Natural Resources Institute

Central Avenue, Chatham Maritime
Kent ME4 4TB, United Kingdom
Telephone: +44 (0)1634 883086
Fax: +44 (0)1634 883706
Internet: http://www.nri.org

Assessment of Needs and Feasibility of Commercial Production of Tropical Fruits and Vegetables for Diversified Exports in Ethiopia and Sudan

A report prepared for
The Common Fund for Commodities

by

Peter Greenhalgh
John Orchard
Anne Tallontire

Natural Resources Institute, UK

December 2003

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EXECUTIVE SUMMARY

Diversification into the production and export of horticultural crops is a strategy increasingly adopted by developing countries to enhance incomes, employment and foreign exchange earnings. However, a relatively small number of countries dominate exports of horticultural products from Sub-Saharan Africa and for most African countries the horticulture export sector has remained very small and/or has experienced severe bottlenecks to expansion. The Common Fund for Commodities (CFC) is financing projects to assist Least Developed Countries in the diversification of their commodity exports. As part of this programme, the CFC is funding this pilot project in Ethiopia and the Sudan to assess the needs and feasibility of developing commercial production of high value tropical fruit and vegetable products based on these countries' comparative advantage.

The purpose of this report is to identify and prioritise the various capacity building measures that need to be devised and developed to overcome these constraints and thus facilitate an expansion of fruit and vegetable exports. The aim is to advise the relevant international and national institutions on modalities to adopt in order to strengthen the existing horticultural strategy in Ethiopia and Sudan and thus reduce poverty while enhancing the livelihood benefits accruing.

The report has five chapters. The first is an introduction, while aspects of horticultural production and trade in Ethiopia and Sudan are discussed in Chapters 2 and 3 respectively. Chapter 4 reviews the international market situation looking specifically at European Union and Middle East markets. Chapter 5 contains conclusions and recommendations of the study. In addition, there are 7 Annexes, covering methodology, contacts and itinerary, workshops in Sudan and Ethiopia, detailed production and trade data, and materials consulted.

International Horticultural Markets and Implications for Ethiopia and Sudan

International trade in horticultural products is one of the most dynamic and rapidly growing components of international agricultural trade, with a range of market

structures from highly demanding supermarket members of EUREP and their requirement for fully audited production and post-production systems, through to wholesalers and other supermarkets and small-scale 'ethnic' importers and traders.

In the EU and other high-value markets there is a continued high emphasis on retail-driven codes of practice and differentiation by product quality. In addition there are increasingly strict regulatory requirements for food safety and food quality. Preliminary EU market investigations suggest Ethiopia and Sudan would have difficulty competing against good quality low-cost supplies from other sources for processed fruits, most fruit and many vegetables. Products where Ethiopia and Sudan may be able to compete include pineapples, mangoes, papaya, passion fruit and speciality vegetables such as peppers and beans.

The potential Middle East markets are very competitive with margins being squeezed. Products supplied will need to closely fit market requirements. Ethiopian and Sudanese exporters will need to identify the limited seasonal/climatic windows in which they can compete.

The complexities of today's international markets in horticulture require a supply base that fully understands buyers' demands and the regulatory framework in which the market is operating.

Current Status of Exports from Ethiopia and Sudan

Both Ethiopia and Sudan have very small export volumes. The standards, volumes and reliability of supply flow required by most markets are currently unattainable by Ethiopian and Sudanese producers in the short term because of a variety of constraints associated with:

- poorly developed entrepreneurial skills with few larger businesses acting as a focal point to lead the sector;
- low productivity (e.g. access to land, poor agronomic practices, access to planting materials, lack of trained labour);
- inadequate cold chain infrastructure, poor post-harvest handling practices and lack of up-to-date grading equipment leading to low quality produce with short shelf-life that fails to meet market specifications;

- limited air freight availability and cost which restricts the volumes of exports required to attract buyers;
- availability of credit restricting the necessary investments in key areas such as cold stores;
- limited technical and marketing expertise and knowledge;
- lack of guiding organisations, particularly important for small-scale enterprises.

For Ethiopia and Sudan to achieve market entry and sustained growth in the export of high value horticultural products requires: a 'critical mass' of exports; greater understanding of the demands of the market and identification of the range of fruit and vegetable products that can be produced and exported competitively and consistently; and efficient linkages between each of the stakeholders in the supply chain and between the various stages stretching from grower to exporter.

One of the guiding principles from the experiences of horticulture export development is the need for private sector initiatives to drive the industry forward. Government's role should be regulatory and facilitative, with the objective of providing an enabling environment in which the private sector can thrive. In the early stages, however, public sector help is needed to lower some of the barriers to market entry facing potential exporters, such as access to market and technical information and expertise. International development agencies can assist in the establishment of a horticultural export sector, but should do so through a facilitative approach supporting the role recommended by Government.

The areas that need addressing are broadly similar for both Ethiopia and Sudan. Sudan, unlike Ethiopia, has benefited from considerable public financing of production and post-production activities, although this has not led to significant success in developing the export sector. Ethiopia has achieved higher volumes of horticulture exports and the nucleus of a private sector within this sub-sector is more clearly discernible.

RECOMMENDED INTERVENTIONS

The next steps for Ethiopia and Sudan centre on the need to raise the profile and collective capability of the private sector and to support the Government in those initiatives that have a clear public good and require public sector/donor support because of the lack of critical mass in the private sector. The key opportunities encompass:

- the improvement of an institutional framework to foster public and private sector participation;
- creating information flows to raise the awareness of market opportunities and demands;
- targeted logistical and technical support to a small number of organisations and initiatives to act as a focal point for achieving export success that can act as an exemplar for the rest of the sector to build upon.

Institutional Framework

Institutional strengthening is vital to sub-sector success. Private and public sector stakeholders, including donors, should meet regularly to monitor developments, address emerging issues and coordinate activities.

Ethiopia

In Ethiopia the EHPEA is proving to be an effective organisation facilitating private sector horticultural exports. Its Business Plan will outline key capacity building needs e.g., cool chain facilities, EUREPGAP certification, market analysis and promotion, the establishment of a research, training and certification centre. Donors should provide assistance both for specific projects and to strengthen the EHPEA.

Sudan

Sudan's private sector operators are relatively small-scale and lack access to production know-how and market knowledge. Greater collaboration including the

sharing of knowledge and resources will assist in overcoming these constraints. An institutional mechanism is needed to facilitate collaboration between the various stakeholders. Because of limited numbers it may be premature to establish an Exporters' Association but an interim step would be to identify farmers and exporters who could form part of a Focus Group. This Group would include private and public sector players who would develop a more sustainable approach to export horticulture by building members' capacity to understand and meet international market demands. The Focus Group should formulate an action plan centred on developing exports from a small, targeted group of farmers/exporters (e.g. from the Silait Irrigation Scheme) working with key institutional organisations (e.g. the Export Village, the National Institute for the Promotion of Horticultural Exports). The action plan could form the basis of a proposal for donor support. A key component of the action plan would be the acquisition of EU and Middle East export market data to help guide product selection and target markets.

Provision of Marketing Analysis and Data

More detailed analysis needs to be undertaken on target markets, volumes, varieties, seasonality, quality requirements, and Ethiopia and Sudan's competitive positions. A range of marketing opportunities need to be explored to allow supply from a diverse production base and to develop a balanced and inclusive strategy incorporating European, Middle Eastern and local markets.

In Ethiopia, financial and technical assistance should be provided to strengthen the capacity of the EEPA and EHPEA to acquire, analyse and disseminate data and to develop marketing and promotion strategies and the organisation of study tours.

In Sudan, one of the key constraints has been the lack of a marketing organisation with the resources and know-how capable of gathering information on all aspects of market requirements. It will be important to bring together key players from the public and private sector to develop an agreed approach about gathering and disseminating market information and to organise, with donor support:

- marketing tours to EU and Gulf States to assess the different commercial opportunities for buying and selling horticulture produce;
- tour of horticulture producing countries already successfully exporting.

Information from marketing tours, etc, would be important in developing an action plan for targeted support for a small group of farmers, exporters and support organisations discussed below.

Targeted Support for Export Production and Cold Chain Management

Ethiopia

Technical assistance to improve production and post-harvest management should be provided to a Focused Export Group addressing issues of suitable planting materials; improving agronomic practices particularly regarding pesticide use; improved access to credit facilities; post harvesting handling and packaging; marketing and promotion, including the building up of trading links and partnerships. Technical and financial assistance could play a role in helping to organise small-scale producers. Various options are available including contract farming and outgrowing schemes, possibly using some of the existing state farm lands.

Sudan

A first step could be to develop a pilot project with a targeted group of stakeholder including farmers/exporters from Silait Irrigation Scheme, the cold chain management facility at the Export Village, the National Institute for the Promotion of Horticultural Exports (for agronomic support), Food Research Centre (post-harvest guidance) and the Sudan Horticulture Export Company. The aim would be to put in place all the necessary technical, logistical and regulatory steps necessary to achieve the export of a target crop. This would require working with the appropriate importer in the target market. This pilot project may require donor support to facilitate market linkages and technical backstopping.

ABBREVIATIONS AND GLOSSARY

A.A. -- Addis Ababa

AAAID-Arab Authority for Agricultural Investment and Development

ACP – African, Caribbean and Pacific countries

AGOA – Agriculture Growth Opportunity Act (USA)

AISC - Agriculture Inputs Supply Corporation (Sudan)

APDF – African Private Development Finance (Sudan)

ARC - Agricultural Research Corporation (Sudan)

Bn – billion

CAA – Civil Airport Authority (Ethiopia)

CBI – Center for the Promotion of Imports from Developing Countries (part of Dutch Ministry of Foreign Affairs)

CFC - Common Fund for Commodities

Cif – cost, insurance, freight

CODEX—CODEX Alimentarius

COMESA - Common Market for East and Southern Africa

DFID – Department for International Development (UK)

DTIS – Ethiopia: Diagnostic Trade Integration Study

EAL – Ethiopian Airlines

EARO – Ethiopian Agricultural Research Organization (Ethiopia)

EC - European Commission

EEPA – Ethiopian Export Promotion Agency

EHPEA - Ethiopia Horticulture Producers and Exporter Association

EIA – Ethiopian Investment Authority

EIU - Economist Intelligence Unit

EQSA - Ethiopian Quality and Standards Authority

Etfruit - Ethiopian Fruit and Vegetable Marketing Enterprise

EU – European Union

EUREP-GAP - Euro-Retailer Produce Working Group Good Agricultural Practice framework

F & V – fruit and vegetables

FAO – United Nations Food and Agriculture Organization

Fob – free on board

FPEAK - Fresh Produce Exporters' Association of Kenya

FRC - Food Research Centre

GDP - Gross Domestic Product

GOE - Government of Ethiopia

GOS - Government of Sudan

GSP – General System of Preferences

Ha - hectare

HCDA – Horticulture Development Authority – (Kenya)

HDE-Horticulture Development Enterprise (Ethiopia)

HRS - Hydraulic Research Station

IMF - International Monetary Fund

ISO – International Organization for Standardization

ITC - International Trade Centre (Switzerland)

Kg - kilogram

LOD - limit of determination

Mn – million

MOI&WR - Ministry of Irrigation and Water Resources (Sudan)

MRLs - maximum (pesticide) residue levels

NGO – Non-governmental organisation

NRI – Natural Resources Institute (UK)

NIPHE - National Institute for the Promotion of Horticultural Exports (Sudan)

SHEC - Sudanese Horticulture Export Company

SHLP - Smallholder Linkages Programme

SME - Small and medium size enterprise

SNNPRS – Southern Nations, Nationalities and Peoples Regional State (Ethiopia)

SPS – Sanitary and Phytosanitary Measures

SSA - Sub-Saharan Africa

SSMO - Sudanese Standards and Metrology Organization

UAAIE - Upper Awash Agro-Industry Enterprise (Ethiopia)

UK - United Kingdom

UNCTAD - United Nations Conference on Trade and Development

UNDP – United Nations Development Programme

UNIDO - United Nations Industrial Development Organization

USAID - United States Agency for International Development

USDA - United States Department of Agriculture

VOCA - Volunteers in Overseas Cooperative Assistance (USA)

WTO - World Trade Organisation

Notes

Sudan has not reported trade data in the COMTRADE database. Therefore figures quoted from ITC are based on data from importing countries

In Sudan (and Egypt) a feddan is equivalent to about 1.038 acres or 0.42 hectare.

