# Business opportunities in the

# Ethiopian Fruit and Vegetable Sector

Final version, February 2009

# Contents



**Authors**: Rolien Wiersinga and André de Jager
Wageningen University and Research Centre - LEI

agriculture, nature
and food quality

# Foreword

With pleasure I present to you the report “Business opportunities in the Ethiopian Fruit and Vegetable Sector”.

The Ministry of Agriculture, Nature and Food Quality in the Netherlands and the Agricultural Office in Addis Ababa noticed that there was a need, especially with Dutch companies, to have basic background information on the present situation and the potential of the Ethiopian fruit and vegetable sector. It is therefore that we have asked Wageningen University and Research Centre to conduct an independent analysis on the business opportunities.

Within four years the floriculture sector in Ethiopia has developed from almost nothing to a sector with 1000 hectares and more than 80 farms. This can be attributed to the favourable climate, an attractive investment package and a pro-active and supportive government. The export of fruit and vegetables is, compared to flowers, still small. However, the good growing conditions and the strong support from the government makes investing in fruit and vegetables in Ethiopia an option more than worthwhile to look into.

Please read this document as a ‘kick off’. Together with Ethiopian and other partners we will continue to work on the improvement of the information base of the Ethiopian fruit and vegetable sector.

Martin Olde Monnikhof
Deputy Director Trade and Industry
Ministry of Agriculture, Nature and
Food Quality

Geert Westenbrink
Agricultural Counsellor
Embassy of the Kingdom of
the Netherlands

# Executive summary

The horticultural sector in Ethiopia is growing strongly. Major part of this growth is created by investments in the floriculture sector. Recently more and more interest from the Dutch private sector is shown in the Ethiopian fruit and vegetable sector.
Export of fruit and vegetables has been limited but is now growing strongly with new investors coming in. Both in Europe and the Middle East a growing interest exists for products from Ethiopia. Presently, the main export products are fresh beans, strawberries, grapes, tomatoes, courgettes, peppers and fresh herbs. The Government of Ethiopia gives high priority to the development of the horticulture sector and in 2008 the Horticultural Development Agency has been established with a specific focus to promote and support the further development of the horticulture sector.

SWOT-summary:

| **Strengths:** | **Weaknesses:** |
|---|---|
| Climate | Constant high quality supply in sufficient quantities |
| Conducive government policies | Availability of varieties |
| Cost of production | Packaging |
| Geographic location | Cold Storage/logistics |
| Private security and safety | Technical Know-How |
| Private sector service provision | Research and extension |
| New initiatives | Input supply |
| Potentials for irrigation | Land Tenure |
| Transport | Market Information |
| Code of Practice in floriculture sector | Domestic market |
| | Banking |
| | Bureaucracy |
| | Communication |

| **Opportunities** | **Threats** |
|---|---|
| Demand in Europe and Middle East | Increased competition in European and Middle Eastern market |
| Demand for processed fruits and vegetables | Regional politics |
| Ecological and fair trade production | Stringent requirements on food safety and sustainability standards |

It is concluded that the further development of the Fruit and Vegetable sector in Ethiopia for export to Europe and the Middle East has good perspectives and provides interesting opportunities for foreign investors. Currently, many new companies are stepping in, in different parts of the country and conditions regarding land, cool chain and cargo appear to improve gradually. Yet, the sector is in its infant stages. Supportive conditions for doing business are not yet optimal, but are expected to improve in the near future.
For growers who consider starting operations in Ethiopia it is important to carefully select a location and ensure that the logistical and cool chain is properly organized on forehand.

For companies who consider sourcing from Ethiopia it is important to build good relations with (potential) growers, provide hands-on guidance and training and to invest in organizing the logistical supply chain well.

# 1 Introduction

The horticultural sector in Ethiopia is growing strongly. Major part of this growth is created by investments in the floriculture sector. Recently more and more interest from the Dutch private sector is shown in the Ethiopian fruits and vegetable sector. In the slipstream of the floricultural boom already more than ten, export fruit and vegetable producers have been established in Ethiopia, ranging from tomatoes to passion fruit and green beans to table grapes.

The Ethiopian government, private sector associations (EPHEA) and donors (USAID, SNV, CFC) have identified potentials for the further development of the fruit and vegetable sector in Ethiopia both for the domestic and export market. Also in the Ethiopian-Netherlands Horticultural Partnership, technical support to the development of the fruit 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.

This report is based on experiences gathered during missions to Ethiopia, literature research and interviews with Ethiopian and Dutch companies on their experiences and ideas about opportunities for the Dutch private sector in the Ethiopian fruit and vegetable sector.

This report provides information about the Ethiopian horticultural sector, including information on growers, traders, retailers and service providers. The aim of the study is to explore business opportunities for Dutch entrepreneurs and assist in investment decisions.

**Box 1: World record-breaking relationship**

Another area that is marked by a successful cooperation between Ethiopians and the Dutch is athletics. This collaboration began in 1983 when Dutch sports manager Jos Hermens started scouting Ethiopian athletes. In 1990 he met the talented long distance runner Haile Gebreselassie. Their encounter was the kick-off to a phenomenal career that resulted in numerous medals, titles and world records. It also meant the beginning of a strong cooperation between Ethiopian athletes and Dutch managers. Haile told the media he would have never come so far without the support of Hermens. The two became friends-for-life.

Gebreselassie even built a house in Addis Ababa for his friend Jos. What is the background to this fertile cooperation and good friendship? Or, to put it differently, what characterizes the good relationship between Ethiopians and the Dutch? According to Hermens it takes time before the relation becomes a good one: ‘it generally takes up to one or two years before Ethiopian athletes and Dutch managers go on well.

There is a reason for this: the Dutch can be very straightforward. This directness sometimes shocks people. Ethiopians, on the other hand, keep a distance for a while. Before they come to an agreement, for instance, they tend to go into long negotiations. Furthermore, Ethiopians can act proud and stubborn, which is I think due to their religious background as well as the fact of not being colonized by an imperialist power. They share the stubbornness with the Dutch, however. This is where they match and sometimes collide.’ Hermens emphasizes Ethiopians and Dutch go along well when they know each other’s particularities: ‘As soon as the Dutch understand Ethiopians and Ethiopians understand the Dutch, the communication becomes very uncomplicated, friendly and, above all, respectful. I think that, in the end, really amplifies our mutual friendship: respect.’

(Text: Bram Wicherink)

# 2 Country profile

Ethiopia harbours an extraordinarily rich agro-biodiversity resulting from its geography, climatic differences, ethnic diversity and strong food culture. Unique is the great variation in climates, due to the great variation in altitude ranging from sea level up to 4500 meters. Altitudes between 500 metres (normally warm) and 2600 metres (cool nights and mild day temperatures), and all altitudes in between, are common. This together with ample possibilities for irrigation makes it possible that a large variety of crops can be grown. The hot lowlands are suitable for crops like sugarcane, palm oil, maize, cotton and sesame. On the higher altitudes crops like coffee, tea, teff and roses can be grown and on even higher altitudes wheat, barley and linseed. The variation in climate also makes it possible to grow all types of fruits and vegetables.

Besides the climatic conditions also the investment conditions in Ethiopia are important. The GoE is giving priority to the horticultural sector and other export products like leather, oilseeds and coffee, and as a result the investment package offered is attractive. It includes amongst others a tax holiday and favourable financing possibilities and active assistance for obtaining land. Land can be leased on long-term at very favourable conditions, labour is cheap and loans can be obtained at advantageous terms. Other important advantages of Ethiopia are the personal safety and the fact that government offices work according to procedures. This results in a relatively low level of corruption compared to other African countries.

The floriculture sector has grown within 5 year from almost nothing to more than 1000 hectares at the end of 2008. At the moment mostly roses are grown but summer flowers show a rapid growth. Recently also lilies and freesias are being cultivated. In addition, the climatic conditions are ideal for the production of plant cuttings; of which at the moment 5 international companies operate in Ethiopia.

Export of fruit and vegetables has been limited but is now growing strongly with new investors coming in. Both in Europe and the Middle East a growing interest exists for products from Ethiopia. Presently, the main export products are fresh beans, strawberries, grapes, tomatoes, courgettes, peppers and fresh herbs. In potential almost all types of fruits & vegetables can be grown in Ethiopia. The Government of Ethiopia gives high priority to the development of the horticulture sector and in 2008 the Horticultural Development Agency has been established with a specific focus to promote and support the further development of the horticulture sector.

Other fast growing export sectors are oilseeds and dry beans. Of course coffee remains important, with Ethiopia being the motherland of coffee. Furthermore, the meat and leather sectors are developing rapidly. In addition, the demand for dairy and poultry products in the local market is soaring and good business opportunities exist in these sectors. Other sectors, like sugar, cotton, tea and biofuel crops enjoy growing interest from foreign investors.

