with these standards is often a pre-requisite for supply to many importers and retailers and certainly essential for access to the premium supply chains which lead to the supermarkets. The most widely employed standard for farm production is EurepGAP, developed by a group of major European retailers. For packing houses, adoption of the British Retail Consortium (BRC) technical protocol is more and more requested. Both EurepGAP and BRC require regular independent auditing by accredited audits. Currently there are no suitable accredited auditors in Ethiopia (Greenhalgh and Havis, 2005).

Currently European export is pretty much restricted to beans. The green beans are mainly exported to Europe by air. The exports are supplied by private sector operations located in the highlands around Addis Ababa and the lowlands around Ziway and Meki, as well the state farms in Upper Wash and the Rift valley. Presently four main green bean producers are EurepGAP certified: UAIEE, HDE, ETECO and Ethioflora, while Green Bean – van Oers is about to be audited.

Table 10: Trading countries of Ethiopian beans

Country of Destination	Ethiopian export of beans (1000 US$)						
	1997	1998	1999	2000	2001	2002	2003
World	15,524	10,201	13,246	8,671	10,890	14,119	12,045
Belgium/Luxembourg	154	125	600	109	502	615	660
Djibouti	344	190	383	341	245	188	859
Germany	2,263	1,767	1,809	1,654	1,716	1,670	710
Italy	89		86	43	482	408	210
Morocco	60		285	1,240	1,409	937	710
Netherlands	1,410	1,240	2,040	1,514	1,273	650	784
Pakistan					18	2,354	711
India					183	1,033	2,008
South African Customs Union	89				46	971	411
Spain					55	224	152
Sudan				64	196	368	919
United Kingdom			155	13	745	1,126	837
United States of America		40		34	120	293	277
Yemen	1,651	1,457	2,458	2,147	1,415	1,413	2,001

Data source: ITC/WTO data

Table 10 shows that the EU is the biggest export market for beans (about 25%), followed by Yemen and India. The total Ethiopian export of beans did not grow in the period 1997-2003, but it is expected to be growing with the new established company and privatization of the state farms.

Ethiopia's vegetable exports to Europe represent only a very small fraction of exports from leading African producers such as Kenya. EU import figures for green beans in 2002 show total imports from Kenya as 21.700 tonnes compared with 1.920 tonnes from Ethiopia (Greenhalgh). Within the EU market, France is the largest importer of green beans (34%) followed by the UK (22%), The Netherlands (17%) and Spain (11%) however most volume supplied to France and Spain is by truck and ferry from Morocco (Greenhalgh and Havis, 2005).

Total consumption of green beans in the EU continues to grow with 9% per annum and although Morocco and Egypt have been the beneficiary of much of this growth there remain good prospects for high quality supply particularly in January and February (Greenhalgh and Havis, 2005).

Sorting and packaging of beans

Europe does not produce fresh beans in winter season and production in countries like Egypt and Morocco in January and February can be unreliable providing a good market opportunity for Ethiopia from December through April or May. However, Ethiopia has to compete with Kenya, Senegal, Tanzania, Egypt and Morocco. (Verschoor et al, 2006)

All the fresh products currently exported to Europe are highly perishable and return a high value per kg. The only means of export appropriate for these products is air freight which forms the major cost of supply. Production costs in competitor countries and in particular those in Africa, such as Kenya, Zambia and Zimbabwe, are broadly similar to Ethiopia so air freight cost can be the major point of difference. (Greenghalgh and Havis, 2005)

With the exception of exports to the E.U. and Gulf costal countries, the transport of horticulture products is not well-developed. Refrigerated trucks, introduced in 1984 by Etfruit, are mainly used to transport export products for E.U. and Middle East markets

from farms to the airport. However, these trucks are expensive, unless volume justifies the available capacity. Further, they are not readily available for rent like multi-purpose dry trucks (Anonymous, 2003).

In all EU countries the trend for pre packed, trimmed or ready to cook is rapidly developing mirroring the situation in the UK. To add value in this way Ethiopian producers will need to apply higher levels of investment in their packing and handling facilities and in cold chain coupled with staff training. (Greenhalgh and Havis, 2005). Currently FreshPort and v/der Putten offer cold transportation and storage.

4. Policy and institutions

4.1 Government policy in horticulture

The Government emphasized the priority given to agricultural development through its policy document entitled Agricultural Development Led Industrialization (ADLI). This policy focuses on the development of agriculture both as a source of production for direct consumption and of raw materials for industrial processing, on the one hand, and as a major source of consumer products coming out from the industrial sector, on the other (EIA, 2006).

Production and processing of horticultural crops, vegetables and fruits have been placed by the Government in the list of high priority areas and various incentives have been provided for investors investing in this sub-sector

The government has taken a number of important steps to improve the investment environment, including creation of an investment code, establishment of federal and regional Investment Agencies, liberalization of foreign exchange, creation of the Export Promotion Agency and introduction of incentive schemes for exporters. Also, the government has affected policies in an attempt to increase exports. In addition to establishing the Export Promotion Department (EPD), the government has introduced duty draw back, duty free importation, income tax holiday, customs warehouse facility, export guarantee scheme, voucher system, retention scheme, and an overseas loan guarantee scheme. However, investors experience various constraints in the implementation of some these regulations (Anonymous, 2003).

Incentives for investors engaged in new enterprises and expansions are available both to foreign and domestic investors. The type of incentives that are available both to foreign and domestic investors are the following:

Customs Duty Exemption

- A 100 percent exemption from the payment of import customs duty and other taxes levied on imports is granted to investment capital goods and construction materials necessary for the establishment of a new enterprise or for the

expansion or upgrading of an existing enterprise as well as spare parts worth up to 15 percent of the value of the imported capital goods;
- Investment capital goods imported without the payment of import customs duties and other taxes levied on imports may be transferred to investors enjoying similar privileges;
- Exemptions from customs duties or other taxes levied on imports are granted for raw materials and packing materials necessary for the production of export goods. Taxes and duties paid on raw materials and packaging materials are drawn back at the time of exports of finished products. The voucher system and bonded manufacturing warehouse facilities are also in place.
- All goods and services destined for export are exempted from any export and other taxes levied on exports.

Income Tax Exemption
- Any income derived from an approved new manufacturing, agro-industrial or agricultural investment is exempted from the payment of income tax ranging from 2-8 years depending up on the area of investment, the volume of export and the location in which the investment is undertaken.
- Income derived from an expansion or upgrading of an existing manufacturing, agro-industrial or agricultural enterprise is exempted from income tax for a period of two years if it exports at least 50% of its products and increases, in value, its production by 25%.

Loss Carry forward
Business enterprises that suffer losses during the tax holiday period can carry forward such losses for half of the income tax exemption period, after the expiry of such period.

Source: EIA, 2006

The strong promotion by the Ethiopian government for domestic and foreign investment in and export from the horticulture sector has improved the business environment. Table 11 shows the investment situation of Ethiopia compared to other nearby African countries.

Table 11: Selected business indicators for Ethiopia and other African countries in the region.