Quintal – A quintal equals 100lbs

Exchange rates November 2003:

1 US Dollar = 8.82 Ethiopia Birr

1 US Dollar = 2.583 Sudanese Pound

CHAPTER 1 INTRODUCTION

1.1 INTRODUCTION

The share of agriculture in gross domestic product (GDP) is generally high for a significant number of developing countries, particularly those with low GDP per capita. A high percentage (40 - 60 %) of people in the developing world still live in rural areas and their socio-economic development is dependent on the sustainable development of agriculture. Increased agricultural production, efficiency and diversification are central to the economic growth strategies of these countries.

Many developing countries have diversified into horticultural crop production and exports based on favourable climatic conditions and lower labour costs although lower labour productivity and yields can partially offset this advantage. Although horticultural production is labour-intensive, it is also technology- and management-intensive.

However, horticulture export expansion could help reduce poverty in several ways:

- directly through employment of workers in farming and processing activities - horticulture is labour intensive and many operations (e.g. harvesting, grading) tend to be undertaken by women;
- indirectly through expanded employment to meet the extra rural demand from horticulture workers for local goods and services;
- indirectly through the extra public expenditure made possible by the expansion of the formal sector revenue base and the increased export flows;
- indirectly through employment in other formal sector activities, which benefit from business skills enhanced through horticulture export experience: this is a longer-term "spill over" effect, but should not be ignored.

International trade in horticultural products is one of the most dynamic and rapidly growing components of international agricultural trade. Moreover, the countries and entrepreneurs of Sub-Saharan Africa (SSA) are playing a significant role in supplying

out of season vegetables, tropical fruit and cut flowers, especially to European markets. The annual value of SSA horticultural exports now exceeds $2 billion and this surpasses the export value of such traditional commodities as coffee and cotton. Major players are Kenya, Zimbabwe, Côte d'Ivoire and South Africa, while several other countries including Ghana, Cameroon, Uganda and Zambia have substantially increased exports, albeit from a very small base. The growth in horticultural exports has created substantial employment and foreign exchange earnings.

However, elsewhere in SSA, the horticultural export sectors have remained very small and/or have experienced severe bottlenecks in expanding or maintaining their competitive position. Moreover, despite success in several African countries, SSA still accounts for a small share of trade and faces considerable competition from Asian and Latin American producers.

The Common Fund for Commodities (CFC) is financing projects to assist Least Developed Countries in the diversification of their commodity exports. As part of this programme, the CFC is funding this pilot project in Ethiopia and the Sudan to assess the needs and feasibility of developing commercial production of high value tropical fruit and vegetable products based on these countries' comparative advantage.

The need for the study arises from the growing importance of horticultural exports to some Sub-Saharan African (SSA) countries and the keenness of many others to expand and diversify into horticultural exports, which can produce high output value per hectare by making intensive use of land and labour, especially women.

1.2 TERMS OF REFERENCE

The objective of the study is to assess the needs and the feasibility of commercial production of any or all of the tropical fruits, including avocados, mangoes, papayas and pineapples, as well as vegetables with export potential with a view to diversifying the exports of both Ethiopia and the Sudan.

The study consists of a number of elements including:

- an overview of horticultural production and exports in Ethiopia and Sudan from both a smallholder and larger farm perspective;
- an analysis of the supply chain and stakeholders involved in each of the two countries e.g. producers, traders, transporters, cold storage companies, exporters, support organisation;
- an analysis of costs and benefits;
- an overview of EU and Middle-East horticultural import markets;
- a review of some of the implications for Ethiopian and Sudanese horticultural suppliers, including the use of case studies;
- an examination of the role of codes of practices, certification and auditing in facilitating exports;
- a review of product prospects e.g. avocados, mangoes, papayas, pineapples, mange tout, melons;
- an analysis of key constraints facing horticultural exports including air freight capacity and cost, availability of finance, lack of secure land tenure, technical and marketing expertise, logistical and infrastructure constraints and availability of cold storage facilities, packaging and agrochemicals;
- provision of recommendations for international agencies and donors, including the CFC, which identify the priorities and support measures required to stimulate diversification of horticultural production and exports.

1.3 METHODOLOGY AND WORK PLAN

The study consists of a number of elements including:

- a review of product prospects e.g. avocados, mangoes, papayas, pineapples, mange tout, melons;
- an analysis of key constraints facing horticultural exports including air freight capacity and cost, availability of finance, lack of secure land tenure, technical and marketing expertise, logistical and infrastructure constraints and availability of cold storage facilities, packaging and agrochemicals.

- provision of recommendations for international agencies and donors, including the CFC, which identify the priorities and support measures required to stimulate diversification of horticultural production and exports.

The approach to gathering information on the horticulture sectors in Ethiopia and Sudan was through:

- a review of published and grey literature gathered during and after country visits;
- interviews with key stakeholders, public and private sector organisations and companies and influential projects.

Visits were made to Ethiopia and Sudan in October/early November and a detailed itinerary and list of contacts are presented in Annex 2

A similar approach was adopted in gathering data on the European Union (EU) and Middle East markets, namely literature reviews, interviews with various trading organisations and country visits.

A more detailed methodology and the work plan are presented in Annex 1.

The purpose of this report is to identify and prioritise the various capacity building measures that need to be devised and developed to overcome the constraints identified and thus facilitate an expansion of fruit and vegetable exports. The report aims to inform and update the Common Fund for Commodities (CFC) as well as the various other horticultural sector stakeholders in Ethiopia and Sudan (including Government, producers, exporters and international donors) of recent developments in the sub-sector. The aim is to advise the relevant international and national institutions on modalities to adopt in order to strengthen the existing horticultural strategy in Ethiopia and Sudan and thus reduce poverty while enhancing the livelihood benefits accruing.

Following this introductory chapter there are a further four chapters. Aspects of horticultural production and trade in Ethiopia and Sudan are discussed in Chapters 2

and 3 respectively. In each chapter there is a discussion of production and farming systems, the cold chain and post harvest handling systems, the domestic and export markets, the institutional and regulatory situation and finally an overview of constraints and needs. Chapter 4 reviews the international market situation looking specifically at European Union and Middle East markets. Chapter 5 contains conclusions and recommendations of the study. In addition, there are 8 Annexes which contain details of the methodology and work plan (Annex 1), itinerary and contacts (Annex 2), Ethiopia and Sudan workshop reports (Annex 3 and 4), production and trade statistics for Ethiopia (Annex 5), Sudan (Annex 6) and international data (Annex 7). Finally, Annex 8 provides a list of the materials consulted during the course of this work.

CHAPTER 2 ETHIOPIA

2.1 INTRODUCTION

The horticulture sector's contribution to Ethiopia's export earnings is very small, currently estimated at fewer than 2% of total export earnings by value and approximately 6% of exports by volume. However, over the past two years, there has been a considerable growth of interest in the sector not only from Government and donors but also from the private sector. Recently policy changes by Government, encouraged by the direct intervention of Prime Minister Meles, have facilitated a sizeable investment in the sector, by both local and foreign entrepreneurs. As yet, this interest has been predominantly centred on the floricultural sector, particularly the production of highland roses. Nevertheless, there is a belief that a substantial growth in fruit and vegetable exports could be achieved given the correct policy environment and various technical capacity building exercises, as well as sizeable flows of domestic and foreign investments.

Ethiopia is recognized to have many attributes favourable to horticultural crop production and exports. These include fertile land within relatively close proximity to Bole Airport in Addis Ababa, a variety of altitudes and micro-climates, year-round production possibilities, extremely low labour costs, and accessible irrigation sources. Nevertheless, there are a number of major constraints that need to be overcome if the sector is to witness rapid growth. These constraints were detailed in a scoping study undertaken by Dearden *et al* (July 2002) which also outlined possible ways forward.[1] This study identified major constraints that needed to be overcome e.g. cost and availability of transport, specialist expertise, access to finance, land tenure, cold chain, access to agro-chemicals and technology, packaging, infrastructure, compliance with regulatory and trade regulations, access to market information. Several of these constraints revolve around the perishable nature of horticulture products which necessitate special attention being paid to handling, packing and transport. Indeed the

[1] This study on *Horticulture Exports from Ethiopia and EU Supermarket Sourcing* (Dearden, Greenhalgh, Havis 2002) was funded by the UK's Department for International Development (DFID). The study, which had the full support of Prime Minister Meles acted as a catalyst in bringing together major stakeholders in the sector. Following on from the study, DFID have funded various activities in the horticulture sector (see Section 2.5).

limited availability and cost of airfreight is recognized by all in the sector as being the biggest obstacle to expanded exports.

The adoption of various measures has created a degree of momentum in the horticulture sector. However, much of the development concerns floriculture which is outside the scope of this CFC funded study. Moreover, there are still a large number of constraints facing horticulture, particularly in the fruit and vegetable sub-sector. Indeed a visit in April 2003 by representatives of two major EU fruit and vegetable importers concluded that while they were "encouraged by the general growing standards" they were "daunted by the lack of facilities, and pest and disease issues." Among their concerns was the lack of acceptable grading and packing facilities and the poor provision of cold storage. With the exception of one company none of the existing facilities could be easily upgraded to meet UK standards and totally new buildings and storage would be required. Other constraints highlighted included the lack of post-harvest expertise, market awareness, the need for training, certification standards, finance, infrastructure, freight and input availability (personal communication).

Following this introductory section, Sections 2.2 to 2.4 discuss various aspects of Ethiopian fruit and vegetable production and exports. In the process of describing the system, key constraints facing fruit and vegetable exports are identified. Section 2.2 discusses some of the attributes of Ethiopian fruit and vegetable production. Section 2.3 reviews aspects of the cold chain while Section 2.4 looks at the markets for Ethiopian produce and provides brief details of potential export products from Ethiopia. Section 2.5 reviews some of the institutions involved in the sub-sector, alongside various regulatory aspects. Section 2.6 provides an overview and makes recommendations as regards possible interventions and projects needed to facilitate an expansion of fruit and vegetable exports.

2.2 PRODUCTION AND FARMING SYSTEMS

INTRODUCTION

Ethiopia is predominantly a subsistence agrarian economy, in which agriculture accounts for approximately 90% of exports (particularly coffee), 85% of employment and 55% of GDP. Small-scale farmers, who account for 90% of output, farm an estimated 96% of total cropped land. The majority of these farmers are subsistence producers whose yields are low since they practise intensive rain-fed farming without inputs and do not commercialise their crop. However, over the past thirty years, state farms have dominated the export of horticultural crops. Private sector companies' efforts to export to Europe and neighbouring Middle East countries were thwarted by the Derg and horticultural exports fell drastically after the 1974 Revolution. Exports continued under the Derg but were dominated by the state-owned farms. Following the collapse of the Derg in 1991 new private sector operations have slowly been established but, with the exception of several recent investments in export rose production, efforts have concentrated on supplying the domestic market. In the fruit 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 of which are currently in the process of being privatised.