Country facts:

- Full name: Federal Democratic Republic of Ethiopia
- Population: 83.1 million
- Capital: Addis Ababa
- Area: 1.13 million sq km (437,794 sq miles)
- Major languages: Amharic, Oromo, Tigrinya, Somali
- Major religions: Christianity, Islam
- Life expectancy: 52 years (men), 54 years (women)
- Adult literacy rate: 36%
- Monetary unit: 1 Ethiopian Birr (ETB) = 100 cents
- 1 € = 14.2 ETB; 1US$ = 11.1 ETB; 1 £ = 16.1 ETB (24/2/2009)
- Main exports: Coffee, hides, oilseeds, flowers
- Major trading partners: Saudi Arabia, Djibouti, Sudan, US, Germany, the Netherlands, China, Japan, Italy and India
- GDP per capita: 600 US$ (at PPP)
- International dialling code: +251
- Standard Time +0300 UTC
- Calendar: Julian (day, time and year is different than the Western Gregorian)

**Geography**

Ethiopia is twice the size of France and 27 times the Netherlands. It shares borders with Djibouti, Eritrea, Kenya, Somalia and Sudan. It is landlocked. Ethiopia is divided into 9 ethnic-based regions plus the capital, Addis Ababa and the city administration of Dire Dawa. Map 1 shows Ethiopia with its administrative regions and zones.

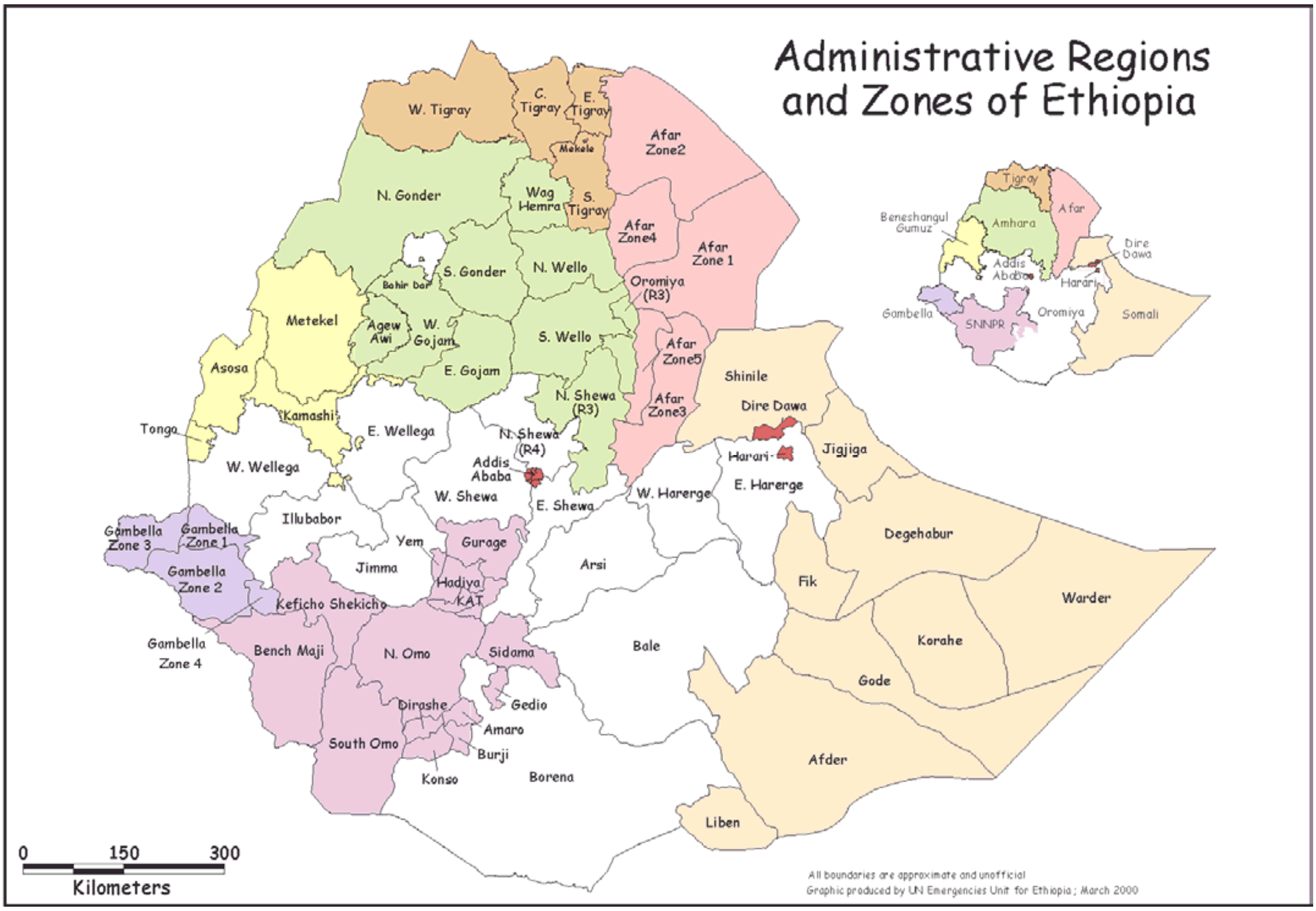
Ethiopia is a country of great geographic diversity. The topographical differences result in different climatic zones which make Ethiopia an attractive country for different kinds of agricultural production systems. About 60% of the surface is suitable for agriculture. Also the amount of land which can be irrigated is large, but at the moment only a small part is actually utilized.

The geographical differences result in three climatic zones:

- cool zone, above 2400 meters, day temperatures ranging from freezing to 16°C
- temperate zone, 1500 – 2400 meters, day temperatures from 16 – 30°C
- hot zone, below 1500 meters, day temperatures above 27°C

Ethiopia usually has two different rainy seasons. The long rainy season, Meher, takes place from mid-June to mid-September. During February to March some regions have a short rainy season, the Belg. The remaining months are mostly dry.

Figure 1: Map of Ethiopia




**Politics**

Ethiopia is a federal parliamentary republic with executive powers vested in the Prime Minister (Meles Zenawi). The Head of state, a largely ceremonial role, is President Girma Wolde-Giorgis. Elections in 1995 and 2000 gave the Ethiopian People's Revolutionary Democratic Front (EPRDF) an overwhelming majority of seats in the national parliament. General elections held in 2005 revealed a sharp increase in public support for opposition parties, but the EPRDF retained power. Next elections are scheduled for 2010. The environment for opposition parties and civil society remains challenging due to stricter laws covering media and non-governmental organisations. Ethiopia’s relations with Eritrea will continue to dominate the foreign policy agenda. Although there are risks of a new conflict, a continued stalemate is still the most likely scenario. Somalia will remain a source of tension in the Horn of Africa, and Ethiopia will continue to be involved in order to protect its regional interests and domestic security.

**Human rights**
The 1994 Ethiopian Constitution and many other laws offer strong protection for human rights, but these rights do not always translate into practice. Since the controversial multi-party elections of 2005, respect of human rights in Ethiopia has deteriorated.

**Poverty**
Ethiopia is one of the poorest countries in the world. Ethiopia ranks 170 out of 177 countries in the 2006 United Nations Human Development Report and 31 million people live on less than half a dollar a day. Food security is a major challenge in the more marginal parts of the country every year: 15 million people are at risk from food insecurity, and over 8 million people are classed as chronically food insecure. In recent years, however economic growth has been well above population growth, which can lead to reduction in poverty. The Government of Ethiopia is implementing a plan for accelerated and sustained development to end poverty (PASDEP) assisted by donors and which is based upon Ethiopia's strategy of agriculture-led industrialisation.

**Economy**
Ethiopia is experiencing a remarkable economic growth. Ethiopia's economy had an average annual growth of more than 11% over the last four years and 2009 is expected to see a growth rate of around 7%. Growth benefited from public investments in infrastructure, supported by donor funding. Ethiopia remains highly vulnerable to droughts, but resilience is growing over time, assisted by institutional reform and ongoing extension of roads and markets. However, inflation has been in double digit figures for the last three years, with increased food prices. Inflation is now being driven by fuel prices, currency devaluation, the spillover from the construction boom and (during 2008 in particular), rapidly rising food prices. Over the longer term, sustained growth will require enhanced efforts to strengthen agricultural productivity and improve the climate for private investment. The Ethiopian government strongly promotes domestic and foreign investment in the horticulture sector and is working hard to further improve the enabling environment. Table 1 shows the business climate of Ethiopia compared to other nearby African countries.

Table 1: 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*.

Agriculture accounts for nearly half the country's GDP, 60% of its exports and 80% of total employment. Livelihoods are predominantly based on agriculture, which accounts for 45% of national income and over 90% of export earnings. The agricultural sector accounts for 55% to the Gross Domestic Product. Ethiopia produces mainly a variety of cereals, pulses, oilseeds, and coffee. Grains are the most important field crops and the main element in the Ethiopian diet 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.

# 3 Institutional environment

Production and processing of horticultural crops, vegetables and fruits have been placed by the Government of Ethiopia in the list of high priority areas and various incentives have been provided for investors. 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 (www.investethiopia.org):

**Customs Duty Exemption**

- A 100 percent exemption from 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. The same applies 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 import customs duties and other taxes levied on imports may be transferred to investors enjoying similar privileges;
- Exemption 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 and Loss Carry forward**

- 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 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%.
- 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.

**Remittance of Funds and Investment Guarantee and Protection**

Foreign investors are entitled to make remittances out of Ethiopia (from e.g. profits, interests and proceedings from sale of an enterprise) in convertible foreign currency at the prevailing rate of exchange on the date of remittance. In Ethiopia both the Constitution and the investment Code protect private property. Ethiopia is also a member of MIGA (Multilateral Investment Guarantee Agency), which issues guarantees against non-commercial risks to enterprises that invest in signatory countries. Besides, Ethiopia has signed bilateral investment promotion and protection treaties BITs (Bilateral Investment Treaties) with a number of countries.