Selected business indicators

	Overall ease of business (rank out of 155)	Starting a business Time (days)	Rigidity of labour laws index (0-100) [a]	Trading across borders Average time for exports (days)	Enforcing contracts Time (days)	Protecting investors index (0-10) [b]	Registering property Time (days)	Paying taxes % of gross profit
Kenya	68	54	28	45	360	5.3	73	68
Uganda	72	36	13	58	209	5.3	48	43
Ethiopia	**101**	**32**	**41**	**46**	**420**	**2.7**	**56**	**44**
Tanzania	140	35	69	30	242	2.0	61	51
World average	-	47	41	31	393	5.1	85	46

[a] 0 = minimum rigidity, 100 = maximum rigidity. [b] 0 = minimum protection, 10 = maximum protection.

Source: World Bank, *Doing Business in 2006*.

The Ethiopian government has selected four priority areas for further development of the horticultural sector. These four areas are Tana Beles, Rift Valley, Dedessa valley and Dire Dawa. These areas are relatively accessible with better infrastructure and experienced farmers in the fruit and vegetable production. For these selected priority areas, MoARD has prepared a program for improvement of production and marketing of fruits and vegetables. The program consists of capacity building support, information and decision support and system designing support (identification of global consumers preferences and a production and supply system for sustainable seed production) (Workafes, 2007).

The government has developed a five year plan from 2005 till 2010 (see table 12) in which it is targeted to increase the productivity of matured fruit crop by 400% and of green beans with 100% (W, 2007).

Table 12: Production plan for 2005-2010 in the main corridor growths.

	growth corridor	expected production (ton)	land coverage (ha)
Mango	E. & S. Ethiopia	7952	5350
Avocado	E. & S. Ethiopia	2540	2150
Pineapple	S. Ethiopia	75000	1875
Apple	C. & S. Ethiopia	1740	2508
Green beans	Rift valley	15000	1500

Source: Woldsadiq, 2007

4.2 Relevant institutions

EHPEA
Since its establishment in September 2002 the Ethiopia Horticulture Producers and Exporters Association (EHPEA) has proved to be an effective organization facilitating private sector horticultural exports. At the moment there are 66 members. It is a legally registered organization. It is the only national association as regards horticulture in Ethiopia. The EHPEA's financial resources are made up of the contribution of members, and national and international donors. It represents the horticulture sector in the country as well as internationally and it also organizes trade fairs.

Ministry of Agriculture and Rural Development (MoARD)
In 2004 a within MoARD a department for horticulture/floriculture was established with two sections, one for production support and another for marketing/export support. It appears that both section till-date have been under-resourced and have not yet been able to make a visible contribution to the further development of F&V sector.

The Ethiopian Institute of Agricultural Research (EIAR) has been taken greater interest in horticulture than in the past and has developed a plan for research strategies in the horticultural sector. Melkasa (for the lowland crops) and Holeta (for the high land crops)

are the two relevant research stations. However, in order to effectively support the further growth of the F&V export sector, a major re-orientation towards demand-driven and commercially oriented research agenda is needed. This should be accompanied by additional investments by the public sector and active involved of the private sector.

Ministry of Trade and Industry (MoTI)
MoTI has the main responsibility for trade policy and development in consultation with the Prime Minister's Office. With regards to horticulture MoTI has been mainly dealing directly with the floriculture sector. A number of agencies within MoTI are relevant for further development of the F&V sector:

- Export Promotion Department (EPD)
  Major mandate is to promote Ethiopian exports and include services such as training for exporters, conducting studies, collecting and dissemination of market information etc. CBI has been assisting the EPD among other in programs for the floriculture and vegetable sectors.
- Ethiopian Investment Authority (EIA)
  Serves as a one-stop-shop for investors and has played a major role in facilitating foreign investments in the horticulture sector.
- Ethiopian Quality and Standard Authority (QSAE)
  The QSAE is responsible for the formulation of national standards and undertake activities such as promoting and assisting in quality management practices, co-ordination of standardisation, promoting reliability of testing laboratories etc. The QSAE is monitoring efforts to obtain EUREPGAP certification in the horticultural sector.

Ethiopian development Bank (EDB)
The EDB is the key institution financing the expansion of the floriculture sector. The loans have favourable conditions compared to the general commercial loans, with a grace period and at relatively low interest rates. The debt:equity ratio for these loans is 70:30 for start ups and 60:40 for expansion of existing projects. Till date hardly any investors have made use of these facilities for investments in the F&V sector.

5. List of current initiatives and developments

Since many initiatives are being developed it is not possible aiming at a full description of all the activities on-going, let alone the plans being developed. A summary of the main initiatives the mission came across during the interviews and discussions are presented.

At present both state owned and private farms are operating in fruit and vegetable production, export and processing sub-sector in Ethiopia. Two state owned enterprises (i.e., Upper Awash Agro-Industry Enterprise (UAAIE) and Horticulture Development Enterprise (HDE) are producing fruits and vegetables both for domestic and export markets in the country. UAAIE is the biggest producer of fresh and processed fruits and vegetables in the country. It runs three farms (one farm has recently been transferred into sugar production) and an agro-processing factory at Merti, Arsi Zone of Oromia National Regional State. The enterprise is currently in the pipeline for privatization. (EIA, 2006)

"In terms of take off, may be before we started with floriculture, it was rather in the other sub-sectors like fruits and vegetables that Ethiopia has started. But I don't think that we have succeeded as much as we did with floriculture. So our focus now will be on balance with the other sub-sectors of the horticulture. That is why we have decided to privatize our public enterprises (state farms) dealing with this sector. We will cut them into pieces and privatize them so that we will make the growth of this sector faster."
Source: Quote of Minister Girma, Minister of Trade and Industry in HortiNews, 2007

Although public enterprises still play vital roles, a few private investors and existing public enterprises are committed to develop the untapped potential of the sector. Producers' cooperatives around Addis Ababa, Alemaya and Meky-Ziwayi specialize mainly in the production of vegetables. Recently VOCA Ethiopia, with financial assistance provided by USAID Ethiopia, started a three-year project to export vegetables and fruit from suppliers of cooperatives unions with linkages to horticulture exporters (Anonymous, 2003)

Strawberry farm near Mojo

In the last decade, a few domestic and foreign investors have become interested in the production of fruit and vegetables. In the Rift valley the focus is on green beans for European markets. Besides UAAIE and HDE state farms private companies are producing and exporting green beans as well among others ETECO, Ethioflora and Ethiovegfru (with Van Oers as partner). Ethioflora is now producing and exporting green beans for 15 years. It exports beans from its own farm but recently has also started to source from out-growers. The Green Bean Project in which the beans are exported by Ethiovegfru has recently been established at Lake Koka. This farm is a partnership

between Ethiopian and Dutch investors and sent their first shipments to Europe early this year. The use of drip irrigation as increased productivity enormously.

Besides green bean production, foreign investors have now also entered Ethiopia to start making use of other potentials. A few niche vegetable products have been tried by the larger farms including asparagus, capsicum, okra and snow peas. An Israelian investor started strawberry production in 2003 and exports to the Middle East. A Dutch investor has started to grow various high value vegetables produced in greenhouse for the Middle East market, with European market potential as well. Other recent initiatives are mango plantations in the Western region by Indian investors, avocado and passion fruit planting by a Dutch investor. An initiative to export (processed) pineapple has not been able to push through due to limited pineapple production because of land shortage. Table grape production has started around Mojo and plans exist to expand to areas in the North of the country.