PRODUCTION AND YIELDS

Small-scale farmers typically cultivate horticultural crops as supplements to their main crops of cereals, pulses and oilseeds. Nevertheless, a variety of fruit and vegetables are grown, in part reflecting the wide range of agro-climatic conditions and soil types. Detailed accurate data on the production and yields of these fruit and vegetables in Ethiopia must be treated with considerable caution and used to provide orders of magnitude rather than the basis of accurate analysis. FAO data on production and yields are shown in Tables 2.1 to 2.3 (Annex 5)[2]. According to these data, production of fruits and vegetables in Ethiopia increased steadily between 1991

[2] All tables and diagrams in this report are placed in annexes and are numbered according to the chapter e.g. 2.1, 2.2 etc

and 1998. In 2000, output dropped, and has since remained more or less stagnant. During the past few years, yields have not changed significantly, perhaps decreasing slightly in recent years. Data on production, yields and product types are also presented in the Workshop presentation by Sisay Habte reproduced in Annex 3.

Agronomy

In its agronomic practices, Ethiopia's fruit and vegetable export sector lags behind most producing countries. In part, this is because both the state farms and the few private sector operations do not have the capital to pay for the technology and the technical and commercial expertise that are required. In contrast, the new companies investing in flower production are making sizeable investments in international expertise and technologies to enable them to be internationally competitive.

While some individual farming operations are conducting agronomic trials on their own plots, there has been very little formal and organised horticultural crop research. There are a number of complex production and technical constraints that limit the sector's expansion. These include low genetic potential, quality selection to overcome the lack of high yielding and high quality cultivars for export markets, appropriate management techniques, appropriate disease and insect pest control measures, quality seed supply and multiplication and post-harvest technology, alongside the lack of trained manpower and research facilities. Overcoming some of these aspects will be important factors behind raising Ethiopia's international competitiveness. The Ethiopian Agricultural Research Organization (EARO) has recently drawn up a very detailed strategic plan covering research strategies in horticulture (and other) products. Based on this analysis, as well as anticipated international market needs and requirements, commercially orientated research activities and extension priorities should be drawn up for the horticulture export sector.

STATE FARM HORTICULTURAL OPERATIONS

Upper Awash Agro-Industry Enterprise (UAAIE)

UAAIE is a relatively large farming enterprise of some 7,497 hectares, whose headquarters are some 174 km east of Addis Ababa, along the bank of the Awash River. It is by far the biggest producer of fruit and vegetables, as well as producing cereals and cotton. In addition, it is the only source of parent seed and seedlings of citrus plants in the country. During the five years, 1998/99 to 2002/03 average annual production was 748,393 quintals[3] of products, sold for 582,110 quintals to generate sales revenue of 131.24 million Birr and 20.40 million Birr of profit. Average exports during the same period totalled 18,609 quintals and 25.36 million Birr. Under its recent Corporate Plan the enterprise plans to increase production, sales and export levels.

The operation comprises five economic units, namely the four farms at Tibila (1,334 ha of which 754 are irrigated), Merti Jeju (2,010 ha of which 1,827 are irrigated), Nuraera (3,277 ha of which 3,106 are irrigated) and Awara Melka (876 ha of which 796 are irrigated) as well as the Merti processing plant, currently producing a range of products including tomato paste, juice and ketchup; orange marmalade, juice and squash; and guava nectar. Except for Aware Melka, which is located in Awar Regional State, all the other operations are in Oromia State.

The enterprise employs some 2,000 permanent staff as well as 9,000 to 10,000 seasonal workers who are mainly employed between November and April. In 1999/2000 output totalled 78,805 tonnes of produce, predominantly destined for the domestic market. Although a wide variety of products are produced, citrus fruits, and to a lesser extent, tomatoes dominate. Despite the proposed privatisation, the company has invested heavily over the past few years on improved equipment, in part in an effort to obtain EUREPGAP certification.

[3] One quintal = 100lbs

Horticulture Development Enterprise (HDE)

HDE operation covers 3,536 ha and is made up of four farms located in different agro-ecological zones at Ziway (1,064 ha), Tsedey (294 ha), Erer Gota (540 ha) and Ghibe (1,638 ha) all within a 40 to 180 km radius of Addis Ababa. The farms produce a wide range of fruit and vegetable products as well as cut flowers, wine grapes, cereals, cotton, oil seeds and pulses as well as a range of seeds.

PRIVATE SECTOR AND COOPERATIVE OPERATIONS

The main suppliers of horticulture products are peasant farmers using family labour, who supply solely the domestic market. There are a small number of private sector companies that have attempted to develop fruit and vegetable exports and as yet their results have been mixed. One of the largest private exporting companies is Ethioflora PLC, Managing Director is Chairman of the Ethiopian Horticulture Producers and Exporters Association (EHPEA). The company has been exporting for almost a decade from its 49 ha of operations at Ziway, some 140 km from Addis Ababa. In developing export production it has worked closely with UAAIE. During the past year, Ethioflora has begun working with the non-governmental organisation VOCA to facilitate export production to neighbouring Djibouti (see below). In addition, Ethioflora has opened a second operation, Blue Nile Flora, covering 87 ha close to Bahar Dar. However, high freight costs from Bahar Dar have led the company to concentrate on supplying the local market. Although Ethioflora is one of the foremost private exporters of fruit and vegetables, the quantities exported have remained small and the domestic market continues to be the dominant outlet for its products.

Another private company, ETCO Private Limited Company, has been exporting sizeable quantities of green beans over the last decade to Europe from its base at Ziway. This is producing on several hundred hectares of leased land. In its export operations the company has been working closely with HDE, the nearby state farm. The company has several refrigerated trucks as well as a wooden box manufacturing plant. Another company, Valley Farms based near Ziway has been undertaking smaller volumes of exports to Europe and Djibouti and is working with cooperatives

to develop exports. Valley Farms (in partnership along with Teppo Agricultural) is one of the few companies that have a cold storage facility.

In the past year, there has been a sizeable investment from a company based in the United Arab Emirates (UAE) to establish export-orientated fruit growing operations on some 1,700 ha of its 4,000 ha of land in East Wollega, just over 330 miles from Addis Ababa. The company, Green Focus Ethiopia Ltd. has planted substantial areas of mangoes – including Kent, Tommy Atkins and Alphonso varieties. Some of the seedlings have been brought from UAAIE and some brought in from India. When producing in 2-3 years time the plan is that fruit will be exported mainly to Middle East market using refrigerated containers via trucks to Djibouti and sea to Middle East markets. In addition, there is a plan to establish a factory to process the off-grades. Also, they are growing pineapples and spices as inter-crops. Other companies have acquired land to develop exports of fruit and vegetables. These include Awasa Greenwood (100 ha) and Ato Solomon (50 ha) at Awasa, Dinsho Agro-Industries (125 ha) near Debre Zeit, and Terra near Debre Berhan.

Several companies that exported fruit and vegetables in the late 1990s, such as Teppo Farms, Abuna and Kabi, now appear to be only producing for the domestic market. Meskel Flowers began to export green beans to Europe to complement its sales of roses but this company has run into financial problems.

Cooperatives

In addition to private companies, there are a number of cooperatives that are trying to develop horticultural exports. Of particular interest is the export programme being undertaken by VOCA Ethiopia – supported by USAID. The aim is to link small scale cooperative producers with producer exporters to obtain access to higher value vegetable markets, including export markets. This innovative programme, initially operating over three years (2003-5), is assisting the Meki Batu and the Alemaya Cooperative Unions to produce and export produce. VOCA has developed a number of programmes including the Smallholder Linkages Programme (SHLP) which is designed to strengthen the capacity of the Small Micro Enterprise (SME) Business Development Services. Planned activities include training in vegetable production

management, pest and disease control, and marketing. While the cooperatives can produce vegetables, efforts are being made to make them more business-orientated by working with a number private exporting companies, who want to acquire a sustainable supply of vegetables to develop export links. Initially the links are with Djibouti and the Ethiopian domestic market. In 2003, the Meki Batu Cooperative - located near Ziway - signed an agreement with two business service providers, namely Ethioflora and Valley Farms. For each company 4 ha of onions and 4 ha of tomatoes would be produced, as well as 15 ha of popcorn for Ethioflora. Initially the produce would be sold into the domestic market. The Meki Batu Cooperative Union has entered an agreement with the Green Star Food Company to undertake vegetable processing at its Debre Zeit processing plant.

In June 2003, the Alemaya Cooperative Union located in Harrar, signed an agreement with the Gurmed Fruit and Vegetable Exporters Share Company to supply approximately 1,300 tonnes of vegetables. The vegetables which include potatoes, beetroot, leek, carrot, lettuce, cabbage and onions, would be delivered weekly to Dire Dawa, for export to Djibouti by the company.

Another interesting cooperative operation is that involving Kaleb Services, which is working with some 1,400 cooperative producers near Awasa to grow organic pineapples for export to Europe. The company has obtained organic certification and for the past two seasons has been exporting small quantities of organic pineapples to Germany and, more recently, to a major UK supermarket.

PRODUCTION CONSTRAINTS

During the discussions with various stakeholders a range of production constraints were identified. These included:

Improved agronomic training

The need for training in agronomic management techniques was expressed. This was particularly in relation to developing the approach and attention to detail that is needed to compete with other exporting countries related to soil, pest and disease management strategies. One source suggested that in some areas over-cropping has

led to high levels of endemic pest and disease, which in turn leads to lower quality and yields. Hence there is a need for better crop rotation practices and greater use of integrated pest management practices. In addition, there are a number of issues surrounding the use of agrochemicals especially the problems of pesticide application and residues. Of all the possible issues that could stop exports to the EU and other overseas markets, poor control of pesticides is the greatest threat. It was felt that a list of chemicals permitted for use on produce supplied to the EU would be helpful. In addition, there are difficulties in importing some agrochemicals into Ethiopia.

Access to suitable planting material

Access to suitable planting material, particularly for export market orientated products, was seen as a constraint. The absence of a private sector company dealing with seeds for export vegetables was mentioned. However, it would seem that regulations have recently been loosened to allow producers to import seeds from overseas for export production, as long as this is only for individual use. It was felt that the most appropriate channel for this in the medium term was to use overseas suppliers as the main source. Others felt that access to planting material was not a major issue. Individual farm testing and trialling of new varieties is very expensive and as such is rarely undertaken, yet it fan be important to meet constantly changing and competitive markets. Producers are experiencing high costs related to lost production due to the planting of inappropriate varieties (related to both geographical conditions and market demands). A central facility providing such services to the sector as a whole is seen as a possible solution by producers. EHPEA has explored funding of such a facility with the French Embassy. However, it seems unlikely that they will be able to take this forward due to their restrictions on funding of infrastructure costs. This will need further exploration. It was also proposed that this facility could be used to deliver training to staff and managers to assist new entrants to the sector to rapidly develop capacity on their farms. Producers are keen to source donor funding for this initiative, however, alternative options such as joint public/private sector funding or provision of services on a fee paying basis by one private sector player should also be considered.

Availability of skilled manpower

While Ethiopia is over-supplied with low cost flexible unskilled labour there is a lack of skilled manpower with both managerial abilities and in-depth horticultural knowledge. Several companies saw the lack of skilled, experienced and efficient technical, managerial and supervision personnel as a major constraint on their activities. Until recently there were no university or training courses specifically designed for the horticultural sector. Now several institutions are running horticultural courses but these need to be expanded. The two most important are the Alemaya University, which has an M.Sc course in horticulture, and the Jimma College has a diploma and B.Sc course. In addition, Mekele University (Amhara), Debube University in Awasa and Ambo College are running related courses. These higher educational institutions need to be strengthened, as does the training of existing employees on horticultural enterprises. The EHPEA should liaise with these to ensure that Ethiopian technicians are trained in the appropriate technical skills.

Smallholder exports

The Dearden (2002) study did little to review the ways in which smallholders could increase their access to the export market. A trend in horticultural exports from other Sub-Saharan producers (e.g. Kenya, South Africa, and Zimbabwe) in recent years has been a reduced role for smallholders in the export sector. Nevertheless, based on best practice elsewhere it should be possible to develop realistic and pragmatic solutions facilitating smallholder involvement (e.g. contract farming). The recent CD-Rom developed by NRI on "*Small Producers in export horticulture: A guide to best practice*" discusses these issues in considerable detail and the various means/systems that can be used to development smallholder involvement and thus have a positive poverty impact.