**Horticultural Development Agency**

To boost the horticultural sector further The Ethiopian Horticulture Development Agency has been established June 6th, 2008, as an autonomous Federal Government Agency under the Ministry of Agriculture. Its objectives are:

1. To ensure the fast and sustainable growth of horticultural production and productivity;
2. To facilitate the export of diversified horticulture products which meet internal food safety standards; and
3. To coordinate the development of supporting services.

**Ethiopia Horticulture Producers and Exporters Association**

The Ethiopia Horticulture Producers and Exporters Association (EHPEA) has been established in 2002 to facilitate the private sector horticultural exports. At the moment there are more than 60 members. It is a legally registered organization. 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. EHPEA implements, in close consultation with the Government of Ethiopia and other stakeholders, a Code of Practice for the floriculture sector. This code of practice provides an excellent basis for the establishment of a sustainable fruit and vegetable sector (www.ehpea.org.et).

**Government Agencies**

A number of agencies within the Ministry of Trade and Industry (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.
- 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.
- Quality and Standards Authority of Ethiopia (QSAE)
  The QSAE is responsible for the formulation of national standards and undertakes activities such as promoting and assisting in quality management practices, co-ordination of standardisation, promoting reliability of testing laboratories etc.

**Banking**

The Ethiopian Development Bank (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. This loan facility which has been instrumental in the quick development of the floriculture sector, till date has hardly been used by investors in the F&V sector.

Different financial institutions in Ethiopia provide short, medium and long-term development credits. For more information, please refer to the Guide “Investing in the agricultural sector of Ethiopia”, published by EIA and supported by the Netherlands Ministry of Agriculture, Nature and Food Quality.

The regulation of the banking system presents a major constraint. There is no free exchange of foreign exchange, which hampers international financial transactions. 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. Dutch importers have also underlined the problem of banking.

**Private Sector Support Services**

Due to the rapid growth of the floriculture sector, the number of private sector support services relevant to the F&V sector has increased in recent years: horticulture input suppliers, cold storage technology services, fertigation inputs and technology, greenhouse construction, horticulture consultancy services, etc.

**Knowledge, skills and entrepreneurship**

The traditional F&V sector lags behind compared to most producing countries in its agronomic practices. In part, this is because both state farms and domestic, private sector operations do not give sufficient attention to the right technology and expertise required. Further, there has been very little formal research to overcome problems of low genetic potential; the 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.

Producers and exporters have complained of a lack of know-how in activities throughout the supply chain, including knowledge of production planning, post-harvest handling and processing practices. Low-level technology, knowledge of specifications and codes of practice, knowledge of markets and marketing and lack of promotion activities show additional challenges. Understanding of the supply chain functioning, the involved actors, activities and responsibilities is limited. Next to lack of know-how on both production and marketing aspects, importers complain about the low level of service provision.

The current mentality of doing business and the labour ethos at times does not live up to the expectations of the importers. In general, the level of entrepreneurship is low. Importers indicate that they find it difficult to find the right partner in Ethiopia. On the other hand it is observed that in general Ethiopian supervisory and management staff is eager to learn and works accurately.

A major effort is being undertaken to improve the knowledge and skills in the coming years. Jimma University, jointly with PTC+ (Practical Training Centre) and Wageningen University and Research Centre in the Netherlands is bringing the Horticulture Education in line with the requirements of a competitive and sustainable export sector. Next to that, EHPEA has started with practical training courses for existing farm staff and the Horticulture Development Agency in cooperation with EHPEA plans to start a Horticulture Practical Training Centre.

**Box 2: Jimma University College of Agriculture and Veterinary Medicine: grower of horticultural expertise**

The campus of the Jimma University College of Agriculture and Veterinary Medicine (JUCAVM) looks as green as one might expect from an agricultural university. Located at a fertile spot at a 346-kilometre distance southwest of Addis Ababa and surrounded by greens and well kept gardens the college breathes an air of abundance. Apart from a pleasant environment, JUCAVM offers Ethiopia's most recognized horticultural expertise.

JUCAVM has two schools, eleven departments, over 2.000 students and 113 staff members. The college has gained a reputation of being the scientific focal point to stakeholders in agriculture, natural resources, and veterinary medicine. Driven by the horticultural boom in Ethiopia, JUCAVM's Department of Horticulture renewed its MSc programme with the introduction of competence-based education.

It is one of the major achievements in the project 'Capacity Building for Sustainable Development of Horticulture', a program funded by The Netherlands Organization for International Cooperation in Higher Education (NUFFIC) in partnership with the Ethiopian Horticultural Producer Exporters Association (EPHEA), The Ministry of Trade and Industry (MoTI), the Ministry of Agriculture and Rural Development (MoARD), JUCAVM, and the Netherlands' Wageningen University and Practical Training Center. The programs primary objective lies in meeting the standards demanded by the international markets. It attempts to educate competent staff for the horticultural staff for all levels, from technicians up to managers. The overall ambition is to contribute to a sustainable development of a competitive horticultural industry in Ethiopia.

JUCAVM Vice-Dean Fikre Lemessa is very proud of the university's achievements. He states his university offers a good contribution to the horticultural sector: 'we are known as an institute that educates students with a decent reputation. I hold our philosophy, which is a competence based and demand driven education, as a principal element in the quality we offer.' As an institute JUCAVM is deeply rooted in the horticultural industry. Lemessa: 'we've got a strong linkage and a good network with the industry. For our students we aspire this by working with a community-based program. The practical training at farms level is crucial in our curriculum.' To meet the demand for knowledge within the expanded horticultural sector, JUCAVM is now in the process of putting up a centre of excellence in horticulture training, research and community outreach.

(Text: Bram Wicherink)

**Communication**
Ethiopia's communication system is relatively poor. The mobile phone network is over-stressed and e-mail/internet connections are relatively slow. This is regarded as a considerable challenge for doing business in Ethiopia.

**Land**
In Ethiopia, land is public property and belongs to the State. It cannot be bought but it can be leased for a certain number of years. The lease time differs between the different regional states. By international standards land cost of lease are very low.

The security of land tenure is perceived as an important constraint to the development of horticultural production. 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. On the other hand, government is pressing investors to start cultivation of land, once the land has been given out. This to discourage speculation and assure land is being utilized for the envisaged objective.

**Market information**
International market information for high-quality, export F&V is highly specialized. Strong partnerships or trade relations between producers, processors and wholesalers normally prevail. Successful companies in the Ethiopian F&V sector most commonly produce directly for wholesalers or even directly to supermarkets, or have their own processing plants. This appears to be the preferred strategy in Ethiopia. Issues that are addressed in these market arrangements include volumes, varieties, seasonality and quality requirements. The competitive advantage of Ethiopia compared to countries like Egypt, Tunesia, Marocco and Kenya is crucial in this.

The performance of the smaller scale fruit and vegetable growers and exporters aimed at the more traditional, close by markets in Djibouti and Yemen is not 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.

**Foreign investments**
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. This has already resulted in a large boom in the floriculture sector and now also an increasing number of entrepreneurs have made investments in the fruit and vegetable sub-sectors for the development of export production for high quality markets in Europe, North America and the Middle East.

The fruits and vegetable market requires high food safety standards, either defined by national regulation or (associations of) supermarkets. The Ethiopian QSAE currently lacks facilities for residue testing (MRL laboratory), but a private laboratory is investigating opportunities in this field.

# 4 Ethiopian Fruit and Vegetable Production

## 4.1 Cultivation zones

The elevation levels in Ethiopia are diverse (see figure below). Addis Ababa is located at approximately 2,300 masl. Variation in temperature is driven mostly by elevation. Because of Ethiopia's location near the equator, seasonal changes in day length and incoming solar radiation are minimal and, consequently, have little impact on average temperatures.

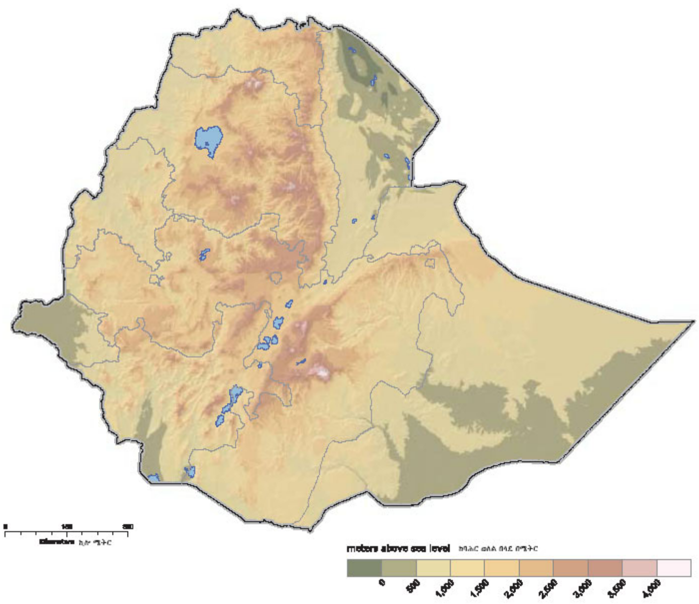



Figure 1: Elevation levels in Ethiopia (CSA, 2006)

Rainfall varies throughout the country, not only spatially but also temporally. Some parts of the western highlands experience rainfall for most of the year (March-October), while most of the rest of the country experiences rainfall within either the main rainy season (roughly July through Sept) and possibly also the short rains (roughly March through May). The western highlands have particularly high rainfall, averaging over 1,200 millimetres annually in many areas. Rainfall is lower with decreasing elevation, especially towards the East. Most of the eastern lowland areas are unsuitable for crop production because of lack of rainfall. Figure 2 shows the average annual rainfall over the past 35 years.