Plans are made by BGI-Ethiopia to start 2000 ha production grapes for wine production. A South African company has recently shown interest in starting avocado production on state-farm land with long-term options for out-growers arrangements.

Besides fruit and vegetables there have been some successful initiatives in herb production and export. SNV has programs to assist pineapple, mango and apple production.

USAID is working in the horticulture sector at smallholder level and interested in looking at support to the larger commercial exporting sector. Currently there are plans to support 15 medium-sized commercial farms with technical assistance and linking them to markets in the UK. A training plan is being developed for arriving at EUREPGAP certification. In the long-term out-growers schemes around these farms could be developed.

MoIT and UNIDO have started to develop a 5-year masterplan for the food processing sector. Although specific product groups need to be selected, it is almost certain that fruit and vegetable processing will form a main component of this activity.

Through the Embssay of Israel a project is initiated to support fruit tree nursery developments in Mango, Avocado and some other fruits in the Southern part of Ethiopia.

IDE (an American based NGO) is starting a project in the Rift Valley aiming at introducing improved irrigation and farm management techniques to smallholder producers and at the same facilitate establishment of market linkages.

The Ethiopian government has plans for the developments of building a dry-dock for refrigerated containers and start a pilot with refrigerated containers for meat.

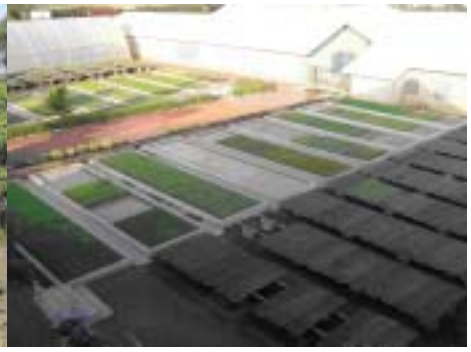
CFC jointly with EHPEA will start this year with a project linking smallholders to exporters for green beans, okra and hot pepper, focus on the Rift Valley. This project will include construction of cold stores and packing houses.

6. Constraints in Fruit and Vegetable export development

The supply of horticultural products is complex, capital and labour intensive, time sensitive and dynamic. The stakeholders include the land leaser, farm and pack house labourers, farmers, pack house managers, truckers, marketing organizations, traders, input and equipment suppliers, banks, airlines, government agencies, and supermarkets. The stages in the chain include market evaluation, operation planning, production, harvesting, assembly and sorting, quality control, packing, transport, storage, and export and distribution (Anonymous, 2003).

Constant supply of quality fruit and vegetables is the problem, not the demand
Practically all stakeholders agree that supply of fruit and vegetables is holding back further exports, not its demand. Production is actually running short compared to the demand in European and Middle East markets. Importers at Fruit Logistika 2007 emphasized high interest in Ethiopian produce (Parkin, 2007). If the market is mentioned as the main bottleneck for export expansion it is not its demand but the process as transportation, communication etc.

Avocado seedlings at Upper Awash State farm



Vegetable seed nursery at Genesis Farm

Fruit and vegetables varieties
Knowledge and availability of the proper varieties with respect to local climatic conditions and consumer demand is lacking. Current seed production can not satisfy local demand. Good vegetable seed varieties are imported but quantity is restricted. Some private companies have started to produce vegetable seed production as Segal and Genesis in Debre Zeit.
Fruit varieties as mango, apple and pineapple are imported from Israel. Upper Awash State Farm are developing and distributing improved fruit varieties. Their seedling business is one of the most profitable at the moment. Mango seedlings are grown at 7 ha and sold with a total revenue of 45.000 US$ per year. Fruits of these varieties are possible for export. Previously it has already been exported to the Netherlands and Saudi Arabia. Avocado is also expanding; UAEEI sells 50.000 seedlings per year. Citrus seedlings (8 varieties) and produce is aimed for domestic market. Buyers (a lot of NGO's) come to the state farm to buy the seedlings.

R&D centres are trying to improve their seedling multiplication programmes. Until now these programmes are limited. Although it is said that EARO has all varieties, the availability is not the problem but the knowledge of which variety to use in which situation.

Packaging
Because of the very limited demand for quality packaging for local market utilization, packing technology is much below the standard of world market requirement both in strength and attractiveness. There have been some improvements following the establishment of a new packaging company at Burayu. As yet, however, the quality does not meet international marketing requirements. The appearance and design of packaging is less important for floriculture exports, since they are frequently re-packed in the importing countries prior to sale. Packaging materials and container size that meet the regulatory demands of the target market are needed (Anonymous, 2003).

Transport
Bole Airport is the only airport in Ethiopia that handles international flights. Bahir Dar, Dire Dawa, Gondor, Mekele, and Arbaminch have airports capable of handling international traffic but, as yet, no international flights use these destinations. Airfreight is typically the major cost component in horticultural exports. Airfreight for horticultural products is available either through the chartering of cargo aircraft or use of space on passenger aircraft. The volume of passenger flight airfreight is closely related to general trade and tourism development - currently, only a small number of airlines operate in Ethiopia (Anonymous, 2003). The new cargo terminal of Ethiopian Airlines is an improvement; unfortunately it only offers space for 5 trucks which creates long queues.

For a number of years, Ethiopian Airlines (EAL) has leased cargo planes to Kenyan horticultural exporters, arguing that these flights are needed year-round thus provide an important source of foreign exchange to the airline. Ethiopian exporters currently do not export year round. EAL B-757 charter jets carry a maximum load of 36 tons, while passenger flights offer a maximum of 5 tons of cargo space per week. EAL offers flights to Europe, Dubai, Saudi Arabia, West Africa, Hong Kong, Thailand and the USA. Each year, EAL negotiates an airfreight agreement with Etfruit covering the major export season from October to March. Ethiohortishare used to charter some six or seven cargo planes per week, but this number dropped to three charters per week in the 2001/02 export season (Anonymous, 2003).

Other airlines transporting cargo to Europe include the passenger flights of British Airways (BA) and Lufthansa, but space availability on these flights is severely constrained. Lufthansa currently flies Airbus 3-4 times per week with cargo capacities ranging between 6 to 14 tons per day. BA use Airbus 320 passenger aircraft that have a freight capacity of 2-4 tons, but a sizeable proportion of this capacity is currently reserved for cargo out of Egypt. In addition, there are a number of other airlines including Kenya Airways, Egypt Air and Yemenia Cargo Services, which gives a cargo service to various European cities via Sana'a (Anonymous, 2003).

The government recently announced an "open skies" policy to increase capacity and competition in the sector, but as of yet, no cargo freighter companies have established operations. A recent World Bank (2001) study strongly recommended the liberalization

of the cargo charter market, by permitting cargo charter planes to operate from any airport in Ethiopia without the need for a "waiver" from EAL (Anonymous, 2003).