2.3 COLD CHAIN AND POST-HARVEST HANDLING SYSTEMS

COLD STORAGE

Post-harvest cooling, handling and storage systems are vital to maintaining the quality of fruit and vegetables for export. The development of cold stores as part of a vertically integrated system is the most efficient in terms of maintaining the cold chain and managing the produce handling chain from pre- to post-production (see Section 3.3). In most countries, vertically integrated systems are almost wholly in the private sector. Currently, in Ethiopia there is no integrated cool chain for handling fruit and vegetable exports. In the public sector, Etfruit the state marketing company and the two state farms (UAAEI and HDE) have cold store operations. In addition, there are at least two privately owned cold stores in Ethiopia, namely the Ethioflora and Valley/Tippu cold stores at Ziway, although the latter stopped operating following the cessation of exports. Although a detailed survey of these stores was not undertaken, discussions suggest that there are issues relating not only to their ability to comply with hygiene and food safety regulations but also about their capacity and efficiency of usage. To export successfully, producers need to develop good practice in harvesting and handling in the field and to support this by rapid chill and good cold storage capacity and handling along the supply chain.

Refrigerated trucks are vital for the internal transportation of most export produce. Etfruit is the dominant provider of refrigerated trucking services from the state farms and some private farms to cooling facilities in Addis Ababa and to the airport. Most of Etfruit's trucks are old and obsolete with inefficient cooling facilities in many cases, as well as poor speed and carrying capacity. Moreover, charges are quite high and the high internal freight transport costs reduce Ethiopia's competitiveness. Ideally export produce should be transported from the packhouse in aircraft containers or on pallets that could be directly loaded onto the aircraft under full cold-chain conditions.

Not only does there appear to be a very limited availability of refrigerated trucks, but also there is only one cold store at the airport. The latter is a state of the art private sector operation, which has recently been taken over by a Dutch company. Under the initial owners the facility was under-utilised, in part because of the high cost.

However, it is close to the new cargo terminal. The store has been built and equipped to a very high standard and is customs bonded. While quoted costs per kilogram are considered to be high, once growers start to schedule regular higher volumes it should be possible to agree either reduced rates, hire of a chill chamber or a service contract. The ability to use an airport cold store will also have the advantage of freeing up chilled vehicles to make more delivery runs, allow aircraft pallets and containers to be made up in chilled conditions and assist with the management of cargo off-loads.

HANDLING ISSUES AND PACKAGING

Very recently there has been a growing awareness among a small number of producers and exporters that handling and the associated packhouse operations have to improve considerably if exports to EU markets are to take place. Most of the small number of packhouse facilities (where sorting, grading, quality control, weighing, packing and pre-cooling and cold storage for export is undertaken) as well as some transport equipment would not currently satisfy EUREPGAP or European supermarket codes of practice. These codes cover production and harvesting methods and a range of other issues including environmental, social, health, hygiene, energy and product safety. At least four companies, namely the two state companies UAAEI and HDE, as well as Ethioflora and ETCO are up-grading their production and handling practices in an effort to become EUREPGAP compliant in 2004.

While Ethiopia has established minimum export quality standards for some fruit and vegetables there is a need to ensure that ensure that adequate control exists over export quality both access to the European market and to ensure that Ethiopia's reputation is not damaged. Access to detailed technical know-how, combined with the acquisition of various improved equipment and improved management would enable the existing facilities and systems to be brought up to standard. This will be a large undertaking involving a considerable amount of development of procedures and staff training but it is quite achievable with appropriate advice and guidance.

A related issue is that of the quality of local packaging used for horticulture exports, which are unlikely to meet the regulatory demands of the target market. The problems relate to the strength and quality of the cartons, the attractiveness of the

labelling, the design and the cost. As yet, the technology necessary to produce double corrugated cartons does not appear to be available in Ethiopia. Part of the problem relates to a lack of critical mass, in that export volumes are relatively small while there is a very limited demand for quality packaging for local market utilisation.

The whole issue of quality control and assurance at the packhouse and along the cold chain has become a major area of concern for Ethiopian producers and exporters. Improvements are needed to meet EU standards. Sizeable investments are required to establish appropriate packhouse and cold chain facilities in order to provide quality and consistent supplies to European markets. In practical terms it would be difficult to maintain standards across a range of small packing/cold storage sites which are likely to suffer from low levels of investment and limited management. A central facility is possibly the best option. The EHPEA has proposed the establishment of a central packhouse and cold room, available for use by all in the horticulture sector. It believes that initially at least three such facilities are required. One located around Ziway area for fruit and vegetable exporters' use in that area, and a second at Holetta serving the flourishing flower industry in the area. The third around Bole international airport with easy access to the terminals would serve the entire export horticulture sector, i.e., vegetables, fruits and flowers. It is assumed that these facilities will give services to all horticultural exporters in common. However, substantial financing is required for this type of venture and there is a need to explore the possibilities of financing through commercial/development banks.

POST-HARVEST TECHNICAL ASSISTANCE

Producers felt a need post-harvest (as well as pre-harvest) technical assistance. The focus for post-harvest work is usually handling/chilling/storage regimes, post-harvest treatments involving the use of specialist packaging and other treatments to maintain product life. The producers requested assistance in this area.

2.4 MARKETING – DOMESTIC AND INTERNATIONAL

THE DOMESTIC MARKET

Almost all of Ethiopia's fruit and vegetable production is consumed domestically. Accurate production and consumption data are not available. One source (Agonafir 2003) suggests annual domestic consumption approaches 3 million tonnes (Annex 5. Table 2.4), although the FAO production estimates are substantially lower at approximately 720,000 tonnes, while Sisay Habte (see Annex 3) places production at approximately 2.6 million tonnes. Meanwhile, annual fruit and vegetable exports are only of the order of approximately 30,000 tonnes (Tables 2.5 and 2.6).

Much of domestic consumption does not enter the market and is not commercialised. However, small-scale producers selling on local rural and urban markets still play a vital role in supplying the domestic market. Meanwhile, sales in urban supermarkets appear to be growing quickly but they still play a very minor role in the marketing chain. An important supplier in the urban areas is the state-owned Etfruit (Ethiopian Fruit and Vegetable Marketing Enterprise), which has retail outlets and/or mobile units in most of the major towns. Sales to the domestic market dominate Etfruit's activities. State farm products are predominantly distributed into the domestic market through Etfruit. In 1998 Etfruit's sales to the domestic market totalled 49,526 tonnes valued at 106.6 mn birr. As with the state farms, Etfruit is currently being prepared for privatisation and has been reported as profitable for most years of its existence. It has approximately 280 permanent employees and hires an additional 200-400 casual labourers during certain harvesting seasons. Etfruit owns a small fleet of refrigerated and non-refrigerated trucks, as well as several warehouses and its own supply of packaging materials. The role and quality of these refrigerated trucks was discussed in Section 2.2 on the cool chain.

ETHIOPIAN EXPORTS

Exports of horticultural products and their share of total agriculture exports from 1994 to 2001 are shown in Table 2.5. Export data by product type for 2000 to 2002 are shown in Table 2.6. Again the data must be treated with some degree of caution - for example, the level of cut flower exports in 2001 is clearly incorrect. The fruit and

vegetable sub-sector as a whole accounts for less than 2% of agriculture export values and between 4 and 8% of export volumes. Vegetables invariably account for over 75% of horticultural export earnings, while fruit and vegetable exports are substantially higher than cut flowers but this is likely to change – at least in value terms as cut flower exports expand. In 2002 the volume of fruit and vegetable exports was approximately 32,000 tonnes with an export value of $11.3 million dollars. Of this total, fruits accounted for approximately 5,000 tonnes valued at $2.7 million. The export data suggest sizeable annual fluctuations but in recent years there has been a substantial increase in exports especially vegetables. However, one source suggested that, in part, this may be because of improved recording of exports to neighbouring Djibouti, which is the dominant overseas market. Exports can be categorised into three types. First, the 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 Djibouti and, third, some processed and fresh produce to Middle East countries including Saudi Arabia and Yemen as well as Sudan.

The export of fruit and vegetables from Ethiopia, particularly to Europe is not new. Indeed exports grew rapidly during the early 1970s from 18,000 tonnes valued at 5.8 mn birr in 1970 to 33,600 tonnes valued at 12.5 mn birr in 1974. In volume terms this is still higher than current levels. Following the 1974 Revolution, efforts by private sector companies to export were thwarted and there was a substantial fall in exports. Under the Derg the state-owned farms dominated exports to Europe and the Middle East countries. In the late 1980s exports began to grow again, but failed to achieve the levels reached prior to 1974.

Despite approximately 25 different types of fruit and vegetables being exported, a small number of product types dominate. Thus potatoes, tomatoes, onions, legumes and beans dominate vegetable sales, each with several thousand tonnes being exported annually. The first four products are unlikely to find markets in Europe and are sold predominantly to Djibouti. Bobby beans dominate shipments to Europe. Oranges are the main fruit exports although there has recently been a growth in banana exports. Other fruits exported include dates, figs, pineapples, avocadoes, oranges, mandarins, lemons, limes, guava, grapefruit, grapes, melons, papayas, apples, pears, cherries and peaches. Djibouti is the dominant fruit market, followed by Yemen, while exports to Europe were negligible in comparison.

In 2002, Ethiopian fruit and vegetables were exported to 36 countries in Europe, Americas, Asia, Africa and the Middle East (Table 2.7). However, approximately 70% of exports by volume – and 60% by value – are shipped to Djibouti. The second largest export market in volume terms is Sudan, which imported 1,664 tonnes in 2002. Total exports to Europe in 2002 were below 2,000 tonnes with Italy, the Netherlands, Germany and Switzerland being the major markets. Shipments to the Middle East are also small, accounting for less than 5% of Ethiopian exports. Yemen and Saudi Arabia are the major markets.

The state farms undertake a sizeable proportion of exports. Until recently, state farm exports were undertaken by Etfruit, which also undertook some exports for a private sector operation. Etfruit was paid on a commission basis, which in 2002 was reported as 2.2% of gross sales. In 1998 Etfruit exported 17,011 tonnes valued at 31.5 million birr. Etfruit would collect produce from several state farms and large private farms in its refrigerated trucks and transport the produce to the airport from where it was air freighted to EU markets. Bobby beans dominated exports, but other produce included tomatoes, mangoes and papaya. The state enterprises became increasingly disillusioned with Etfruit's marketing role and the two exporting state farms and a private sector company now undertake their own marketing operations.

The state farms account for the largest share of exports to the EU. Currently bobby beans dominate and efforts are being made to substantial increase the volumes exported in the current 2003/4 season. The small number of private exporters currently exporting (or planning to export) vegetables to Europe are planning to have a mixed marketing strategy involving current exports to Italy, further development of the Dutch market, which also supplies Germany, and a longer term aim of UK supply of added value pre-packed produce. They are also interested in diversification into other vegetables such as mange-tout and sugar snap peas that would be best produced in the cooler highland areas. This strategy relies on significant improvements to production and supply capacity. Production capacity is currently based on the existing vegetable farms and state farm production. Collaboration between the state farms and the private sector this season has enabled the critical mass required for regular air charters of cargo planes benefiting both parties. There has also been input

from the private sector on quality standards and marketing. This may be helpful in moving state farms towards the approach needed when they become privatised. There remains growth potential within the existing production base. There is also the development of new farms at Awassa and Ziway. To develop existing and new production the growers have agreed to work together and share essential inputs such as overseas technical advisors and develop local capacity and staff training.