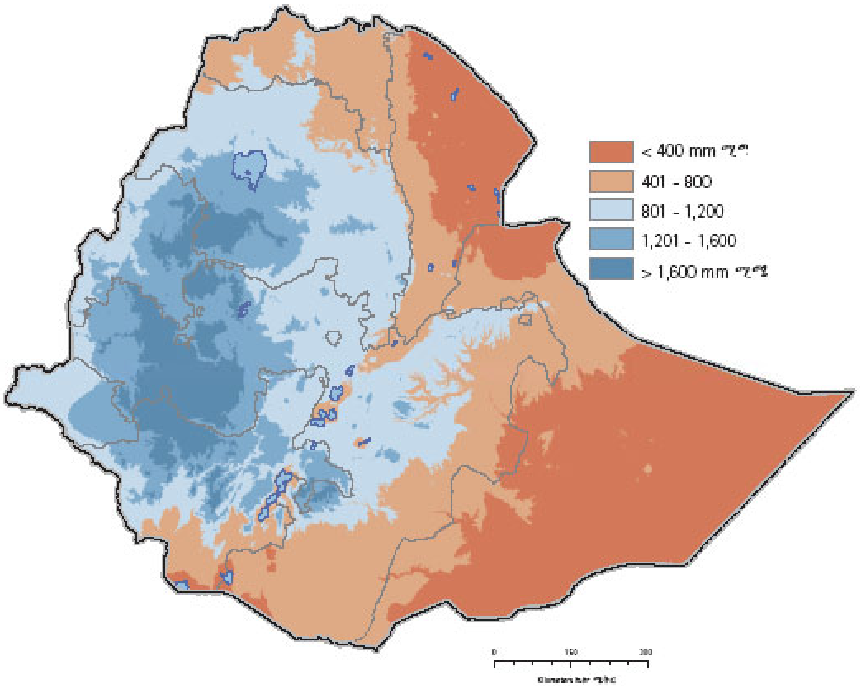



Figure 2: Annual rainfall in Ethiopia (CSA, 2006)

The major growing seasons in Ethiopia are associated with annual rainfall patterns. Most areas in the country experience both the long and short rains with the exception of some areas in the northwest. In the north, long rains tend to fall earlier, around the end of June, while in the south, they start as late as October. Although most crop production in the highlands is associated with the long rains, many communities depend on the short season to meet their food needs. The south western highlands get more than seven months of heavy rainfall, while the eastern lowlands get less than two months.

The length of growing period is based on the number of days with a mean daily temperature above 5°C and with available water (from precipitation or stored soil moisture) in excess of half the potential evapotranspiration. It is important to note, however, that the potential for irrigated agriculture is not reflected here. This potential is huge. Estimates state that only 3% of the potentially irrigable land is utilized. Major development opportunities are delineated near Bahir Dar, Makelle and Awassa and in the Central Rift Valley.

Vegetables for export are in general grown under irrigation with the main crop being produced in the dry season which starts in September-October and last until March. This coincides with the winter in Europe which gives Ethiopia an attractive competitive position.

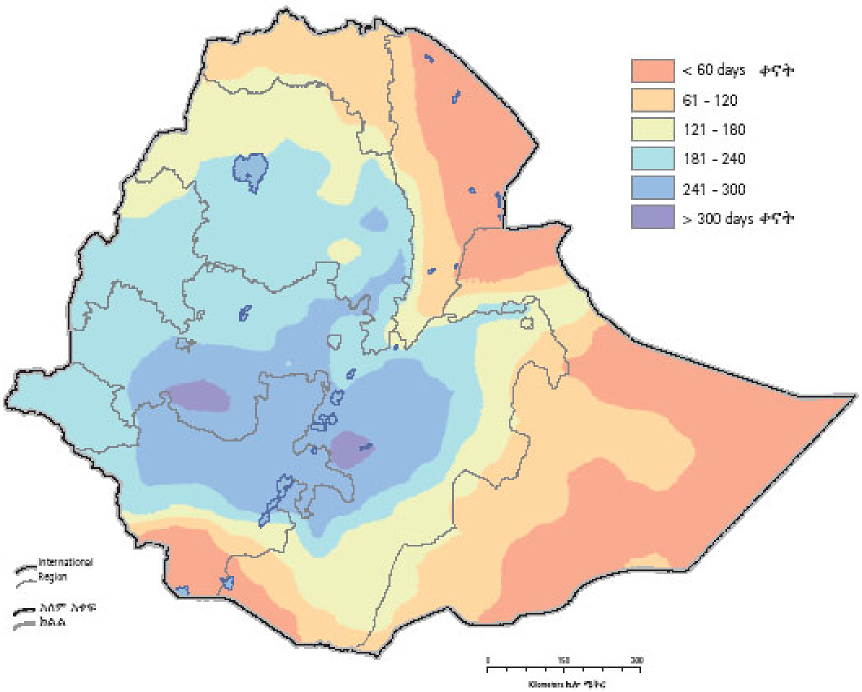



Figure 3: length of growing period per year in Ethiopia (CSA, 2006)

The Leptosol soils (29.8% of total land area) are mostly found in the north, are very shallow (< 30 cm), and have somewhat limited agricultural potential. Nitosols (12.5%) are mostly found in the west and are deep, well-drained soils. Despite low pH and low levels of phosphorus, they have relatively good agricultural potential. Vertisols (10%) have wide distribution; are heavy, black clay soils that are difficult to work; and have poor drainage. Although they have good chemical properties, their use is limited due to water-logging. Gypsisols (7.6%) in the eastern lowlands have limited agricultural potential.

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. The major fruits and vegetables growing areas of the country are summarized as follows (see also figure 1, p. 8):

- East Hararghe (eastern part of the country) with vegetables dominating,
- East Shewa (Central Ethiopia in Oromia Regional State) produces both fruits and vegetables including tomato, green beans, orange, mandarin, papaya
- West Shewa (central Ethiopia in Oromia Regional State) which is good for producing tomato and mango fruits
- 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 Wolaita and Sidama zones, are good producers of banana, avocado, pineapple, papaya in various districts.

- Dire Dawa and Harari (eastern Ethiopia) are also well known production and supply areas of both fruits and vegetables.
- South Tigray and West Gojam regions of Amhara.

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. In addition, the regional governments have made land available for horticulture purposes close to the regional capitals of Bahir Dar (Amhara), Makelle (Tigray) and Awassa (SNNPR), with good irrigation possibilities. Additional incentive packages are provided by these regional governments for first movers.

## 4.2 Production

The number of small-scale producers involved in horticulture is estimated at 5.7 million farmers. Few smallholder farmers are engaged in outgrowers arrangements and some farmers cooperative unions have been established.

The past five years have seen a major change in government policies towards the horticulture sector, reflecting efforts to redirect the economy away from centralized planning to a more liberalized economy. The Government of Ethiopia increasingly considers the private sector as the engine for economic growth and the catalyst for employment creation and export expansion. As a result private companies were allowed and facilitated with an array of incentives to engage in the sector. In the fruit and vegetable sector current production is dominated by two state farms, namely the Upper Awash Agro-Industry Enterprise (UAAIE) and the Horticulture Development Enterprise (HDE), both are currently in the process of being privatized. Alongside the state companies a number of private sector companies are involved in production, processing and export of vegetable products. Major crops in fruits and vegetables and their production trends are presented in annex 3.

*Vegetables*
Small-scale farmers produce 2.1 million tonnes of vegetables from 260 thousand ha while the State Farms produce 18 thousand tonnes from 880 ha. The supply of vegetables for the European market comprises predominantly green “bobby” beans. There are two private exporters cultivating around 225 ha of green beans each with outgrowing arrangements with a limited number of farmers in their vicinity. The current production of green beans relies on surface or furrow irrigation. A joint venture near Koka was the first to make the considerable investment in drip irrigation. Van Oers Import and Ethio-Flora have been granted PSOM contribution in 2004 to set up the production, processing and packing of green beans for export to the Netherlands. The state farms have reduced their produce range significantly over the past years and big chunks of its land near Ziway have been leased out for floriculture or are for sale. Increasing number of investments and experiments are undertaken by private companies to produce peas, mangetouts, cherry tomatoes and asparagus for export to the EU market. Growers in Southern Ethiopia have also successfully started herb production, partly in greenhouses. Also a Dutch grower has already two years experience growing a wide range of vegetables of excellent quality in greenhouses

*Fruits*

Total fruit production is almost 500 thousand tonnes, of which the State Farms account for approximately 10% of production. 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 produced in competing countries and are usually unfit for further processing. Upper Awash has a plantation of mangos, mainly for export and produces mango seedlings for sale. The company Green Focus allocated 270 hectares for mango production in Wollega and plans to cultivate 2,000 hectares more of it in the coming three years and also plans to build an agro-processing plant. However 500 farmers from seven kebeles resettled on the same farmland, halting Green Focus' plans. A national committee was established to look into the case and come up with a possible solution.