Freight prices are influenced by fuel prices and the number of southbound cargos, Take-off time also influences cost, because at higher temperatures the loading capacity is reduced. Freight charges are notoriously fickle unless medium term contracts are entered into, though sometimes even long-standing contracts cannot keep prices down. During the past year, there has been a dispute between EAL and Ethiohortishare regarding the level of cargo freight rates. Following government intervention, a price of $58,000 per flight was agreed. Private companies negotiate their own freight rates but are likely to be influenced by rates reached between Ethiohortishare and EAL (Anonymous, 2003).

Unfortunately, the availability and cost of airfreight is problematic, for two main reasons. First, volumes to be exported exceed available passenger flight cargo capacity. Second, there is an insufficient amount of exports to justify regular cargo charters. Because of this and the considerable variation of rates quoted by the various airlines, it is difficult to generalize freight costs. However, it can be maintained that the cost of airliners is more expensive than that of chartered cargo planes, and that exporters compete for limited and higher-cost space on passenger airliners instead of using less expensive chartered cargoes, because of insufficient volume to fill the latter (Anonymous, 2003)

The following commercial freight rates were quoted by EAL from Addis Ababa for both general and perishable cargoes in excess of 100kg: Copenhagen $1.50/kg, Amsterdam and Frankfurt $1.80/kg, London $1.85/kg, Rome $1.87/kg, while US cargo rates were $2.00/kg. In addition, costs were provided for special cargo rates for different types of commodities depending on the market which are availed for a specific period of time on liner services. British Airways quoted freight charge of $1.50/kg from Addis Ababa to London. While commercial airlines offer reliability and access to key European destinations, commercial freight rates are usually considerably more expensive than charter services. Charters can offer cost savings of 10 to 20 per cent compared with passenger flights (Anonymous, 2003)

Airfreight Addis to Dubai is twice as expensive as Amsterdam-Dubai. While airfreight from Addis-Jeddah is cheaper than Amsterdam-Jeddah.

Sea vessels are not available for fruit and vegetables. Sea freight might be the future for Ethiopia, especially for fruits. Sea freight will take about two weeks to transport produce from Djibouti to Europe. Kenya already exports most of their fruits by sea. The Ethiopian Shipping Line ships once a week to Dubai. Producers however prefer Maersk as it is most reliable, more than Ethiopian Shipping Line. However, good relationships with Maersk and Ethiopia has to be built yet.

Cold Storage.

Effective cooling, storage and handling systems are vital to maintain the quality of horticultural products. At the packhouse the product should be cooled, graded and packed under temperature and humidity controlled conditions. Refrigerated transport is required from packhouse to airport, and at the airport, appropriate storage facilities for an

already chilled and packaged product are required particularly if the produce is not to be immediately loaded on an aircraft.

In the fruits and vegetables sector, there are two privately owned cold stores in Ethiopia, namely the Ethio-flora and Tippu Valley cold stores at Ziway. In the public sector, Etfruit and the two state enterprises have cold store operations. The most widely-used stores are not designed to rapidly reduce field heat and are not of a sufficiently high standard. Without initial storage in field cooling evaporators and regular transit to rapid chill facilities, delicate vegetable products will not arrive in an acceptable state or last the required 7 to 10 days from harvest to end of customer life.

Cold storage of vegetables at Genesis farm shop

Currently there is only one private cold store at Bole airport. The facility has three separately controlled chill chambers plus a larger chilled handling area and a non-chilled dry goods area. The store was built and equipped to a very high standard and is customs bonded. However, usage costs are high, and so the space is under-utilized. As growers become able to schedule higher volumes of storage at more regular intervals, it should be possible to agree to reduced rates. Use of an airport cold store will also free chilled vehicles to make more delivery runs, allow aircraft pallets and containers to be loaded in chill, and assist with coping with cargo off-loads (Anonymous, 2003).

Land Tenure.

Insecurity due to lack of land tenure causes many problems in the fruit and vegetable sector. Farmers focus on short-term results rather than longer-term sustainability. Further, difficulty in obtaining and uncertainty in maintaining land-lease rights affect investors' decisions in entering the sub-sector. Land availability and security of tenure are perceived as major constraints to the development of horticultural production. Further, several private investors have experienced concern with delays in acquiring land leases, the length of the lease period, the lack of an efficient land market and the unwillingness of banks to accept land as collateral. Protracted land negotiations following the initial company registration means that money is tied up and is not generating a return. Without a more secure system of land tenure, horticultural exports are unlikely to expand.

A recent World Bank (2001) report recommended that the Urban Land Lease Proclamation be reviewed to ensure that banks that accept leases for collateral. In addition, the Rural Land Proclamation should clearly define leasehold and freehold rights for both peasants and nomads and should restrict the government's ability to re-distribute and re-allocate land except when needed for public use and ensure that full compensation is paid. Further, as mentioned with reference to cereals and coffee, an

accurate system land information needs to be developed. Technical assistance could help on both these accounts (Anonymous, 2003).

Lack of Skilled Labour Resources and Technical Know-How.

While Ethiopia is over-supplied with low-cost unskilled labour, there is a lack of skilled manpower with managerial abilities and in-depth horticultural knowledge. Several horticultural companies see this as a major constraint to production, and cut flower producers have gone as far as using expatriate labour to alleviate these difficulties.

Further, the sub-sector lags behind that of most producing countries in its agronomic practices. In part, this is because both state farms and private sector operations do not have the capital to pay for the technology and expertise required. Further, there has been very little formal research to overcome problems of low genetic potential, an absence of quality selection to overcome the lack of high-yielding and high-quality cultivars, inappropriate disease and insect pest control measures, and a lack of quality seed supply. Overcoming these factors is important in raising Ethiopia's international competitiveness.

Finally, producers and exporters have complained of a lack of know-how in activities throughout the supply chain, including knowledge of production planning, post-harvesting handling and processing practices. Low-level technology, knowledge of specifications and codes of practice, knowledge of markets and marketing and lack of promotion activities are additional limitations (Anonymous, 2003).

Availability and Use of Agro-Chemicals.

Horticultural production is facilitated by a range of chemicals. While there are certain fertilizers available locally, invariably it is necessary to import most of the fungicides, insecticides, herbicides and nematicides used. Restrictions on agro-chemical imports create difficulties for the cut flower industry, and will no doubt create problems for other horticultural product exports. Imports are strictly controlled by the MOARD's Crop Production and Protection Technology and Regulatory Department. Currently there are a limited number of chemicals on the List of Registered Pesticides. In addition, the list contains details of Ethiopian companies that are permitted to supply these insecticides, which in 1999 numbered 18.

If export horticultural production is to expand, an increased range of chemicals will need to be imported. However, in order for a chemical to be added to the List of Registered Pesticides, it is necessary for a research institution to conduct a replication trial. This is both costly and time consuming - replication trials can take 2 or 3 years to complete, and then a national committee must approve the listing. The MOA recognizes that there is a problem with the current regulations and is looking specifically at reviewing policies. To facilitate imports of needed non-registered chemicals, a company can currently request permission from the Crop Protection Department to import a small quantity of the chemical. While this helps in the short-term, the same costly and time-consuming procedures have to be repeated if further quantities of the chemical are required.

Also, in recent years there has been growing consumer concern over the use of pesticides. The E.U. has banned use of certain pesticides and set a maximum residue level (MRL) for chemical residues remaining in the product (Anonymous, 2003).