A good supply chain remains critical to maintain acceptable quality and cope with increased volume supply. The growers feel the only practical and financially viable approach is to develop a large shared cold storage and packing facility in the production area. The EPHEA is considering possible ways to raise loan funding for these facilities (see Section 2.3)

MARKET INFORMATION AND ACCESS

Information about export markets is currently limited, not only in terms of destinations and types of products but also in terms of consumer requirements and demands. Without improved provision of such information it will be very difficult to expand exports. There is a need to undertake market studies to determine the range of products in demand in the target market(s); issues to be addressed include volumes, varieties, seasonality, quality requirements, and most importantly whether Ethiopia is competitive. Without continued access to relevant market information it will be very difficult for Ethiopia to compete. In the past, Etfruit was the dominant Ethiopian horticultural exporter and was responsible for market development and provision of information. However, the organisation failed to feed back market information to growers.

Both the EEPA and the EHPEA see the sourcing and provision of such information as an important function of their activities. They need to devise a marketing and promotional strategy, which includes the collection, amplification and dissemination of market information as well as the promotion of exports. This could include the preparation of product profiles by market and the identification of potential market niches and the relative competitive advantage of Ethiopia to supply the products at the

price, quality and time required. As part of this trade awareness process, study tours to both European and Middle Eastern market should be undertaken. One small study tour to the EU funded by DFID has already been organised for a group of existing and potential vegetable exporters. In addition, a study visit should be made to Kenya to hold discussions with successful growers and exporters as well as the various associations. It is important to identify and develop good and reliable relations with importers, traders or wholesalers in the target market(s). Importers have up-to-date information on the latest market developments. As regards promotion, there have been some modest efforts in the past and trade missions and visits to international trade fairs have been undertaken. Further efforts are needed such as promotional assistance to penetrate new markets, the production of promotional materials including press releases, attendance at key trade fairs e.g. ENUGA. This could be on a collaborative cost sharing basis with public or donor assistance.

EUREPGAP Compliance

As outlined in Chapter 4, the European markets are becoming increasingly demanding with regard to production and processing standards. It would appear that the majority of European markets are aligning themselves with the standards currently demanded by the UK. For example, the major Dutch importer of beans from Ethiopia is asking his suppliers to become EUREPGAP compliant, preferably by the end of 2003 in order to ensure future sales. Significant improvements are needed if Ethiopian farms are to achieve certification in the next few months. It is possible to supply the European wholesale markets without certification but lack of certification will certainly limit marketing opportunities.

Although the state farms and a few private sector producers and exporters want to pursue certification, there is a general lack of awareness at present of standards, procedures and processes that are required to obtain certification. The lack of awareness that exists across the whole sub-sector not only includes producers and exporters but also various government organisations such as the Ministry of Trade and Industry, Ministry of Agriculture, Export Promotion Agency and Ethiopian Standards Agency. Awareness has been raised recently by the EHPEA/DFID workshop in October 2003, which was followed by some individual farm assessments to ascertain the nature of the work that needed to done to achieve compliance.

Freight Issues

As yet, the logistics of shipping perishable produce through Djibouti port make sea freight an unviable option, despite the improved road links and the acquisition of refrigerated trucks. Etfruit undertakes regular *imports* of fresh fruit from South Africa via Djibouti, so the potential to use its refrigerated trucks for exports exists, assuming markets and viable sea freight options can be found. Moreover, the company Green Focus Ethiopia which is planting mangoes and other produce is planning to export produce by sea to Middle East markets (see Section 2.2). However, for the next few years airfreight will be the dominant mode of transport for perishable horticultural exports. Currently, everyone concerned with developing the export of fruit and vegetables recognised that the frequency, availability and capacity of air freight is a major impediment to exporting produce to European and Middle East markets.

Issues of freight handling and air cargo capacity were major issues discussed at the Workshop (see Annex 3). The State Minister of Trade endorsed this view – and said it was one of the major issues to be discussed at the next meeting of the Public-Private Sector Forum (see Section 2.5). The issue of capacity of Ethiopian Airlines (EA), in addition to the monopoly and accompanying high charges for freight handling held by EA were raised as a major constraint by the Dutch horticultural trade mission which visited Ethiopia in May 2003. Prime Minister Meles showed an interest in this area and the topic has been discussed at the Public-Private Sector Forum Meeting. There are large differences between freight handling charges in Ethiopia and other competing countries. These high handling charges at the airport not only impact significantly on the competitiveness of the sector but also reduce the incentives for new cargo airlines to land in Addis. For example, although Martin Air has apparently been given permission to establish cargo charter operations at Bole Airport, the high handling charges imposed by EA are delaying its arrival. In late 2003 it was reported that handling charges had been reduced.

Ethiopian Airlines is the major freight provider and most producers are keen to continue to use EA due to the price advantage this gives them over producers in other countries. Following meetings with government and producers in late 2002, EA

agreed to freeze rates at $0.90 per kilo as opposed to charges of $1.35 charged by Lufthansa in Ethiopia and $1.40 per kilo and above paid by Kenyan producers. However, most producers/exporters face significant problems with EA. One problem is the low capacity of the airline, which is unable to cope with existing production. This will be exacerbated in the coming months as existing producers expand and new flower producers enter the market. However, in the medium term this expansion will provide the critical mass necessary to expand the use of charter cargo flights and reduce dependence on passenger aircraft. Another problem is that agreements to take certain levels of produce have been interpreted differently by the airline and producers, leading to the rescission of commitments and off-loading of produce at the last minute. This problem is particularly acute for the flower sector due to the large bulk / low weight nature of the product.

INFRASTRUCTURE CONSTRAINTS

Ethiopia has poorly developed infrastructural facilities, which act as a severe constraint on development, and particularly undermines the profitability of enterprises some distance from Addis Ababa. Examples of the underdeveloped infrastructure include poor and costly road transport and telecommunication facilities, restricted utility supplies, particularly energy and electricity supplies. The continuous availability of power supplies is vital for efficient horticultural production and exports. Power interruptions can create problems for irrigation, cooling and processing operations and necessitate the purchase of stand-by generators, thus raising production costs.

2.5 INSTITUTIONAL AND REGULATORY SITUATION

INTRODUCTION

Strong institutions and a suitable regulatory environment are vital components in expanding fruit and vegetable exports. This section provides an outline of current institutions involved in the development of the horticulture sector in Ethiopia, including Government organisations and Ministries, particularly the Ethiopian Export Promotion Agency (EEPA). One key institution vital to the successful development of horticulture exports is the recently formed Ethiopian Horticulture Producers and Exporters Association (EHPEA). In addition, there is a brief discussion of the involvement of various donor agencies. The roles of the two major state farms and some details of private sector producers were outlined in Section 2.2.

There are a number of institutional constraints to the expansion of fruit and vegetable exports. Some of these constraints are outlined below in the discussions of the specific institutions. Also there are institutional factors/processes that affect horticultural exports. These include inefficient bureaucracy, lack of agronomic and business skills; customs procedures; access to production and export finance; the lack of adequate export marketing and promotion services; and, lack of information on markets and foreign trade opportunities. (ITC 2001,World Bank 2002, Dearden 2002)

GOVERNMENT AND PARASTATAL ORGANISATIONS

A range of public bodies has some involvement in the sector but it is impossible to detail them all. The Ministry of Trade and Industry (MOTI) has the main responsibility for trade policy and development in consultation with the Prime Minister's Office and other Government Agencies, including the Ethiopian Export Promotion Agency (EEPA) and the Ethiopian Investment Authority which are under the MOTI. In 2002 the Public-Private Dialogue Forum was established and is chaired by the Minister of Trade and Industry.

Ethiopian Export Promotion Agency (EEPA)

The EEPA was set up in 1998 with the specific mandate of promoting Ethiopian exports. However, according to the recent Diagnostic Trade Integration Study (DTIS),

it lacks a suitable framework and resources to carry on its mandate. One area where it could be more useful is to provide better access to information on foreign markets, preferably on a cost-sharing basis with exporting companies (both private and public). Recent initiatives in the EU (Everything but Arms) and the US (Agriculture Growth Opportunity Act – AGOA) are providing even greater opportunities for Ethiopian exports.

The main services that the EEPA is mandated to provide include:

- the provision of training and support to exporters;
- ensuring that export procedures of various institutions are relevant and conducive to export development;
- undertaking and disseminating studies of overseas markets;
- linking exporters with foreign importers;
- facilitating participation by exporters in international trade fairs and trade promotion events;
- collecting, analysing and disseminating trade related information;
- encouraging co-ordinated and efficient working arrangements between producers, exporters and service providers.

In an effort to facilitate the EEPA's trade support services a Trade Point has been established by UNCTAD, which aims to increase the participation of small and medium sized enterprises in international trade. It provides information on business and market opportunities, as well as trade regulations and requirements, to private sector organisations.

Ethiopian Investment Authority (EIA)

The EIA serves as a one-stop shop for investors and has played an important role in facilitating foreign investment in the horticulture sector. Among its functions are the promotion of investment, the provision of information and the receiving and approval of investment applications and permits. 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 and the introduction of incentive schemes for

exporters. In addition, policies have been introduced aimed at increasing exports. These include the introduction of 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, there exist limitations in implementation and it has been realised that these schemes are not enough.

Ethiopian Quality and Standard Authority (QSAE)

The QSAE is the sole Government institution responsible for the formulation of national standards. Its mission statement is "to promote the concepts and practice of quality and assist their realisation by providing an efficient and effective certification, standards, calibration and testing services." Some of its objectives include:

- promoting and assisting the establishment of appropriate quality management practices;
- assisting in the improvement of the quality of products and processes through the promotion and application of Ethiopian standards;
- promoting and co-ordinating standardisation at all levels in the country;
- strengthening and promoting the reliability of testing laboratories nation-wide.

Meeting international standard requirements is recognised as a great challenge for Ethiopia but the Government firmly believes that implementation of ISO requirements will enable exporters to offer products that satisfy consumer expectations; comply with applicable standards and specifications; and meet statutory and other requirements for health, safety and the environment. The QSAE is monitoring the efforts to obtain EUREPGAP certification by horticultural producers and exporters. In addition it is endeavouring to make the public aware of the importance of standards and quality. Eventually it is anticipated that the QSAE will be able to undertake certification acceptable to international standards. However, the QSAE faces a number of constraints including the shortage of qualified and experienced professionals in areas such as product certification.

Public-Private Dialogue Forum

The Forum, chaired by the Minister of Trade and Industry, was established in 2002 and has facilitated improvements in the dialogue between the public and private sectors. In addition, there is a sub-group, which discusses issues relating to the horticulture sector. Members of the Forum include stakeholders from the private and public sectors. Contentious issues affecting private sector operators are frankly discussed and mutually acceptable solutions sought. Among the issues discussed that affect the horticulture sector are air freight availability and cost as well as the high level of handling charges; the level of withholding tax on imports (subsequently reduced), customs procedures and land availability.

Ministry of Agriculture

As yet the Ministry of Agriculture appears to have had little direct involvement in the horticulture sector, having preferred to concentrate on other areas, particularly food security issues and cereals. However, this may be changing in line with Government's increasing interest in the sector. Thus, the Ethiopian Agricultural Research Organisation (EARO) recently developed a detailed plan for research strategies in horticultural products. Based on this analysis, as well as anticipated international market requirements, it is anticipated that commercially orientated research activities and extension priorities will be developed for the horticulture sub-sector. The research results would then be used by companies and other organisations in the sector. Another key constraint to the development of the horticulture sector is the availability and use of agro-chemicals. Government in part through the Ministry of Agriculture has facilitated imports of these products. Testing for MRLs (maximum residue levels) is also important. The Pesticide Research Centre at the Department of Agriculture is a highly equipped unit that could undertake this work but is not functioning effectively due to lack of technical knowledge and human resources.

Finally one recently established organisation, the Cooperative Commission, could play a role in organising smallholder cooperative groups for fruit and vegetable production. Currently, it is concentrating solely on supplying the domestic market.