In the Chencha highlands 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 scattered and has been unstable over the past years, which causes a pineapple drying plant near Nazareth to function below its production capacity.

In addition to the export of relatively low value fruits, recently a number of trials are undertaken to produce more high value crops for export and to access new or more attractive fruits markets (i.e. grapes, avocado, passion fruit). A foreign strawberry grower ventured into the drip irrigated production of this fruit in Ethiopia mainly for the fresh export to the EU market. The Netherlands is now successfully importing strawberries from Ethiopia. The fruits have a high brix level and are harvested 7 days a week. Table grape production has started around Mojo and plans exist to expand to areas in the North of the country. Foreign investors have also come to Ethiopia to start with avocado and passion fruit production and processing, mainly on former state owned plantations.

**Box 3: Emerging Markets: Almeta Impex PLC and Jittu Horticulture PLC**

One of the first explorers in the sector is Almeta Impex PLC. The company's horticultural core business lies in fruits, vegetables and fresh herbs. General manager Mesfin Teshome explicates business is going well: 'we started three years ago in Koka and we are now growing several diversities on our 100 ha-farm in Koka: 17 ha of strawberries, 30 ha of wine and table grapes, 15 ha of fresh herbs and the remaining is cultivated with vegetables like chillies, peas and fine beans.' His company is ready for expansion: 'we have a 500 ha plot in Awasa that will be cultivated with vegetables and fruits like passion fruits, pomegranate, grapes and avocado.' Almeta focuses on the European market (60%) and Middle Eastern and Russian consumers (40%). Teshome hopes the products will become available for locals as well: 'as for now these products are too exclusive and thus too expensive for the local population. But in the future I hope Ethiopians will be able to consume more.' In order to improve and maintain quality he stresses the importance of technological expertise: 'capable manpower is a crucial factor in our business. We therefore cooperate with the Jimma University and several foreign consultants. I'm looking for a partnership with new investors. Wouldn't any Dutch people be interested?'

A Dutchman hugely involved in Ethiopia's opportunities is Jan Prins. Prins is Managing Director with Jittu Horticulture PLC, a company owned by business magnate Sheikh Al Amoudi. Jittu currently flies 30 to 50 tons of mainly vegetables to Dubai, every week. It will expand to 200 tons. Prins: 'there is a big demand for high-quality crops in the Middle East. The main quantity of our production goes to a purchaser in Dubai. This client gives us orders that are based on a weekly schedule, which makes our business very dynamic but also rigid in a way. We have to sow and harvest on a weekly rotation timetable.' Jittu's target is to cultivate 80 diversities consisting of e.g. several types of tomato, salad, artichokes and pepper. In the fruit segment the focus lies on melon, strawberries and blackberries. The company has 3.000 ha land available in Awassa to meet its objectives.

Text: Bram Wicherink

# 5 Post harvest

**Packaging**
Most of the available packing material in Ethiopia currently does not meet the required standards. Therefore most vegetable export growers import there packing material from the Netherlands or Israel. A project to improve the quality of packing material is presently carried out by the International Trade Centre (ITC) in Geneva and CBI from the Netherlands. Also it is encouraging to note that several new companies have started producing packing material.

**Cold storage**
Foreign companies have offices (consulting) in Ethiopia and are able to install cold storage facilities and provide maintenance and repair services.

In the fruits and vegetables sector, there are two privately owned cold stores in Ethiopia, namely the Ethio-Flora and Tippu Valley cold stores in Ziway. In the public sector, Et-Fruit and the two state enterprises have cold store operations. The stores are not designed to rapidly reduce field heat and are not of a sufficiently high standard.

There is 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. In addition, Bahir Dar and Makelle are preparing cold store facilities at their respective airports. The regional governments project that in time direct flights will supply the European and Middle Eastern markets.

**Fresh Consolidation Centres**
Different organizations or institutions in Ethiopia are considering big(ger) central placed facilities where activities like sorting, grading, packaging, pre-cooling, storage, palletizing and loading of containers can be organized through combining different flows of products from different origin and growers. Logistic organizations like Ethiopian Shipping Lines and Maersk are considering this option, but also organizations like OASIS and a Joint Venture including Flora Holland and v.d. Put, Ethiopian Perishable Logistics. In addition Ethiopian Airlines is planning to start constructing a complete new 'state-of-the-art' perishable cargo centre at the airport in 2009 (see also box 4).

**Processing**
In Ethiopia, the number of fruits and vegetables processing industries is limited. Currently, there are only 5 fruit and vegetable processing plants in the country. 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 at the domestic markets.

The Merti Fruits and Vegetable Processing plant (HACCP certified) has a total processing capacity that could reach 5,000 tons per year. At present it is utilizing about 50% of this capacity. Green Star is a privately foreign owned enterprise focusing on food processing operations.

The factory is working at below capacity due to a lack of sufficient and regular supply of F&V. The factory is in the process of HACPP certification.

The Dutch company Africa Juice is planning to start processing passion fruit and mango into export quality juices, concentrates and purees. The company sees good opportunities in growing passion fruit in Ethiopia due to its relatively uniform climate and noticed an increased market demand for passion fruit juice. The first juice delivery is planned for the end of 2009. Mango juice is being produced in Sabeeta. The used mango concentrate and flesh parts are currently imported from India.

The company Ecological Products of Ethiopia (Ecopia) produces, processes and markets fruits (mango, pineapple, strawberry) into jams and juices and also dries fruits. Their major market is local supermarkets and hotels.

**Phytosanitary inspection and custom control**

In total there are five quarantine stations, at Bole International Airport (near Addis Ababa), Dire Dawa, Moyale, Nazaret and in Metema. The Ethiopian phytosanitary services are currently under restructuring and capacity building is taking place.

The quarantine regulation in Ethiopia states that plants and plant products exported from the country have to be inspected and accompanied by a phytosanitary certificate. The production of horticultural products is currently inspected during the growing stage. Visiting all export growers on a regular basis to ensure compliance with international phytosanitary standards and regulations is occasionally taking place by the Plant Quarantine Team of the Animal and Plant Health Regulatory Department (APHRD). Checks are done at random at the farms and the farmer is doing the inspection him/herself, based on information received from the Ministry of Agriculture.

Each inspection visit is concluded with an inspection report. Most exporters employ handling officers who ensure that the export consignments are send with the proper documentation, airway bill and phytosanitary certificate. The phytosanitary certificate is prepared on the basis of specifications of the consignment phoned to the handling officer from the grower's production place .Customs control can be done at the farm by customs officers. The container can therefore be sealed at the farm. Ethiopia doesn't levy export tax for horticultural products. Digitization of the phytosanitary procedures is being discussed at the moment and the Dutch CLIENT package has been proposed as the preferred system.

# 6 Transportation

**Air**
Bole Airport is the only airport in Ethiopia that handles international flights. Bahir Dar, Dire Dawa, Gonder, Makelle, and Arba Minch have airports capable of handling international traffic but, as yet, no international flights use these destinations. Ethiopian airlines had a good cargo facility with a cooling facility for cargo pallets. A constraint at the moment is the building of pallets, regularly causing long queues of trucks waiting to be off loaded. As mentioned earlier, Ethiopian Airlines will start building a new Cargo Center at Bole airport in 2009.

In Ethiopia the prices of air freight to Europe are more or less comparable to Kenya, ranging from $1.75 to $2.05 per kg. Air freight rates to the Middle East average between $0.65 to $0.75 per kg. Prices for to the Middle East are considered attractive, mainly due to overcapacity.

Ethiopian Airlines operates full freighters to Liege, Belgium. In the coming 2008-2009 high season (November – March) Ethiopian Airlines plans to operate a Boeing 747 and they have purchased two MD-11 aircraft expected to start operating in the near future. Space is available on commercial passenger flights is available and growing (KLM, Ethiopian Airlines, BA, Lufthansa, Egypt Air, Emirates). Recently, Emirates has started direct cargo flights on Amsterdam. It is expected that by March Emirates flies twice a week.

There are a good number of forwarding companies providing services in booking and arranging cargo-space, one company also offers ‘pick up’ service from the farm. The Government of Ethiopia has an ‘open skies’ policy regarding to cargo.

**Sea**
The development of a refrigerated cool chain for relatively nearby markets such as the Middle-East and Europe, could improve the competitive position of Ethiopia in the field of fruits and vegetables. Many private entrepreneurs have expressed interest in exploring this option.

For export from Ethiopia by sea only the port of Djibouti is a realistic option. Distance from Addis Ababa to Djibouti is more than 900 kilometre through transport by road. In Ethiopia the railroads are currently being modernized but cannot yet be used for high-quality export products.

Maersk opened an office in Addis Ababa in March 2007 and provides a weekly feeder service at Djibouti, transporting cargo to Salalah in Oman, from where cargo is transported to major destinations in the world. Djibouti port is no transhipment port. The consequence is that the transhipment times can take very long. Djibouti is planning to become a transhipment harbour and is preparing itself for receiving the biggest container vessels available.