Markets and Market Access.
Information about export markets is currently limited. In order to export successfully there are a number of key requirements relating to markets, market evaluation, promotion, and quality management that must be addressed. There is a need to undertake market studies to determine the range of products in demand in the target markets; issues to be addressed include volumes, varieties, seasonality, quality requirements, and most importantly competitiveness of Ethiopia. Without continued access to relevant market information it will be very difficult for Ethiopia to compete. As the dominant exporter, Ethiohortishare has been responsible for market development and provision of information to the farms – but a major criticism of this enterprise has been its failure to feed market information back to growers (Anonymous, 2003). EHPEA recognizes the need to collect market information.

Banking
The performance of the banking system is a major constraint. There is no free exchange and the outside world doesn't trust the Ethiopian banking system. The lack of domestic and foreign finance was perceived as a constraint on the development of the sector. Domestic banks have shown a reluctance to invest in the sector, in part due to a lack of sector knowledge and the perceived high risks involved, and foreign banks are currently not permitted to operate in Ethiopia (Anonymous, 2003).

7. Possibilities for further development

7.1 Unique selling points and competitiveness

One of the major advantage of Ethiopia in comparison with its competing countries in exporting fruit and vegetables to countries in the region, Middle East and Europe, is its favourable climatic conditions for agriculture. Ethiopia can produce a wide range of fruits and vegetables throughout the year due to different altitudes. The good soil and water conditions are enabling the agricultural potential further. Second advantage is its favourable geographical location. It is in particularly very close to Djibouti and the Middle Eastern markets. Labour is relatively inexpensive and productive. The combination of a very high agricultural potential, proximity to increasing food markets and low production costs offer Ethiopia a very good scope to increase its fruits and vegetables export.

"The first thing that would make Ethiopia very competitive in this area would be the cost. I don't think there would be any place where flowers would be produced that one could pay for a land something less than USD 20 for a hectare of land for a year. Our second comparative edge is labour cost because the industry is labour intensive. I don't think there is any one country around us that you would get labour as disciplined as ours, if not as trained as ours, and who can be reasonably cheaper in terms of cost. The third one is transport. And the fourth one is the support that growers get from the government. The Ethiopian government is supporting the sector on everyday basis. Lastly, which would remains only ours is the country's geographic location."
Source: Quote of Minister Girma, Minister of Trade and Industry in HortiNews, 2007

However, the mission concludes that all these factors still do not give Ethiopia a unique position in the various export markets. As a relative newcomer into the high value fruits and vegetable markets, Ethiopian export growers will be confronted with a high level of competition. Despite the shorter distance to the market the Ethiopian exporters will have a difficult time to match the South African fruit sector in terms of product quality, reliability, consistency of supplies and transport and marketing efficiency. West African fruit exporters have a major advantage in that pineapples, mangos, etc. can be shipped to the European market. Similarly, in the vegetable export sector Kenya in particular is well established as a reliable and efficient supplier of high value crops such as mangetous, baby corn, etc. Semi-processing and pre-packing provides the growers and exporters furthermore with added value for their export products. The objective of importers to diversify sourcing from main supplier Kenya, provides an opportunity for Ethiopia.

The competition levels at the Middle Eastern fruit and vegetable markets come from different sources but are equally high. Given the lower prices to be made, Ethiopia may become a serious contender on this market with efficient and transparent transport and marketing arrangements in place. Further chain integration will be essential to reduce the transaction costs and handling, packing and transport of the produce will have to improve to reduce losses.

The favourable investment conditions and incentives provided by the Ethiopian government have been an important factor in attracting both foreign and domestic investors to the export horticulture. However, this has so far been mainly restricted to the increased investment levels in the floriculture sub-sector. Investment levels in the fruit and vegetable sub-sectors for the development of export production for the high quality markets in Europe, North America and Japan have been restricted to a few projects only. Entry barriers in the international fruit and vegetable markets appear to be a major restricting factor. The high concentration of buying power among the supermarkets in combination with their strict demands in terms of quality and safety compliance, traceability and consistency of contracted supplies implies that any newcomer onto the high value fruit and vegetable markets will have to have highly effective and efficient production and post-harvest systems in place from the beginning onwards. Furthermore levels of competition from existing exporting countries (Morocco, South Africa, Kenya, Egypt, etc.) are high. Successful development of the export-oriented fruit and vegetable sub-sectors aimed at the high value markets in Europe and elsewhere thus will require additional efforts from the sector to raise the competitiveness of the sector and create market entry.

The performance of the smaller scale fruit and vegetable growers and exporters in the supply chains aimed at the lower value markets in Djibouti, Yemen and elsewhere in the Middle East is not always easy to assess. Lack of market transparency combined with buyers' concentration at the importers' side are hampering further growth and development of the sector. The current transaction costs are high and handling, packing and transport of the produce create considerable losses during the post-harvest process. Competitiveness can only be enhanced in these supply chains with a comprehensive approach that simultaneously addresses these issues.

7.2 Potential Product Market Combinations

European Market

The options for a renewed growth of the export market of beans to the European market in the period of December – April exists, given new investments in up-to-date production techniques and attention to certification (EUREPGAP).

A range of vegetable products have a potential in EU markets but need to be timed to fit specific marketing windows to ensure economic returns. This range includes asparagus, baby corn, snow peas, sugar snap, okra and other Asian vegetables.

Asparagus is now an established and growing product in the with high volume supply of green asparagus from Peru, USA, Thailand and SSA countries. The EU growth in imports is currently averaging approximately 7% per annum. Asparagus is one of the most perishable vegetables and a dedicated rapid chill preferably using hydro-cooling is essential to maintain quality as is a rapid packing and dispatch through an unbroken chill chain.

Baby corn as a single product and as an ingredient in mixed packs of baby vegetables continues to grow in popularity with supply from Thailand and a range of SSA sources. Edible podded peas are primarily imported by the UK, Netherlands and France. The main sources are Kenya and Guatemala dependant on the segment of the winter season. Total EU imports were 15.000 ton in 2000 of which half was from Kenya.

The market continues to grow for these products (especially sugar snap) while supply is sometimes limited due to poor quality following rain in the sourcing countries. Production of sugar snaps requires good time and handling management and maintenance of the chill chain and avoidance of dehydration of the product. Consumption of okra within the EU market is focused on the ethnic market and is growing. Kenya remains the leading exporter of okra, besides India and Thailand. The major EU importing countries in order of size are thought to be the UK, Netherlands, Franc and Germany. Okra is highly sensitive to handling damage but with the right controls is suitable for both commercial and smallholder production.

Many of these niche crops are much more expensive to establish and produce and should not be considered unless adequate post harvest and chill chain capacity is in place. Some of these products have a more narrow market than traditional crops and so production should not be considered without some commitment from a customer.