ETHIOPIAN HORTICULTURE PRODUCERS AND EXPORTERS ASSOCIATION (EHPEA)

The EHPEA was established in September 2002 as a not-for-profit organisation to represent the whole horticulture sector (i.e. vegetables, fruits and flowers). It is the only national association representing the sector and has the overall aim of promoting sustainable growth of Ethiopia's private sector horticulture production and exports. To achieve this, its core objectives are:

- to bring together horticulture exporters in order to promote the private sector export horticulture industry;
- to represent and promote the interests of the private export horticulture sector at national and regional levels, such as through discussions in the Public-Private Forum and with the Chambers of Commerce as well as with airlines, cold storage and airport handling agencies;
- to help build the capacity of EHPEA members to understand international markets and to meet their demands;
- to assist in the promotion of horticulture exports in international markets; and
- to represent and promote the interests of the export horticulture sector at the international level.

EHPEA's membership is open to all interested businesses engaged in the horticulture sector in the country. Currently EHPEA has ten registered companies as its founding members. It is expected that membership will increase very soon as other companies have already submitted applications for membership and many new horticultural enterprises are being established in Ethiopia. EHPEA's members include both domestic and foreign companies operating in the country. EHPEA is also keen to work together and be a member of other regional and/or international associations in the horticulture industry.

Currently the EHPEA has an Executive Committee and an Audit Committee both elected among members for two years term and reporting directly to the general assembly. The EHPEA office is run by a full-time Executive Director and Executive

Assistant, who are responsible for the day-to-day activities of the association. The sources of EHPEA's finance are members' contributions and national and international donors. At this initial stage EHPEA has secured support from the UK Department for International Development (DFID), which is funding the operation of the office and some specific activities including two study tours and assistance with achieving EUREPGAP compliance for some members. The EHPEA is currently drawing up a business plan and is looking for other donors for its horticultural capacity building projects.

DONORS/ORGANISATIONS WITH INTERESTS IN ETHIOPIAN HORTICULTURE

Over the past decade several organisations have been providing some limited form of assistance to the horticulture sector in Ethiopia. During the past year, the UK's DFID has become a leading donor supporting the commercial horticultural sector, and there is interest from a number of other donors who would like to become more closely involved, including the Dutch, the USA and the French. Their interests and involvement are briefly outlined below, followed by a note on the recognized need for better donor collaboration.

UK Department for International Development (DFID)

A study on *Horticulture Exports from Ethiopia and EU Supermarket Sourcing* (Dearden, Greenhalgh, Havis 2002) was funded by the UK's Department for International Development (DFID) following meetings between Prime Minister Meles and Clare Short, the UK Secretary for International Development. The report is a scoping study of opportunities and constraints related to Ethiopia exporting horticultural produce to EU markets including UK supermarkets. It identifies a possible way forward and makes recommendations to the Government of Ethiopia, to Ethiopian private sector operators and to international aid donors. The study, which had the full support of the Prime Minister, acted as a catalyst in bringing together major stakeholders in the sector.

Following on from the Dearden (2002) study, DFID has funded various activities through its Export Horticultural Project. This intervention was instrumental in

establishing and supporting the EHPEA with funding being provided for the office and full-time Executive Director as well as advice on EHPEA's Articles of Association and Constitution as well as the development of a strategic two-year business plan. Additional funds are being provided to facilitate the further development of the sector through consultancy support, workshops and provision of market information. A European market access tour has been funded for vegetable exporters and a similar tour is being planned for rose growers as well as a possible visit to another African horticulture exporting country. In October 2003 an awareness-raising workshop was held on EUREPGAP certification followed by site visits to two private exporting companies to advise on the work required to attain certification. EUREPGAP certification is a pre-requisite for export to UK supermarkets, and is increasingly demanded by some European buyers. The major Dutch importer of Ethiopian bobby beans is also working closely with the two state enterprises, namely UAAEI and HDE to obtain EUREPGAP compliance. Without this certification growers will find their market base severely restricted and will risk losing access to markets they currently supply.

The Netherlands

The Dutch Embassy has shown a keen interest in the sector through the organisation of a 50 strong trade mission in May 2003 as well as funding Business to Business Partnership for horticulture companies. In addition, it has expressed a willingness to support further interventions.

Overall there was a very positive feedback given by the 50-strong horticultural trade mission to Ethiopia. The Ethiopian Government's commitment to the sector provided good levels of confidence. Nevertheless the constraints to the sector were noted, in particular the issue of bureaucracy, land availability and air freight handling. The Dutch have been considering various ways of overcoming these constraints.

The Dutch funded PSOM (Programme for Cooperation with
Emerging Markets) is likely to be of direct benefit to the horticulture sector. Support is provided for Dutch companies, in collaboration with local counterparts, who wish to invest in Ethiopia. There are various project criteria including: poverty focus; offers a genuine sustainable trade relationship; facilitates replication and follow-up activities; and involves the transfer of knowledge. The duration of a PSOM project is

typically two years and the PSOM contribution (average of 500,000 Euro) to the project is 60%. Selection is based on competitive tender, and it is believed that at least two Ethiopian horticulture projects have been successful in their bids.

United States of America

USAID are broadly interested in trade and private sector development issues and specifically interested in looking more broadly at the wider enabling environment for business. They see the recently produced DTIS (funded by World Bank and others) as providing a focal point for both Government and donors to address policy constraints to horticulture private sector development (as well as many other sectors in the economy). USAID is interested in expanding its involvement in the horticulture sector from smallholders to the commercial sector and in late 2003 was reviewing possible inputs. USAID has expressed a desire to set up a sub-group of the Trade and Private Sector donor working group, which the Dutch and DFID have endorsed, to better co-ordinate support to the sector. USAID are currently working in the horticulture sector at smallholder level (via VOCA with farm out-growers – discussed in Section 2.2) and are interested in looking at support to the larger commercial exporting sector.

France

The French have an interest in the horticultural sector although they are not currently supporting any interventions. Some three years ago they undertook a feasibility study for support, which concluded that the establishment of a research, training and certification centre would be beneficial to the sector. Developments on this were stalled due to the proposed implementation plan of the Ethiopian Export Promotion Agency (EEPA), which wished to run the centre through existing administrative systems, as opposed to the preferred French option which was to set up an independent centre outside of the EEPA.

The French Ministry of Finance has funds of approximately Euro 30 million for agricultural export development (Agricultural Export Fund) in 12 countries. These funds are essentially for technical assistance, training and studies ("soft investments") rather than capital investment. As with all Cooperation funds, monies need to transfer

through the Ministry of Finance via a national authorising officer to a civil society organisation. Both the EEPA and the EHPEA have been discussing possible access to these funds, but as yet nothing concrete has materialised, although some projects are likely to begin in 2004. In the horticulture sector it is anticipated that French assistance will be used for strengthening export capacities in the floriculture sector. The Economic and Commercial Department of the French Embassy together with the AFD (Agence Française de Développement) will be responsible for the programme and the envisaged partner is the EEPA.

Irish Embassy

Irish support to the horticulture sector has focused on small-scale farmers producing for household or local domestic use rather than for export.

Other Institutions

The World Bank is involved in a number of initiatives that could impact on the horticulture sector. This includes capacity building support to the private sector. One project currently being finalised covers capacity building at the firm level (via a matching grant scheme); support for Associations (capacity building plus possibility for funding networking amongst members); economy wide initiatives such as support to Chambers of Commerce, Export Promotion Agency; Investment Authority and so on. The EU has a very similar programme.

The World Bank, IMF, WTO, UNCTAD and EU are funding the Diagnostic Trade Integration Study, which is currently being debated and could act as a focal point for Government/donor support for private sector development. This a broad based study covering sectoral constraints related, amongst others, to trade reform and incentives; market access; foreign direct investment and trade; the legal and regulatory environment. The DTIS could provide a focal point for more collaborative work.

Donor Collaboration

The need for improved donor collaboration in the horticulture sector was generally recognized and at the Workshop backing was provided for the idea of setting up a joint horticultural sector working group. It was suggested that the establishment of a working group focusing specifically on the horticultural sector (under the Trade and PSD working group) would be an important step to better collaboration between donors.

2.6 OVERVIEW OF CONSTRAINTS AND NEEDS

INTRODUCTION

Ethiopia is recognized as having many of the attributes favourable to the production and export of fruit and vegetables, but, as yet, this export sub-sector remains underdeveloped. In the previous sections, key constraints limiting the growth of exports have been identified and discussed. These include various production constraints (e.g. access to land, agronomic practices, access to planting materials, lack of trained labour); inadequate cold chain infrastructure and post-harvest handling practices; logistical and infrastructure constraints; limited air freight availability and cost; weak entrepreneurial skills; availability of finance; limited technical and marketing expertise and knowledge; lack of suitable packaging and agrochemical input availability; a lack of critical export mass.

Recent Progress

Over the past two years considerable progress has been made in creating an enabling environment for the expansion of the horticulture sector. Thus, the Government of Ethiopia (GOE) indicated that the recommendations made in the Dearden July 2002 Report are in line with GOE policy. In December 2002 Prime Minister Meles participated in a meeting called by government to discuss horticulture exports. Producers, government and public agencies were present, and following the PM's prompting, undertakings were given on a number of the important issues raised in the Dearden report, but these mainly related to the floriculture sector. Issues agreed included:

- Ethiopian Airlines gave undertakings about guaranteed access to freight space and price for two years.
- The Development Bank of Ethiopia agreed to set up a dedicated unit to help finance horticulture investment, since when millions of Birr have been made available to investors in horticulture.
- GOE agreed to allocate around 300 ha of land near Addis Ababa for floriculture investors.

- As regards imported inputs for the sector, it was agreed that import duty on imported inputs for locally produced packing materials used by exporters will be waived.
- A streamlined procedure for handling agrochemicals would be developed.

Other steps that have been taken include:

- GOE approval for the establishment of the Ethiopia Horticulture Producer Exporters' Association (EHPEA) following an application from a group of private horticulture exporters;
- GOE has established a Government-Business Dialogue Forum which meets regularly and discusses aspects of the horticulture sector;
- With funding from VOCA, some co-operative vegetable growers have started to collaborate with exporters both to supply the domestic market as well as export produce to Djibouti.
- A study tour of EU markets has been undertaken by a small group of vegetable producers/exporters.
- A successful workshop was held on 20 October 2003 to discuss aspects of achieving EUREPGAP compliance, which will be important if companies are to export to EU markets.
- Another workshop was held on October 30 under the auspices of this project to discuss aspects of export diversification. At this meeting, several donor expressed interest in working in assisting horticulture sector development. The record of the workshop is contained in Annex 3.

POSSIBLE INTERVENTIONS

Despite recent progress, there are still a large number of areas where initiatives need to be taken to facilitate an expansion of fruit and vegetable exports. Technical assistance could help in many areas of the sub-sector to enhance export production and marketing, as well as have spin-offs not only for domestic production and markets but also for other sectors.

A number of topics were proposed during the Group and Round Up discussions at the end of the Workshop in Ethiopia on October 30 (see Annex 3), namely:

> "Continued policy support and encouragement need to be provided for the commercial production of fruits and vegetables including credit facilities at favourable conditions, better water management and utilization techniques as well as better land use policy. Furthermore, it was underlined that a Steering Committee comprising public and private sector stakeholders should be established to regularly monitor developments and address emerging issues on a regular basis. The need to strengthen producer-exporter associations was also emphasised."
>
> With regard to the marketing group conclusions, the following priority areas were identified for action oriented measures:
>
> - Measures to enhance marketing efficiency including transportation, packaging, storage, quality assurance and market promotion;
> - Human capacity building including training of farmers, upgrading skills at all levels, strengthening the organisational capacity of farmers and traders, building awareness of market requirements, etc.
> - Availability of financing to the sector on favourable terms and conditions."