**Box 4: Ethiopian Airlines responds to economic expansion**

Meeting the higher demand that comes with a booming export economy, Ethiopian Airlines is putting its efforts in increasing capacities. In May 2006 a new facility was made operational, the current growth demands another expansion though. The existing facility is handling goods coming from the horticultural industry as well as the meat and textile sector and is considered to be one the most sophisticated facilities on the continent. The current capacity lies at 14.000 $m_2$ of which 2.000 $m_2$ is reserved for perishable goods that need cold storage, like meat and flowers. The additional state-of-the-art facility will consist of a 7.000$m^2$ capacity that will be used for perishable products only. The design for the new building is finished and approved by different parties like USAID, FloraHolland and a delegation of the Dutch Embassy. As soon as the construction plans are approved by the airlines it selves, the construction process will commence. Mr. Busera Awel, Vice President Commercial, estimates the building to begin in the second quarter of this year. He said it would not take more than two years to finalize the project and make the new facility operational.
Furthermore Ethiopian Airlines has purchased two MD11 freighters that can load up to 85 tons per plane. The first plane has taken off in February this year, told Mr. Gebremichael
Biwota, Director Cargo Marketing. The second MD 11 will be touching the sky by July 2009. This will bring the total of freight aircrafts to 6. The airlines are now flying 2 Boeings type 747 and 2 757s. The aim is to have 4 MD11s and 3 Boeings 757 available in 5 years time.
In addition Emirates is flying weekly cargo flight on Amsterdam since February 2009. The frequency increases to twice a week as per March 2009.

(Text: Bram Wicherink)

Reefer transport costs per kg will depend on the type of product and destination. Current reefer costs for vegetables to the Middle East are estimated as being similar to air freight costs, given the high cost of inland transport charges. A detailed understanding of the Reefer costs and logistics options for fresh fruit is becoming more important given the development of the fruit industry. To build a reefer chain for fruit and vegetable export will not face major physical problems.

**Road**

The domestic, major roads from Addis to far corners of the country are of excellent quality. Major constraint is the quality of the minor and feeder roads connecting to the major roads, although huge investments in road construction are taking place throughout the country.

# 7 Markets

**General**

Export of fruit and vegetables from Ethiopia can be categorised into three types. First, export of relatively high value perishable produce to Europe. Second, the export of conventional products cultivated predominantly in Eastern Ethiopia around Dire Dawa, to regional markets (mostly Djibouti) and, third, some processed and fresh produce to Middle East countries. General export trends are presented in annex 4.

The horticulture sector's contribution to Ethiopia's export earnings is still relatively small but increasing rapidly. The fast growth of the floriculture sector in the period 2001-2008 has considerably increased the contribution of horticulture in the Ethiopian export. Current exports consist mainly of green beans and flowers (roses) exported to northern Europe and a number of vegetables as potatoes, tomatoes and onions to Djibouti. In the Ethiopian calendar year 2001 (2007-2008) the Netherlands emerged as the $4^{th}$ importer of Ethiopian goods.

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

Djibouti has for a long time been the main export country for Ethiopian vegetables. Only in 2003 they have suddenly been overtaken by Sudan. Export to Sudan is still increasing. Europe has become the second most important export destination importing 11.7 million US$ worth of vegetables (of which 6.0 by the Netherlands) while Sudan imports 15.5 and Djibouti 3.0 million US$ in 2006.

In the case of fruits, Ethiopia is practically only exporting to Djibouti but export increases to other markets are already visible in the statistical databases.

**Domestic market**

The size of the domestic market for fruit and vegetables is limited and not very diverse. Fruits in the markets of Addis Ababa are restricted to bananas, papaya and mango. Within the group of vegetables mostly potatoes, onions, peppers and tomatoes are sold. Other fruit and vegetables are not common in the Ethiopian diet.

Main fruit and vegetable markets in Addis Ababa are Piazza, Merkato and Mesalumia Fahil Berenda. These markets have a variety of clients: wholesalers, retailers and consumers are sourcing their fruit and vegetables from these markets. Approximately 50% of the supply originates from smallholder producers or farmers' cooperatives. Produce comes from all over the country, but mostly from the Rift Valley.

In general the development of the domestic F&V market is a long-term, gradual process which depends on aspects of economic development, urbanization and possibly related change in consumer behaviour. In the short-term, 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.

**Regional markets**

Djibouti is the largest F&V regional export market for Ethiopia. With an increased expatriate and military presence in Djibouti there appears to be opportunities for supplying this community with high-value (and high quality) niche vegetables, especially leafy greens. The poor logistics to Djibouti (handling, packing, storage, train infrastructure, etc.) means that Ethiopian produce is now only sold in the conventional, traditional market. The conflict with Eritrea resulted in the complete stop of export 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 traditional export sector of a wide variety of fruits and vegetables to Djibouti and Sudan is 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.

**Middle East Market**

The markets with the highest potential for F&V exports in the Middle East are the United Arab Emirates (Dubai and Abu Dhabi), Qatar, Saudi Arabia and Yemen. Three big importers dominate the Saudi trade. The present vegetable imports are onions, tomatoes and potatoes. Some exotic fruits and vegetables are shipped by air as organic pineapples and green beans. Compared to Egypt and South Africa the UAE and Saudi Arabia imports of fruits and vegetables from Ethiopia are still marginal. Other competitors on this market  are Jordan and Kenya which both have a relatively well-established F&V export sector.

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. The major food companies own modern warehousing facilities which are equipped with fleets of dry and refrigerated trucks and run organized food distribution. Another trend is growing consumer interest in health foods. Although currently there barely any inspections on residues take place, the Government of Ethiopia aims at having a law and inspection system installed within a few years to guarantee food safety.

Although there are no clearly defined buying seasons, it is advisable not to conduct business in general during the two main Islamic religious holidays, the Eid al-Fitr holiday and the Eid al-Adha. Demand for fruits and vegetables is increasing enormously during the Hajj because of the huge increase in consumers. It is generally best to avoid visiting Saudi Arabia in July and August (when many Saudi businessmen are out of the Kingdom) and during the two Eid Festivals. Visitors during Ramadan need to be prepared to do business outside western hours.

Till date limited market information about the Middle East countries is available. Recently, the Saudi Arabian Ministry of Agriculture has started to elaborate its website with more market information in Arabic.

Experience of traders trying to access the Middle East markets also shows the cultural differences and the importance to have good relationships with local people. An often heard complaint is that payments are late.

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 Arabia is now importing processed products from China, a real competitor for Ethiopia due to its low costs of production.

Green house vegetables receive a lot of interest from current producers and investors and trade with the Middle East has started which is hopeful.

**European market**
Ethiopia's vegetable exports to Europe represent only a very small fraction of total exports from leading African producers such as Kenya. EU import figures for green beans in 2002 show total imports from Kenya of 21.700 tonnes compared with 1.920 tonnes from Ethiopia. For Ethiopia, the EU is the biggest export market for beans (about 25%), followed by Yemen and India. Within the EU market, France is the largest importer of green beans (34%) followed by the UK (22%), The Netherlands (17%) and Spain (11%). 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. Competitors for Ethiopia in this field are Kenya, Senegal, Tanzania, Egypt and Morocco. Compared to Ethiopia Senegal and Egypt have lower transport cost by air and have already a well developed reefer transport system. Morocco has the advantage that products are trucked to Europe, giving a big advantage in transport cost.

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. Air freight cost is the most important cost factor and can be the major point of difference.

In the EU there is a growing demand for vegetables as well. A range of vegetable products from Ethiopia have a potential in EU markets but need to be timed to fit specific marketing windows to ensure economic returns. This range includes avocado, strawberry, grapes, mango, sugar snaps, asparagus, baby corn, sugar snap, okra and other Asian vegetables.

Demand in the European market for ecological and fair trade products is increasing. Also major retailers like the UK based TESCO is demanding high social standards of their imported products. Ethiopia offers a good scope for ecological and fair trade production. Some companies have already started to implement the fair trade concept and for example Africa Juice wants to become a premier supplier of Fair Trade juice to the European market.

As mentioned earlier, the requirements for delivery according to contract, food safety and environmentally friendly production standard are high and are expected to further increase. Therefore high technical and organisational skills are essential. In recent years the supermarkets in Europe have become stricter on MRL's (Maximum Residue Levels of pesticide residues). It is foreseen that norms will become stricter and evolve towards 'zero tolerance'.

The impacts of climate change are expected to receive more public and political attention in the coming years. See for instance the UK supermarkets providing information on 'food miles' on the product label. This market trend is increasingly important for medium and long term business strategies.

# 8 Recent developments

Besides green bean production, foreign investors have now also entered Ethiopia to start making use of other potentials. A wide range of vegetable products have been successfully produced on larger farms including cherry tomatoes, courgettes, lettuce, broccoli, asparagus, capsicum, okra and snow peas.
New developments involve:

- An Israeli investor started strawberry production in 2003 and exports fresh strawberries to the Middle East and since this year to The Netherlands as well. Frozen strawberries are also being exported to the European Union.
- A Dutch investor has started to grow various high-value, greenhouse vegetables for the Middle East market, with also European market potential;.
- Another recent initiative is in mango plantations in the Western region by Indian investors;
- Passion fruit planting and processing for export is starting by a Dutch investor (Africa Juice);
- Dried mango exports and sundried tomatoes export;
- Avocado production on state-farm land with long-term options for outgrowers arrangements by a South African company;
- Table grape production has started around Mojo and plans exist to expand to areas in the North of the country (close to Makelle);
- Vine grape production near Ziway for European market;
- In Awassa a new initiative has started to produce pineapple juice;.
- BGI-Ethiopia has planted 125 ha of grapes for wine production and has plans to expand to 400 ha.
- Besides fruit and vegetables there have been some successful initiatives in herb production and export to the UK (a.o. Tesco).