Increasingly the international produce business with its dedication to continuous year round supply and high quality standards focuses on importing from the most reliable and cost effective supply source at any given point in time. This leads major EU import companies supplying supermarkets and wholesalers to carefully select supplying countries and nominated producers who have a climatic advantage for a specific slot and a track record for reliability. To further ensure continuous supply importers often source simultaneously from two or three distinct locations as a hedge against weather or supply chain problems (Greenhalgh and Havis, 2005)

Export expansion of vegetables to Europe will be difficult due to its high quality requirements in producing and post harvest handling, but also due to competition with Mediterranean countries. Substitution of other exporting countries (like Kenya, Zimbabwe, Morocco, and Egypt) will be difficult. Focus should maybe be more on crops with increasing demand, like avocado. *“Demand for avocado in the EU is growing every year with roughly 10%. This offers a huge potential for Ethiopia” (quote from avocado producer).* In the EU there seems to be a growing demand for strawberry, grapes, mango and sugar snaps as well.

Regional Market and the Middle East

In the regional markets and Middle East markets in particular, demand for both fresh and processed fruit and vegetables is increasing. Producers in the Eastern region have good possibilities to export cabbage, Irish potato, white onion, leek, eggplant and okra to Djibouti and Somaliland. Besides vegetables, mango has good potential to be exported to Yemen and Somaliland. The planted area with mango is already growing.

Demand for tomato concentrate in the Middle East and Sudan is increasing. Saudi are now importing processed products from China. China is a real competitor for Ethiopia due to its low costs of production. Because of this competition, Ethiopia is planning to push through with HACPP certification and maybe ISO as well.

The limited information and transparency in the Middle East markets make it impossible to assess the potentials of Ethiopia at the product level. More detailed and focused assessments are required. Its is obvious however that when refrigerated container transport will become technical, logistical and economically feasible, a wide range of F&V products from Ethiopia can gain a high competitive position in the Middle East and high-level market segment in Djibouti.

Currently the lack of reputation of Ethiopia as a reliable supplier of high quality products seriously hampers the options in the Middle East and the high-value segment in the Djibouti market. A number of well positioned pilot activities in this market combined with an active promotion campaign needs to address this situation.

The low-value export sector of a wide variety of fruits and vegetables to Djibouti and Sudan are an important segment of the sector. Efforts to further professionalize this sector through improved chain integration, logistic arrangements, packaging, market information, etc. can add substantial value to this export channel. Given its geographical location and production circumstances, Ethiopia has a competitive advantage in these markets for a wide variety of products.

Domestic market

In general the development of the domestic F&V market will be a long-term process depending on aspects as economic development, urbanization and possibly related change in consumer behaviour. In the short-term however there is a potential for import substitution of processed fruits, mainly soft drink concentrates and fruit juices. The available processing plants have the potential to produce high quality products for the top segment market in Ethiopia.

8. Recommended agenda and workplan

Based on the findings of this identification the consultants propose an agenda for activities in the fruits and vegetables sector to be implemented within the Ethiopian-Dutch partnership. All activities proposed should be as much as possible be implemented in the by the MoARD identified specific fruit and vegetables development corridors. An important component of the development agenda of the Ethiopian government in the fruits and vegetable sector is the transfer of the state farms to the private sector. The recommended activities in the partnership will where relevant attempt to contribute to this policy.

A Investment workshops

Background
The mission concluded that focused foreign investments are required to further develop the fruits and vegetable export sector. Although the fast development in the floriculture sector should provide some confidence for investors in other sector, actual foreign investments in the F&V sector are still very limited. However, recently a number of individual investors have shown interest and EHPEA has gathered a list of potentially interested investors from Europe, Japan, USA, South Africa and others.

Objectives
Attract new foreign investments and international joint-ventures in the F&V sector

Activities
- Contact group of interested foreign investors in Europe, USA and Japan
- Evaluate reasons for low investments in F&V sector till date
- Provide concise information on options and challenges for investments in the F&V sector in Ethiopia
- Organise a workshop with selected investors aiming at providing specific information on investment climate, financing options and establish linkages with potential Ethiopian companies/investors
- Facilitate further bilateral contacts with Ethiopian partners
- Participation of Ethiopia at Fruit Logistika 2008

Outputs
- Relevant investment information compiled and disseminated
- Two workshops organized with interested foreign investors one for European market and one for Middle East market
- A number of concrete business plans for investments formulated

Partners
- EHPEA
- Export Promotion Department
- MoARD/MoTI
- Ethiopian Investment Agency
- Regional Investment Bureau's

Budget indication
€ 50.000

B Value Chain Analysis and market study for selected products and market windows

Background
Many studies and consultancy reports observe high potentials for the export of F&V from Ethiopia. However, most of these reports lack a solid empirical and quantitative basis. In addition, the mission observed that individual producers/exporters which have started export on a pilot scale, experience fierce competition, have only specific windows during which export in a certain market is profitable and experience in general small profit margins.

Objectives
Establish competitiveness of Ethiopian F&V for selected products and market windows

Activities
- Verification and participative selection of global identification of products and market windows with high competitiveness potential
  This mission suggests to include following PMC's in this activity:
  - Asparagus, okra, snow peas, baby corn and other exotics for the European market;
  - Few major fresh fruits and vegetables for high-value Middle east market
  - Processed fruits for the Middle East market
- Conduct detailed market and value chain analysis for high potential PMC's, including quantified value chain analysis, analysis of logistical and transport arrangements and options, on-site visits to identified markets
- Share results with stakeholders and potentials investors during investors workshop
- Organise study tour to verify findings and establish business contacts
- Organise a training to create awareness among stakeholders about fruits and vegetable supply chain management concepts, arrangements, methods and experiences.

Output
- Quantified analysis of competitiveness of selected high potential F&V product-market combinations

Partners
- EHPEA
- GDS
- EARI/Universities
- Ethiopian marketing/business consultants
- Fintrac/USAID
- MoARD/MoTI

Budget indication
€ 100.000

C Feasibility study refrigerated container transport to the Middle East

Background
Especially in F&V, costs of transportation are a crucial factor determining the competitive position in export markets. Airfreight is an option only for high-value products. The development of a refrigerated cool chain for relatively nearby markets such as the Middle-East could dramatically improve the competitive position of Ethiopia. Many private entrepreneurs expressed interest in exploring these options. Currently no detailed feasibility studies or pilot projects could be identified by the consultants.

Objectives
Assess the feasibility of a refrigerated transport chain from Ethiopia to the Middle East for selected fruits and vegetables.

Activities
- Conduct a detailed feasibility study through:
  - Interviews with transporters, technicians, exports, importers
  - Data collection on costs, challenges, technical issues and experiences (Marocco, Senegal etc.)
  - Value chain analysis based on refrigerated transportation
- Facilitate and initiate a pilot project with 1 or 2 interested private entrepreneurs

Output
- Report on feasibility of refrigerated transport for the Middle-East market and the conditions required for successful implementation
- Pilot project and related business plan formulated for a specific product for the Middle-East market

Partners
- EHPEA
- Ethiopian Shipping Lines, MAERSK etc.
- Ministry of Transport/MoTI
- 1-2 entrepreneurs
- Wageningen UR (AFSG / LEI)

Budget indication
€ 50.000 (excluding financing of pilot project)

D Pilot on development chain for processed fruits and vegetables

Background
Many of the consulted stakeholders state that Ethiopia has a high export potential for processed F&V to the European and especially the Middle East market. The existing private and public processing plants are currently operating below maximum capacity. This is partly due to poor supply chain organization (lack of sufficient produce) and partly because of inefficient operations and market development activities. Especially for processed fruits (juices, pineapples) export potentials are considered high.