The Workshop conclusions, combined with the research undertaken for the study have led to a list of possible projects and interventions, which are outlined below. These have not been prioritised but are related to their position in the marketing chain, namely production, cold chain and post-harvest handling and marketing, while some are cross cutting. In the concluding Chapter 5 some prioritisation is presented. However, the list outlined below may help to assist other donors who are considering the provision of assistance to the horticulture sector.

Production

Improved agronomic practices

In Section 2.2 a number of production constraints were identified including:

- The need for improved agronomic management techniques, particularly for export products; specifically cited were improved soil, pest and disease management strategies, including *the use of agrochemicals and the problems of pesticide application and residues.*
- Support is needed in the *provision of suitable planting materials* for export products, including new varieties, since there are no in-country research facilities able to do variety trials, develop good agronomic practice and give staff training. Recent discussions with major importing companies supplying EU supermarkets revealed that they are looking for new varieties of products (e.g. new varieties of mangoes, passion fruit, avocados) in order to develop differentiated products. The wide bio-diversity of Ethiopia could provide ample opportunities but it may be necessary to improve the capacities of local institutions to achieve this objective. Associated with this, is the need to indicate areas for appropriate technical innovation if feasible (e.g. variety/production system/infrastructure). A central facility providing such services to the sector as a whole is seen as a possible solution and the EHPEA is exploring funding possibilities.

Smallholder Contract Farming/Outgrower Schemes

Technical and financial assistance could play a role in helping to organise small-scale producers. Various options are available including contract farming and outgrowing schemes. Contract farming by smallholders has a number of advantages over larger scale commercial farming in terms of labour availability and cost, crop care, supply continuity, motivation and management control, and poses fewer problems of disease and allows for inter-cropping, which increases protection against wind damage. However, there are a number of constraints facing smallholder outgrower contract schemes including loan default, side selling, poor quality and technical growing capabilities, poor transport and logistics. Nevertheless, based on best practice

elsewhere, including the work of VOCA with the Cooperative Unions (see Section 2.2), it should be possible to develop realistic and pragmatic solutions facilitating smallholder involvement (e.g. contract farming). The recent CD-Rom developed by NRI on *"The role of smallholders in export horticulture: A guide to best practice"* discusses these issues and the various means and systems that can be used to development smallholder involvement in exports. The Government and EHPEA appear to be in favour of developing contract/outgrower schemes and one possibility is the use of some areas on the existing state farms.

State Farms

A major factor facilitating the growth of the Ethiopian horticultural export sector could be the successful privatisation of the state farms, which currently dominate fruit and vegetable exports. For a variety of reasons, state farm operations (UAAEI and HDE) and the parastatal marketing company (Etfruit) have found it very difficult to compete in EU markets. Experience elsewhere has shown that the dynamism of international horticultural markets makes it very difficult for the sector to be led by publicly owned enterprises. Private initiatives must drive the industry. The two state farms have a combined total land area of approximately 11,000 hectares, most of which is relatively close to Bole International Airport. If these lands can attract the quality of investment needed combined with a suitable privatisation process then they can provide some of the best potential for expanding Ethiopian horticultural exports. As yet, it would seem that the initial high price placed on the assets of both state farms (and Etfruit) has reduced interest in their purchase as single lots. One option would be to break up the state farms into smaller units and provide loans to develop the farms. Land also might be made available for smallholders, especially if an insufficient number of commercial farmers were able to purchase the land. While these smallholders would be predominantly concerned with supplying the domestic market, some might be able to access the international market through contract farming initiatives.

Other production interventions

Support has been suggested for other interventions to assist production including:

- The Ethiopian Agricultural Research Organization (EARO) recently drew up detailed plans for research strategies in horticultural products.

- Facilitate production of organic produce and certification schemes.

- Land reform to facilitate security of tenure.

Cold Chain and Post-harvest Handling

It is widely recognised that technical assistance is needed to improve post-harvest handling practices, particularly with regard to improvements in cold storage facilities and packaging. Sizeable investments are required to upgrade packaging, packhouse and cold chain facilities to provide the quality and consistent supplies demanded by the EU and Middle East markets. Given the relatively small scale of production operations and the difficulties of maintaining standards across a range of small packing/cold storage sites, then centralised facilities may be the best option. The EHPEA has proposed the establishment of a central packhouse and cold room, available for use by all in the horticulture sector. It believes that initially at least three such facilities are required.

Markets and Marketing

A successful fruit and vegetable export sector has to be market driven. Currently, only limited export market information is available, not only in terms of product types and destinations but also in terms of consumer requirements and demands. More detailed analysis needs to be undertaken on target markets, volumes, varieties, seasonality, quality requirements, and Ethiopia's competitive position. In view of the constantly changing external horticultural market conditions, opportunities need to be continually assessed and thus it is vital that detailed and continuous market information is available. A range of marketing opportunities need to be explored to allow supply from a diverse production base and to develop a balanced and inclusive strategy incorporating European, Middle Eastern and local markets. Both the EEPA and the EHPEA see the sourcing and provision of market information as an important function of their activities. They need to devise marketing and promotional strategies

as well as organise further study tours and effective dissemination of market analysis. Financial and technical assistance to strengthen the capacity of these two organisations could play a key role not only in helping develop marketing strategies and the provision of marketing information but also in organising small scale exporters.

So far, other than the proposed (but as yet to be implemented) Focused Export Group approach, little has been done to develop a pragmatic and progressive export market strategy. Such a strategy needs to be undertaken accompanied by capacity building initiatives, possibly through a collaborative programme between the EEPA and EHPEA.

While the availability and cost of airfreight is widely recognized as a key constraint by almost all stakeholders in the sector, including the GOE, it is not immediately apparent what donor inputs can achieve.

Cross Cutting Issues

Facilitation of EUREPGAP compliance

A key constraint facing Ethiopian horticultural exporters over the next few years (especially those aiming to sell to the dominant EU market) is the need to meet various codes of practice and the associated certification and auditing requirements. It will be vital that Ethiopia builds up the capacity and structures necessary for producers and exporters to become EUREPGAP compliant, and thus able to satisfy import market requirements. It is highly unlikely that this can be achieved solely from domestic inputs and donor interventions will be necessary. Further assistance is needed with the process that is currently underway and being partially funded by DFID. For example, assistance is likely to be required with regards to pesticide handling and application, first aid, and hygiene practices (relating to personnel, facility and product). Some of these inputs can probably be provided locally but the DFID team are in the process of establishing whether there is sufficient capacity and how this could be organised.

Capacity building and institutional strengthening

A number of capacity building measures are needed to overcome various constraints and facilitate an expansion of exports. These can take a number of forms; areas of intervention (some of which are mentioned above) could include for example:

- assist and support producer/export groups to help them improve agronomic practices and build market awareness;
- establishment of a working group, (possibly under the Public Private Dialogue Forum) which would contain representatives all the stakeholders in the sector including donors; regular meetings would be held to monitor developments in the horticulture sector and discuss emerging issues; and thus facilitate better coordination and collaboration between stakeholder especially donors;
- the provision of assistance to help strengthen the EHPEA;
- assist EEPA in developing trade analysis capacity and improve the collection and dissemination of market information alongside general support for fruit and vegetable export development and promotion;
- develop the capacity of the Quality and Standards Authority to support horticulture export development; thus assistance could be provided to develop quality standards and quality control practices; also initially local internal audit skills could be developed with a view to eventually conducting verification audits on behalf of accredited certification bodies, thus avoiding the need for expensive expatriate auditors;
- develop capacity to provide training appropriate to the sector – this could range from extension work to developing marketing and management skills for both sizeable commercial operation and smallholders;
- assist in the development of strategies for greater smallholder involvement in export horticulture (e.g., contract farming, outgrower schemes);
- develop organic fruit and vegetable production and certification schemes;
- improve the availability of local skilled horticultural manpower by strengthening higher educational institutions and the training of existing employees;
- strengthening local entrepreneurial and management skills;
- improving financial institutions and access to credit on favourable terms;

- facilitate country's ability to protect its plant varieties under TRIPS (Agreement on Trade-Related Aspects of Intellectual Property Rights).

CHAPTER 3 SUDAN

3.1. INTRODUCTION

A number of published reports have highlighted Sudan's considerable agriculture potential centred upon its favourable climate, range of ecological zones, fertile soils and abundant water resources (Abdalla and Abdel Nour, 2001). Agriculture is the mainstay of the Sudanese economy in terms of its contribution to GDP (41 percent in 2001), and is, as the employer of more than two-thirds of the workforce, the main source of livelihood for the vast majority of the population (Anon, 2003). Until recently, agriculture has been contributing about 90% of Sudan's exports, but oil exports have increased dramatically in the last few years to move Sudan from a chronic trade deficit to a position of surplus, with an overall annual growth rate averaging 4.5 to 5 percent.

The value of Sudan's traditional agricultural export commodities, cotton and livestock, has declined, and sesame has become Sudan's highest-value agricultural export, reaching a record value of $ 150 million in 1999/2000 (Anon, 2003).

Horticulture has long been seen as having the potential to make a significant contribution to export-based earnings but this has yet to be realised for reasons highlighted in this report.

Following this introduction, this chapter first discusses production of fruit and vegetables in Sudan focusing the revitalisation of the irrigation schemes. The challenges of developing a fully integrated cold chain, both in terms of facilities and management are covered in Section 3.3. Gaps in terms of entrepreneurialism and appropriate support for the sector are highlighted. In Section 3.4 exports of fruit and vegetables to European and Middle Eastern markets are discussed, highlighting the nature of market linkages and problems encountered. Section 3.5 describes the key institutions and policies affecting the horticultural sector. The chapter closes with an overview in Section 3.6 of the sector's constraints and needs for future development.

3.2. PRODUCTION AND FARMING SYSTEMS

Farming systems have evolved mainly as a function of agro-ecological conditions, acquired technology market, and socio-economic conditions.

Total arable land in the Sudan is estimated at 85 million ha, of which 17 million ha are currently under crop production. The grazing area is estimated at 39 million ha, while forests occupy some 64 million ha.

Field crops in the Sudan may be divided into six groups: cereals, oil crops, legumes, fibre crops, fodder crops, in addition to sugarcane. Crop production is practised mainly in three main farming systems, namely; traditional rain-fed, mechanized rain-fed and irrigated.

(a). Traditional rain-fed farming

Traditional rain-fed farming is largely confined to areas of 350-800 mm rainfall, with cultivation mostly confined to sorghum, cotton, and sesame. Millets and groundnuts are grown in the sandy soils, receiving around 300 mm of rain. The sector is also a major producer of gum arabic and livestock. The cropped area varies from 5-8 million hectares and varies annually with variation in rainfall.

Crop production is labour-intensive with hand tools and the productivity is low; 75% of the population live in this sector. The sector contributes 90% of the millet, 48% of groundnuts, 28% of the sesame, 11% of the sorghum, and 100% of the gum arabic. Despite its importance, the sector has been largely neglected.

(b). Mechanized rain-fed farming:

Mechanized rain-fed farming is traditionally practised in the heavy clay soils in areas with rainfall between 400-800mm per annum. The area cropped varies with variation in rainfall. The annual area covered is on average approximately 8 million hectares. The main crops in this sector are sorghum and sesame. Mechanized farming accounts for about 65% of the sorghum, 53% of the sesame, 5% of the millet, and almost 100% of the sunflower. On average, mechanized rain-fed farming accounts for about 18% of the crops' contribution to the GDP. The major constraints in the sector include

poor infrastructure, poor services, and lack of drinking water, which limit permanent settlement of farmers.

(c). Irrigated farming system:

Irrigated farming systems covers about 1.9 million hectares, irrigated mainly from the Nile and its tributaries, flush irrigated areas (Tokar, Gash Delter), and, to a less extent, from groundwater. The main crops grown under irrigation include cotton, sugarcane, sorghum, groundnuts, wheat, legumes, fruits, vegetables, and irrigated fodder. The sub-sector contributes 100% of the wheat and sugar, about 99% of the cotton, 52% of the groundnut, and 25% of the sorghum. On average, the irrigated sub-sector accounts for about 64% of the total crops' contribution to GDP.