Some companies have already started to implement the fair trade concept and for example Africa Juice wants to become a premier supplier of Fair Trade juice to the European market.

In Ethiopia a large number of public and NGO projects relevant for the F&V development are ongoing:

- SNV has programs to assist pineapple, mango and apple production and processing.
- USAID/Fintrac is working in the horticulture sector at smallholder level and is geared at supporting the larger commercial exporting sector. Among others medium-sized commercial farms are supported with technical assistance and linking them to markets in the UK. A training plan is being developed for arriving at GLOBALGAP certification. In the long-term out-growers schemes around these farms could be developed.
- MoTI 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 Embassy 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.
- The Ethiopian-Dutch Horticultural Partnership has been established to improve the horticultural sector and to ensure sustainable development.
- 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 development of a dry port 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 in the Rift Valley. This project includes the construction of cold stores and packing houses.

Some private companies have started to produce vegetable seed production, such as Segal and Genesis in Debre Zeit. HZPC (Dutch seed potato company) and SolaGrow (agribusiness company in Ethiopia) have been granted a PSOM project (funded by EVD) to set up a seed potato production system and demonstration facility in order to increase potato production.

# 9 SWOT analysis Ethiopian Fruit and Vegetable Business

## Strengths

***Climate***
Ethiopia has a beneficial climate for growing a wide range of fruits and vegetables throughout the year. The good soil and water conditions are enabling the agricultural potential further.

***Supportive government policies***
Investments are encouraged by the Government of Ethiopia through several incentives for example through beneficial tax schemes for export investments. Government offices work according to procedures resulting in a relatively low level of corruption compared to other African countries.

***Costs of production***
Land lease costs are low and labour is cheap.

***Geographic location***
Ethiopia has a favourable geographic location as it is close to Djibouti and the Middle Eastern markets.

***Security***
Compared to other countries in the region Ethiopia's private security and safety situation is very good.

***Private sector service provision***
The rapid growth of the floriculture sector leads to a growing critical mass of service provision level by private sector parties also relevant to the F&V sector.

***New initiatives***
Many new companies have started or are in the process of starting in the F&V sector. And there is a broad interest from private sector parties, public organisations and NGO's for the F&V sector.

***Potentials for irrigation***
Potential for irrigated production with improved water-saving techniques (drip-irrigation) is high.

***Transport***
Although landlocked a good domestic, major road network exists between the main F&V production centres and Addis; airfreight is available and capacity constantly increasing.

***Code of Practice in floriculture sector***
Experiences gained in the development of a Code of Practice by the floriculture sector will benefit the fruits and vegetable sector.

## Weaknesses

***Constant high quality supply in sufficient quantities***
Apart from beans, a fragmented and non-constant supply of F&V with limited quantities and high variation in quality, leads to a weak position compared to competitors like Kenya; Ethiopia yet lacks the critical mass and reputation of a high potential source of F&V.

***Varieties***
Limited knowledge and availability of the proper varieties with respect to local climatic conditions and consumer demand.

***Packaging***
Low quality of locally produced packaging material.

***Cold Storage***
Limited capacity of appropriate cold storage capacity.

***Technical Know-How***
Limited technical know-how for production and handling of high quality F&V for export markets.

**Research and extension**
Limited research and extension programmes focused on the export oriented F&V sector.

***Input supply***
Problems in acquiring the appropriate types of fertilisers and pesticides.

***Land Tenure***
Insecurity due to lack of land tenure causes constraints for investments.

***Market Information***
Information about export markets, especially Middle East, is limited.

***Domestic market***
Low consumption rates of fruits and vegetables, which give limited options for selling non-export grades.

***Banking***
The regulation of the banking system is a major constraint. There is no free exchange of foreign exchange, which hampers international financial transactions.

**Bureaucracy**
Government procedures (including customs, repayment of VAT etc.) are sometimes slow and unclear and require regular follow-up.

***Communication***
The mobile phone network is over-stretched and internet connections are relatively slow.

## Opportunities

***Demand in Europe and Middle East***
In both Europe as in the Middle East there is a high and growing demand for fruits and vegetables. The objective of importers to diversify sourcing from main suppliers like Kenya, provides an opportunity for Ethiopia. For European importers Ethiopia is very interesting in order to have a year round delivery of fruits and vegetables.

***Demand for processed fruits and vegetables***
Processed fruits and vegetables have a high demand in the European and Middle Eastern markets; also import substitution in the domestic market provides good opportunities. Demand for tomato concentrate in the Middle East and Sudan is increasing.

***Ecological and fair trade production***
Demand in the European market for ecological and fair trade products is increasing. Also major retailers like the UK based TESCO is demanding high social standards of their imported products. Ethiopia offers a good scope for ecological and fair trade production.

## Threats

***Increased competition in European and Middle East Market***
High competition of countries with already a strong position (e.g. Kenya in the European market) and countries with a growing position (Morocco, Egypt in Europe; Turkey, Jordan in Middle East). China may also become a competitor for processed products.

***Regional politics***
Political insecurity due to possible escalating conflicts with Somalia and Eritrea and internal tensions e.g. in the Ogaden region.

***Stringent requirements on food safety and sustainability standards***
Although food safety standard are currently considered to be ‘license to produce’, it may be expected that more stringent requirements by supermarkets in terms of quality and safety compliance, traceability and consistency of contracted supplies and sustainability (food miles) can form a barrier for a newcomer into the high value fruit and vegetable markets.

## Conclusion

It is concluded that the further development of the fruit and vegetable sector in Ethiopia for export to Europe and the Middle East has good perspectives and provides interesting opportunities for foreign investors. Currently, many new companies are stepping in, in different parts of the country and conditions regarding land, cool chain and cargo appear to improve gradually. Yet, the sector is in its infant stages. Supportive conditions for doing business are not yet optimal, but are expected to improve in the near future.

For growers who consider starting operations in Ethiopia it is important to carefully select a location and ensure that the logistical and cool chain is properly organized on forehand.

For companies who consider sourcing from Ethiopia it is important to build good relations with (potential) growers, provide hands-on guidance and training and to invest in organizing the logistical supply chain well.

# Annex 1 Useful addresses

## In Ethiopia

**Ethiopian Horticulture Development Agency**
P.O. Box 43450
Addis Ababa
Ethiopia
Phone: 00251- (0)-11-5502483/5513881
Fax: 00251-(0)-115537448

**Ethiopian Horticulture**
**Producer and Exporters Association (EHPEA)**
P.O. Box 22241 code 1000
Addis Ababa
Ethiopia
Tel. 00251-(0)11-6636750/51
Fax: 00251-(0)11-6636753
Email: ehpea@ethionet.et
Website: www.ehpea.org.et

**Embassy of the Kingdom of the Netherlands**
Old Airport Zone
P.O. Box 1241
Addis Ababa
Ethiopia
Tel.: 00251-(0)11-3711100
Fax: 00251-(0)11-3711577
Email: add-lnv@minbuza.nl
Website: www.netherlandsembassyethiopia.org

**USAID**
USAID/Agribusiness and Trade Expansion Activity
Horticulture Sector Manager
Tel:251-011-3720060/61
Cell phone:251-0911-942531
Addis Ababa, Ethiopia

## In The Netherlands

**Ministry of Agriculture, Nature and Food Quality**
Department of Trade and Industry
Bezuidenhoutseweg 73
P.O. Box 20401
2500 EK The Hague
The Netherlands
Phone: 0031-(0)70-3786868
Email: via website
Website: www.minlnv.nl

**EVD, International Business and Cooperation,**
Ministry of Economic Affairs
P.O. Box 20105
2500 EC The Hague
The Netherlands
Phone: 0031- (0)70- 778 88 88
Website: www.evd.nl

For more useful addresses, please refer to the Guide “Investing in the agricultural sector of Ethiopia”, to be published by EIA supported by the Netherlands Ministry of Agriculture, Nature and Food Quality

# Annex 2 References

Addis Fortune, 2008, July 02, *Resettled Farmers Cripple Green Focus' Plans.*

AGF, 2008, www.agf.nl/nieuwsbericht, *Fruit World Breda importeert aardbeien uit Ethiopie.*

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

BBC, 2008, *Country profile Ethiopia,* http://news.bbc.co.uk, June 3th, 2008

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

Central Statistical Agency (CSA), Ethiopian Development Research Institute, International Food Policy Research Institute, 2006, *Atlas of the Ethiopian Rural Economy*. ISBN: 0-89629-155-3

Emana B. and H. Gebremedhin, 2007, *Constraints and Opportunities of Horticulture Production and Marketing in Eastern Ethiopia,* DCG Report No. 46

Ethiopian Intelligence Unit, 2008, *Ethiopia economy: the price of success,* Country briefing, August 27th.