Objectives
Facilitate development of processed industry through development of pilot processing supply chain

Activities
- Literature review on potentials of processed F&V in potential export markets
- Identification of private processing plant for establishment if pilot project
- Selection of product-market combination
- Formulation of business plan
- Organisation of supply chain with smallholder producers
- Start of pilot project

Output
- Pilot project on processing with small holder producers operational
- Lessons-learned shared with stakeholders in sector

Partners
- EHPEA
- Processing plant (Green Star/MERT)
- MoARD/MoTI

Budget indication
€ 50.000 (excluding financing of pilot project)

E Technical assistance in development appropriate fruit varieties

Background
Especially the development of the fruit sector is hampered by lack of appropriate varieties. In the vegetable sector international companies are active globally and good quality vegetable seeds can be obtained in Ethiopia. To enable a sustainable development of the fruit sector, it is necessary to develop research capacity in seed and planting material development, as well as facilitate the development of a private seed sector to attain commercial distribution.

Objectives
Establishment of public-private seed development program for fruits and vegetables in Ethiopia

Activities
- Detailed inventory of needs for variety and seedling development for selected fruits: mango, pineapple, avocado, banana, papaya, strawberry, passion fruit and grape vine.
- Inventory of on-going research and development initiatives in fruits seed development
- Identify interested and relevant private sector partners to engage in fruit seed development program
- Formulate a fruit seed research and development program

Output
- Public-private program on fruits seed development formulated and business plan developed
- Business plan for commercial tissue culture operation

Partners
- EARI
- MoARD
- National / international private sector partners
- Wageningen UR (CGN / PEDIGREA project?)

Budget indication
€ 50.000 (excluding financing of pilot project)

F Technical assistance in production management for quality fruits and vegetables

Background
Apart from the few commercial, export-oriented companies, technical knowledge about production and post-harvest handling of high quality fruits and vegetables in the sector is limited. In order to further develop the export potential of fruits and vegetables in Ethiopia sufficient and relevant up-to-date expertise and knowledge about practical fruit and vegetable production needs to be developed.

Objectives
Development of technical knowledge of production and post-harvest handling of selected fruits and vegetables

Activities
- Review current research and extension programs regarding fruits and vegetable production
- Formulation of appropriate institutional set-up for development and dissemination of technical knowledge
- Formulation of a prioritised list of topics for technical assistance in F&V sector
- Develop a research, capacity building and dissemination agenda based on the priority list
- Establishment and implementation of a research and technical assistance fund in the F&V sector (private companies can submit short-term practical research proposal, request for technical assistance etc.)

Output
- Capacity developed on F&V technical production and post-harvest aspects
- Research and technical assistance fund operational

Partners
- EHPEA
- EARI
- Jimma, Haremaya University (others?)

Budget indication
€ 100.000

The capacity building component of this proposal will be addressed by a proposed project, initiated by Jimma University and submitted to NUFFIC, addressing the capacity building in the Horticulture sector in Ethiopia. Apart from floriculture, the F&V sector has a prominent position in this proposal.

G Pilot project with small-holders out-growers arrangement and EUREPGAP implementation

Background
EUREPGAP is rapidly becoming a globally accepted synonym for quality management systems. Certification by EUREPGAP standards has become a prerequisite for producers who are participating in international supply chains or striving to do so. For domestic supply chains throughout the world, EUREPGAP is also increasingly becoming a minimum standard. Currently this standard is met by only a few large-scale growers/exporters in Ethiopia. So far, only a limited number of smallholders are involved in the F&V export sector. At many levels in the sector there is the wish to include smallholders in the further development of the export sector through out-grower arrangements. Specific activities are required to ensure that smallholder can comply to the EUREPGAP standards

Objectives
To develop a cost effective method for EurepGAP certification of smallholders

Activities
- Analysis of case studies on EurepGAP and smallholders in the F&V sector (Kenya)
- Analysis of options and approaches for existing farmers' unions and cooperatives to be linked to markets
- Formulation of pilot project for 1 commodity in the European market addressing issues as strengthening farmers' organisation, process of certification, EurepGAP registration program for smallholders and institutional setting
- Implementation of pilot project
- Evaluation of pilot
- Sharing results and make a plan for up-scaling

Output
- Pilot project resulting in smallholders being certified for EUREPGAP
- Lessons-learned for large-scale implementation of smallholders in F&V export

Partners
- EHPEA
- Farmers Cooperative Union
- PQPS
- NGO's
- Exporters/producers interested in starting/expanding out-growers arrangements

Budget indication
€ 150.000

In 2006 a regional workshop was organised in Nairobi to share experiences with EUREPGAP certification and smallholders. This seminar was attended by 5 persons from Ethiopia representing Plant Quarantine and Phytosanitary Services, Ethioflora,

TEPPO Agriculture and Trade, USAID/Fintrac, MoARD and Rift Valley Children and Women Association. The experiences gained will be used in this project.

Three priority issues identified by the mission and also of importance for the floriculture sector are already being addressed in the agenda of the Ethiopian-Dutch Partnership Programme:

- As stated earlier the issues of **capacity building** is being addressed in a request to NUFFIC, lead by Jimma University on behalf of EHPEA, MoTI and MoARD for support to develop a comprehensive capacity building program in the horticulture sector in Ethiopia.
- A workplan is developed for strengthening the **phytosanitary services** through capacity building of the Crop Protection Department for the period 2007 – 2009. This will encompass the following activities: staff recruitment and training, new arrangements for consignment based inspections at the airport, phytosanitary monitoring and surveillance, legislation for registration and control of pesticides and bio-pesticides and pre-shipment testing of residue levels.
- In the agenda of activities an activity has been included aiming at providing easy access to relevant and up-to-date **market information** about the European market for horticultural products. The F&V sector can benefit from the results of this activity. However, a specific action may be required addressing the Middle East market in particular.

Two activities of importance but not considered high priority in the short term:

- Raising awareness within Ethiopia about health aspects of including fruits and vegetables in the diet.
- Post-harvest handling in the domestic market

The following **priority setting** of activities has been proposed during the feedback session with some of the stakeholders:

Step 1:
B Value Chain Analysis and market study for selected products and market windows
C Feasibility study refrigerated container transport to the Middle East

Step 2:
A Investment workshops

Step 3:
Based on results of A, B and C setting priorities in implementing activities **D, E, F, G**

Annex 1 Literature

Anonymous, April 2003*, ETHIOPIA: Trade and Transformation Challenges,* Annex 8, Agriculture and trade, diagnostic trade integration study.