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

Ethioworld, 2008, www.ethioworld.com

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

FCO, 2008, Ethiopia country profile, www.fco.gov.uk,

*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

Mussa, M., and P. Greenhalgh, 2007, April, *Regoverning markets, small scale producers in modern agri-food markets- Ethiopia,* Information Sheet

Panlibuton H (2004) *Mid-term Assessment Report: Final Report* Smallholder Linkages Programme (SHLP) ACDI/VOCA Ethiopia. Washington DC

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

Sissay H (2004) *Fresh Fruit and Vegetables: Production and Market Study*. Ethiopian Export Promotion Agency. Product Development Market Research Directorate, Ethiopia

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.

Worldbank, 2008, Ethiopia country brief, www.worldbank.org

Wijnands, J.H.M., and R.H.M. Maaswinkel, 2007, *"Kansen voor beschermde tuinbouw in Saudi-Arabië en de Verenigde Arabische Emiraten"* Rapport 2.07.16, LEI, The Hague

# Annex 3 Production trends

### Fruit and Vegetable production trend

| | Quantity produced (1000 tons) | | | | |
|---|---|---|---|---|---|
| **Fruits and vegetables** | **2002** | **2003** | **2004** | **2005** | **2006** |
| Avocados | 80 | 81 | 82 | 83 | 83 |
| Bananas | 82 | 175 | 182 | 211 | 211 |
| Beans, dry | 101 | 117 | 175 | 176 | 176 |
| Beans, green | 3 | 3 | 3 | 3 | 3 |
| Broad beans, horse beans, dry | 453 | 430 | 552 | 516 | 599 |
| Cabbages and other brassicas | 150 | 152 | 164 | 174 | 174 |
| Carrots and turnips | 15 | 10 | 18 | 7 | 7 |
| Chick peas | 187 | 136 | 163 | 217 | 125 |
| Chillies and peppers, green | 78 | 67 | 72 | 79 | 79 |
| Fruit, nec | 145 | 160 | 160 | 160 | 160 |
| Garlic | 70 | 71 | 79 | 86 | 86 |
| Grapes | 7 | 7 | 8 | 8 | 8 |
| Guavas, mangoes, mangosteens | 160 | 163 | 174 | 182 | 182 |
| Leguminous vegetables, nec | 3 | 3 | 3 | 3 | 3 |
| Lentils | 38 | 35 | 55 | 63 | 65 |
| Onions (inc. shallots), green | 19 | 20 | 20 | 20 | 20 |
| Onions, dry | 140 | 217 | 230 | 176 | 176 |
| Oranges | 15 | 13 | 17 | 16 | 16 |
| Papayas | 226 | 231 | 247 | 259 | 259 |
| Peas, dry | 200 | 170 | 230 | 197 | 209 |
| Potatoes | 385 | 510 | 510 | 450 | 450 |
| Sweet potatoes | 339 | 497 | 452 | 409 | 409 |
| Tangerines, mandarins, clem. | 8 | 9 | 9 | 9 | 9 |
| Tomatoes | 55 | 55 | 36 | 35 | 35 |
| Vegetables, nec | 420 | 430 | 430 | 440 | 440 |
| Fruits total | 729 | 845 | 884 | 934 | 934 |
| Vegetables total | 957 | 1031 | 1060 | 1029 | 1029 |

Source: FAOSTAT | © FAO Statistics Division 2008

# Annex 4 Export trends

### Trend in Ethiopian export of fruits and vegetables

| Fruit and Vegetables | Ethiopian export of fruits and vegetables (1000 US$) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| **Vegetables, roots and tubers** | **12,386** | **27,613** | **38,663** | **25,090** | **37,016** | **38,466** | **56,365** |
| Potatoes | 770 | 1,462 | 967 | 1,242 | 1,376 | 12 | 6 |
| Peas | 23 | 18 | 6 | 17 | 287 | | 26 |
| Chickpeas | 59 | 9,298 | 14,672 | 777 | 12,850 | 28,417 | 36,475 |
| Kidney and white pea beans | 8,671 | 10,890 | 14,119 | 12,045 | | | |
| Lentils | 69 | 324 | 559 | 329 | 436 | 3,024 | 161 |
| Broad and horse bean | 58 | 65 | 1,054 | 5,297 | 3,694 | 311 | 5,955 |
| Tomatoes | 420 | 847 | 792 | 941 | 996 | 41 | 52 |
| Onions, shallots | 492 | 783 | 881 | 967 | 791 | 16 | 400 |
| Garlic, leek | 67 | 259 | 188 | 236 | 86 | 123 | 205 |
| Cabbage | | 94 | 78 | 85 | 69 | 1 | 809 |
| Lettuce | | 163 | 129 | 179 | 59 | 1 | |
| Edible roots | | 191 | 171 | 214 | 140 | 1 | 1 |
| Cucumbers | 34 | 47 | 66 | 55 | 41 | | |
| Leguminous vegetables | 1,394 | 1,075 | 1,936 | 1,257 | 1,521 | 135 | 34 |
| **Vegetables frozen** | **1** | **1,802** | **2,820** | **1,229** | **2,233** | **2,628** | **4,516** |
| **Fruit,nuts excl.oil nuts** | **1,072** | **1,429** | **2,519** | **1,615** | **1,985** | **2,070** | **2,030** |
| Oranges | 408 | 755 | 609 | 715 | 814 | 15 | 240 |
| Mandarins | 18 | 63 | 865 | 42 | 31 | 1 | 7 |
| Lemons,limes | 418 | 105 | 71 | 87 | | | |
| Bananas | 100 | 191 | 167 | 329 | 294 | 2 | 108 |
| Avocado,guava,mango | 102 | 220 | 675 | 285 | 268 | 3 | |
| Strawberries | | | 2 | | | 22 | 349 |

Source: Comtrade/HS data, 2008

### Trading countries for Ethiopian vegetables

| Country of Destination | Ethiopian export of vegetables (1000 US$) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| World | 12,389 | 27,614 | 38,666 | 25,090 | 37,017 | 38,465 | 56,363 |
| Belgium/Luxembourg | 109 | 502 | 615 | 660 | 532 | 1,600 | 218 |
| Djibouti | 2,565 | 4,641 | 4,063 | 5,745 | 4,901 | 978 | 3,054 |
| Germany | 1,743 | 1,716 | 2,115 | 731 | 858 | 756 | 864 |
| Italy | 672 | 620 | 939 | 511 | 1,350 | 1,587 | 2,041 |
| Morocco | 1,240 | 1,547 | 1,191 | 738 | 651 | 278 | 943 |
| Netherlands | 1,922 | 2,717 | 1,725 | 1,832 | 3,916 | 4,579 | 6,040 |
| Pakistan | | 772 | 13,575 | 786 | 1,268 | 1,212 | 6,192 |
| India | | 5,961 | 2,263 | 2,152 | 1,619 | 1,506 | 2,256 |
| Sudan | 104 | 280 | 1,998 | 6,124 | 8,505 | 9,615 | 15,489 |
| United Arab Emirates | | 1,517 | 951 | 106 | 869 | 2,059 | 5,399 |
| United Kingdom | 13 | 797 | 1,127 | 837 | 2,205 | 3,264 | 1,752 |
| Yemen | 2,159 | 1,941 | 2,048 | 2,873 | 3,044 | 2,636 | 3,951 |

Source: Comtrade/HS data, 2008

### Table 6: Trading countries for Ethiopian fruits

| Country of destination | Ethiopian export of fruits (1000 US$) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| World | 1,073 | 1,446 | 2,533 | 1,626 | 1,985 | 2,070 | 2,030 |
| France | | | 1 | 28 | | | |
| Netherlands | 2 | | | | | 6 | 78 |
| United Kingdom | | | | 10 | 32 | 16 | 31 |
| Japan | | | | 52 | | | |
| India | | | | 74 | | | |
| Djibouti | 1,059 | 1,416 | 2,484 | 1,451 | 1,896 | 1,976 | 1,528 |
| Yemen | 10 | 21 | 42 | 4 | 24 | | |
| Saudi Arabia | 1 | 6 | | 2 | 2 | 14 | 108 |
| Sudan | | | | | 30 | 56 | 73 |
| United Arab Emirates | | | | | | 1 | 209 |

Source: Comtrade/HS data, 2008

## Ethiopian export of fruits and vegetables (1000 US$) to the EU

| Fruit and Vegetables | Ethiopian export of fruits and vegetables (1000 US$) to the EU | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| **Vegetables, roots and tubers** | **5,115** | **7,072** | **7,388** | **5,147** | **10,017** | **12,798** | **11,974** |
| Cabbage, cauliflower, kohlrabi & kale | | | | 1 | 1 | | 808 |
| Beans | | 1,431 | 2,080 | 1,079 | 2,193 | 2,627 | 2,955 |
| Chickpeas | 1 | | 25 | | 3,288 | 8,152 | 7,117 |
| Kidney beans and white pea beans | 3,727 | 5,276 | 5,078 | 3,663 | 3,952 | 1,736 | 1,010 |
| **Fruit, nuts** | **2** | | **5** | **41** | **32** | **22** | **109** |
| Strawberries | | | | | | 22 | 109 |

Source: Comtrade/HS data