Cehmeda, D. (EPD), Hordofa, D. (EPD) and van Duijvenbode, A. (CBI), January 2005, *The juice of the economy? Export potential of Ethiopian Processed Fruits and Vegetables,* Addis Ababa

Ethiopian Investment Agency, April 2006, *Investment Opportunity Profile for the Production of Fruits and Vegetables in Ethiopia*, Addis Ababa

FAO, 2006, *F&V in Ethiopia*, Agriculture 21, june 2006
http://www.fao.org/ag/magazine/0606sp2.htm

F&V in Ethiopia - Data as of 1991 - http://lcweb2.loc.gov/cgi-bin/query/r?frd/cstdy:@field (DOCID+et0105)

Greenhalgh P. and Havis E., Natural Resources Institute, March 2005, *Feasibility Study on Assistance to the Export Horticulture Sector in Ethiopia,* United Kingdom

HortiNews, 2007, *Interview with Minister of Trade and Industry of the Federal Democratic Republic of Ethiopia, Mr Girma Birru.*

HortiNews, 2007 *EHPEA's President speaks to Horti-News*

Kubsa A., Desalegne P and Verschoor R., SNV, 2006, *Analysis of livelihood strategies for Arba Minch, Ethiopia,* Awassa

Ministry of Information, Press and Audiovisual Department, January 2006, *Ago-Industrial Potentials in Ethiopia*, Addis *Ababa*

Ministry of Agricultural and Rural Department, 2007?, *Development corridors' fruit and vegetables land use and production status,* Addis Ababa

Ministry of Agricultural and Rural Department, 2007?, *Short notes on the gaps and important intervention for the development of the Horticulture sector in Ethiopia,* Addis Ababa

Ministry of Agricultural and Rural Department, 2007?, *Fruit and vegetables development five years /2005/06-2009/10/target,* Addis Ababa

Parkin J., Jon Parkin Consultancy, February 2007, *Report on marketing trip February 2007*

Verschoor R. et al., June 2006 *Ethiopian Horticulture Development Strategy – Balanced growth strategy paper,* Wageningen, The Netherlands

Woldsadiq, W., Ministry of Agriculture and Rural Development, 2007?, *Horticulture development in the Smallholders' sector in Ethiopia*, Addis Ababa

Worldbank, 2004. Opportunities and challenges for developing high-value agricultural exports in Ethiopia.

Annex 2: Mission program

Sat.	Feb. 10	Jimma University - Mr.Dugumua
Mon.	Feb. 12	USAID - Ian Chesterman MoARD Production -Workafes Woldsadiq MoARD - Marketing - Solomon Tilahun Landbouw attache - Geert Westenbrink SNV - Rem Neefjes & Jurghen Koch
Tue.	Feb. 13	Prins Vegetable Ethiopia - Jan Prins in Ziway with vegetable production in greenhouse Lucy Ethiopian Flowers - Hans Cooijmans & Theo Koning potential F&V production Ethioflora - Mr. Mulugeta in Ziway - bean production Illantot - Ilan Liyhu near Mojo - strawberry production van Oers - Lake Koka - bean production
Wed.	Feb. 14	EHPEA - Tsegaye Abebe Johannes Agonafir - agriculture consultant MoARD - Head of Marketing Department - Aseffa Mulugeta GDS - Nebiyeleul Gedesse
Thu.	Feb. 15	Melkassar Research Insitute -Mr. Shimelis Green Star Food Company in Debre Zeit - Dawit Bekele and Wondossen Ayenew Genesis Farm - Gert van Putten in Debre Zeit
Fri.	Feb. 16	Ethiopian - Djibouti Railway Staion in Dire Dawa - Customs - Assefa Gonfa
Sat.	Feb. 17	Dire Dawa - production area bordering the city Haramaya University - Mr. Debele Alem Maya - production area near the city Komboldja - production area
Sun.	Feb. 18	travel to Nazareth
Mon.	Feb. 19	Upper Awash State Farm and Merti Processing Factory
Tue.	Feb. 20	Horticamp - Gerard Pothuis Piazza market, Mercato market and Bambi supermarket TeamPro - Mahalet Zwadneh & Bakker Barendrecht - Frank Brinkman IDE - Kebede Ayele Jon Parkin Consultancy - Jonathan Parkin & USAID - Ian Chestman Kaleb Services Farmers' House - Tesfaye T./Haimanot

Annex 3: Addresses of visited contacts

NAME COMPANY/INSTITUTION	CONTACT PERSON	TEL	EMAIL	PLACE	ADDRESS
Jimma University	Mr. Duguma				
KALEB Farmers House	Mr. Tesfaye	251-011 439 1459/ 439 3675 0911-203360	skaleb@ethionet.et Website: kafahouse.com	Addis Ababa	Akaka Kaliti sub-city, Kebele 10/11 House No 9999/1
van Oers	Mr. Tsegaye Abebe Mr. Mulugeta	0911-248751 0916580032		Lake Koka	
USAID	Mr. Ian Chesterman	251-011-3720060/61/62/63/64	IChesterman@fintrac.com	Addis Ababa	Ki-Ab Building, 4th Floor Alexander Pushkin Street (opposite South African Embassy) Kirkos Subycity, Kebele 23, House 1123
Landbouw attache	Mr. Geert Westenbrink	0911-306586	geert.westenbrink@minbuza.nl	Addis Ababa	
GDS	Mr. Nebiyeleul Gedesse	0911249358	ngessese@gds-llc.com	Addis Ababa	
Lucyflowers	Mr. Hans Cooymans & Mr. Theo Koning	0911178676 / 073-5944178	hans@lucyflowers.com	Netherlands	
SNV	Mr. Rem Neefjes Mr. Jurgen Koch	0114654386 / 0911232554 0911-226979	rneefjes@snvworld.org	Addis Ababa Addis Ababa	 Debre Zeit Road - Mekswel Square
MoARD	Mr. Solomon Tilahun - Marketing Mr. Workafes Woldsadiq - Production Mr. Assefa mulugeta - Marketing	0911364945 0115525595	stduga@yahoo.com		Mexico Avenue in Coffee Building Ministry of Agri - rural development
Ethiopian Horticulture Producers	Mr. Sisay		ehpea@ethionet.et		
and Exporters Association	Mr. Tsegaye Abebe	0911248751//0911254077			
Prins Vegetable Ethiopia	Mr. Jan Prins	0031653291951/00251911310877	post@prinsvdtorre.demon.nl	Zeway	Aan de weg van Mojo naar Zeway
Johannes Agonafir - consultant	Mr. Johannes Agonafir	0911665143 0911791182	yagonafir@yahoo.com agonafir@hotmail.com ethiopianchamber.com/acabt		
Haremaya University	Kebebe Zadiq	0915740458		Alem Maya	
Upper Awash agro industry & Merti					
Agro-processing	?	0911-201191		Upper Awash	near Global Hotel
Melkassar Research Institute	Mr. Shimelis	0911-756168			
Horticamp	Mr. Gerard Pothuis	0911412946			
International Development Enterprises (IDE)	Mr. Kebede Ayele	011-5517217/011-5519606 0911-401620/0911-401623	kbdayele@yahoo.com	Addis Ababa	Meskel Square, Endalkachew (Siemsens building) 3rd floor, room 3A
Ethioflora	Mr. Tsegaye Abebe Mr. Mulugeta	0911248751 0916580032	bnfzetf@ethionet.et	Zeway	
Green Star Food company	Mr. Dawit	251 - 911-219519		Debre Zeit	
Illantot	Mr. Ilian Liyhu			Mojo	
Genesis	Mr. van Putten / Mr. Bahailu	0911-225869		Debre Zeit	
TeamPro	Ms. Mahalet Zawdneh	0911-607952		Addis	
Ethiopian Djibouti Railway	Mr. Assefa Gonfa				