Sudan cultivates a wide range of fruits and vegetables (Tables 3.1 to 3.4[4]). Fruit tree cultivation is mainly concentrated in the northern part of the country along the river Nile, the south eastern part of the country along the river Blue Nile, Jebel Marra in the West, Southern Kordufan, and the equatorial states in the south. Fruit production in Sudan is about 2.07 million metric tonnes from an area of about 113,113 ha (Wahab, 2003; personal communication).

Vegetable production is approximately 3.0 million metric tonnes from an area of 239,003 ha, i.e., about 3% of total cultivated area. The majority of vegetable production areas are found in the Irrigated Schemes along the river Nile and its tributaries, and to a lesser degree in the rain-fed sector in Western Sudan.

These irrigated farming systems, covering approximately 1.9 million hectares, are dominated by the large irrigation schemes at Gezira, New Halfa, and Rahad, with additional areas including the flush irrigated areas of Tokar and Gash Delta, and, to a less extent, from groundwater. The irrigated sector is predominantly owned and managed by the public sector. The opportunities for export growth have been

[4] Tables referred to in this Chapter are to be found in Annex 6.

associated with more widespread production of horticultural crops within the irrigation schemes.

Public sector managed irrigation schemes have been generally viewed as expensive and unsustainable, with production increases lower than anticipated and high operation and maintenance costs (Carloni, 2001). Recent joint studies by the Government of Sudan (GOS) and The World Bank have recognised that the Gezira Irrigation Scheme has to address problems of:

- top down dysfunctional management;
- low productivity (cropping intensity of 40 %, low yields);
- chronic and substantial annual operating losses;
- large annual subsidies from federal government ($ 3.3 m. in 1999 for infrastructure rehabilitation);
- substantial debts ($34 m. in 1998/99);
- dilapidated but still functional infrastructure;
- social inequities (farmers vs labourers).

Approaches to resolve these issues have been recommended, including decentralized responsibility for water management, private/public partnership, land reform, greater farmer crop choice (in groups of farmers), direct payments scheme, improved credit systems, and more directed agricultural research. Some of these approaches have been evaluated in a pilot scheme with the Farmers' Union in the Gezira Scheme run by GOS, with FAO technical assistance. Initial results have yielded encouraging benefits, including reduced costs, improved productivity, and more effective management through farmer-led decision making (Taha, 2003).

The NRI team was not able to visit the Gezira Scheme but had a meeting with the manager of the Silait Irrigation Scheme, which has experienced the problems outlined above, and has recognised the need to work on new public-private sector partnerships to revitalise irrigated agriculture.

Silait Irrigation Scheme

The Silait Irrigation Scheme was facing similar problems to those highlighted for the Gezira Scheme. To resolve some of the institutional issues, a new company has been formed to run the Scheme removing direct Government control. The Scheme, situated near Khartoum North, covers an area of 10,000 feddans[5] irrigated from the Blue Nile by four electric pumps (3.4 m^3/sec capacity) using surface irrigation. Currently 903 farmers are members of the Scheme, each allocated plots of 8 feddans on which a range of crops are cultivated, including:

- fodder for nearby livestock (manure re-cycled onto plots);
- vegetables for local consumption;
- sweet potato, okra, cucumber, tomato and chilli for local markets;
- melons, aubergines, sweet and hot pepper and okra for export (mainly to Gulf States).

The main production season is from October to March.

The Scheme had targeted 3,000 feddans for export production but this has been reduced to 500 feddans because of constraints from:

- low crop productivity e.g. melon yields of 5 tons/feddan compared to 30 tons in other exporting countries;
- poor quality of seed, e.g. imported melon seed has been found to be susceptible to powdery mildew, which has led to the loss of production from 400 feddans even though the melons were sprayed;
- high cost of inputs including seed (particularly hybrid), fertilizer and pesticides;
- high field losses due to diseases, e.g. fruit rots induced by poor irrigation practices, or physiological problems such as sun scorch;
- lack of technical support and information to manage the post-harvest chain (40% losses the norm);

[5] In Sudan (and Egypt) a feddan is equivalent to about 1.038 acres or 0.42 hectare.

- limited capacity for grading and packaging;
- lack of cooling facilities to remove field heat (extremely high temperatures are a significant factor in Sudan[6]);
- lack of cold storage facilities to maintain produce quality and shelf-life;
- non-functional cold storage transit facilities at the airport;
- high cost but low volume of air freight capacity.

Some of these problems have contributed to high (and fluctuating) costs of production, for example the costs for exporting melons includes:

- $563 for cultivating one feddan (about 100 US $ per ton);
- $200 per ton for local transport, grading and packaging;
- $1,100 per ton for air freight charges to Europe.

This creates a high cost of approximately $1.4 per kg, which has to compete against melons being transported more cheaply by sea. At the moment, the wholesale price of Galia melons from Brazil is approximately $1.0 per kg in the United Kingdom.

The main costs of production are lease on the land (leased by State Ministry for 4 - $5,000/feddan for 25 years) and water (payment to the Scheme of $37.5 per feddan every 4 months). Labour costs average $1.8 a day (8 hours).

Although the costs of production and trading are high, the Scheme provides important elements necessary to meet the challenges of exporting to highly demanding and regulated markets:

- a system of management which produces reliable and traceable documentation of farmers' cultural practices that would satisfy due diligence demands made by the retail sector;
- pest and disease control through its technical team which scout for problems

[6] High temperatures can cause problems such as irregular flowering e.g. optimum flowering for mango 8 – 15 °C at night, and decreased shelf-life after harvest.

- opportunities for rapid technology innovation or transfer through its own extension agents who received training including exposure to other countries agriculture e.g. Egypt.

- a mechanism for aggregating farmers' production so that critical volumes for export can be achieved, creating economies of scale that would impact on post-harvest costs, particularly transport;
- opportunities to implement production planning specifically to meet export demands.

The Scheme collaborates with nearby research organisations to run trials. At the moment, there is a focus on the use of alley tree crops to provide a shelterbelt to reduce water loss and soil erosion. The Scheme is also investigating the potential for tree cropping with citrus, guava, dates, limes and ornamentals. It has its own nursery and distributes seedlings to nearby homes and schools for backyard cultivation.

3.3 COLD CHAIN AND POST-HARVEST HANDLING SYSTEMS

To achieve export market success requires an efficient, fully integrated chain that must form an integrated continuum from the farmer to the retail outlet. It is important to note that an effective post-production export chain may contain several, often independent, steps within the country of production, namely:

- selection of the correct harvest time to achieve the shelf-life appropriate for the destination market;
- systems to remove field heat and cool the produce;
- packhouses where produce is graded and packed, and then stored (usually in cold stores to maintain quality) awaiting export;
- efficient transport from the packhouse to the point of export e.g. airport and docks;
- cold transit stores at the point of export.

Ideally the management of the supply of produce from the farm, encompassing production planning, delivery of quality requirements and harvesting is fully integrated with the post-production chain. It is important that each product is cultivated to meet market demand, rather than taken to market on the off chance it will be bought.

An analysis of the post-production systems in Sudan reveals the following fundamental and critical weaknesses, which have a profoundly negative impact on the export sector.

Non-existent cold chain

Apart from the cold stores owned by the one company, the export sector is totally devoid of any functional cold chain. This situation must be remedied if Sudan is to realise any significant involvement in the international trade of perishable horticultural produce. The cold chain must be established from the farm (or as close as possible) all the way through to the point of exit.

Even cold store facilities established at Khartoum airport by Sudan Airways were not functional and typify the problems in post-harvest management. The company has a refrigerated storage capacity of 40 tonnes within a cold store warehouse. Neither the warehouse nor the refrigerated room were functioning, but were used as a general store of odd pieces of equipment and empty airline containers. Currently, all horticultural export produce is handled in the open in a pot-holed yard (non-tarmac surface). Incoming produce is weighed on a weighbridge and loaded on to airline dollies. At the time of the visit, a consignment of mangoes was left in the full sun at a time when temperatures were close to 40° C. This appeared to be normal practice for horticulture produce. This is in comparison to relatively more valuable meat consignments for the Gulf, which were delivered to the yard in refrigerated trucks. These were linked to the power supply to keep produce cool until the loading onto the airline containers immediately before delivery to the aeroplane.

Facilities for post-harvest handling including cold storage require considerable investment. Not many growers have the capital or expertise to undertake post-harvest handling. Therefore, specialized companies or exporters themselves assume this function. Where these companies are not present or are relatively small such that private sector investment is not sufficient to meet the demands of the export sector, the public sector can play an important role in the provision of cold stores. This is particularly important where a large number of small-scale farmers and exporters are trying to enter the export market.

To resolve the lack of grading and cold store facilities in Sudan, an Export Village containing appropriate infrastructure has been planned. The first phase of this Government-funded initiative is currently under construction in Khartoum North, near the proposed site for the new international airport. It will have a packhouse with four cold stores and two grading and packing lines. The scale of operation has been reduced from earlier plans because the anticipated export boom has not materialised.

In order for this facility to have significant impact in the sector it is important to determine:

- its role and capacity in providing logistical support, e.g. produce advice to farmers and exporters, provision of correct carriage instructions to the export carrier detailing the exact nature of the cargo - for example, in the case of fruit, carriage requirements may vary dependent on type, variety, maturity, origin and growing season conditions;
- capability of staff to provide efficient services, e.g. to ensure speedy and efficient grading and packaging of produce and prompt storage in cold stores;
- linkages with other government agencies, e.g. Ministry of Agriculture and Customs, to ensure speedy processing of documentation and inspection of produce, issuing of food hygiene certificates where necessary (applicable to all export points);
- training to develop new skills for cold store staff;
- provision of information to farmers and exporters in relation to changes in technical and regulatory requirements in the market place.

Weak entrepreneurial skills

The driving force behind most successful horticultural exporting countries has been an active private sector grouping of well-established exporters buying produce from a mixture of large, medium and small-scale farmers. Exporters are seen as the primary party responsible for meeting the supply chain requirements set by the market place. These firms have the organisational capability to organise growers to meet volume and quality requirements, capital to invest in transportation and post-harvest facilities, ability to manage government regulations and knowledge of international transport systems. As a rule, only a few large firms within the country succeed in this venture.

The low and declining volume of horticultural exports in Sudan is symptomatic of the lack of established horticultural export companies. There exists a collection of individuals trying to make a living from trading in general, who now and again export fresh produce, with varying degrees of success. An example of this is the experiences of one Khartoum-based company, Wafra. It has made some attempts to export melons and green beans in the past and has melon-grading equipment, access to packaging and a cold storage facility. However, poor or non-existent returns have meant that the company no longer wants to export produce (it lost $80,000 in the last export venture to The Netherlands). Instead, it now provides grading, packaging, and storage services, under contract, to farmers e.g. it charges 10 US cents per carton for sorting and grading produce for export.

Discussions with individual traders at the Khartoum Chamber of Commerce highlight problems related to:

- disincentives to export because of high taxation;
- lack of market knowledge;
- lack of reliable business relationships with importers;
- high costs of transport;
- poor infrastructure;
- high post-harvest losses;
- lack of support and guidance.

To create the impetus to establish a viable export sector in Sudan requires the active participation of the private sector. Steps must be taken to establish a framework in which the public and private sector can work together to resolve the above problems. One approach is to support the formation of a nodal organisation as a forum for all appropriate stakeholders to work together (see below).

Inadequate support

To develop an export sector often requires an effective nodal organisation to provide guidance and logistical support to foster collective action by all sector stakeholders, from farmers through to exporters. Such an organisation is particularly important in identifying the demands and requirements of the export sector and the solutions to resolving any constraints.

Quite often farmers and export companies, with support from public sector entities, will join together to form an export association (not a direct trading organisation). Such an association has not been formed in Sudan. In 1997, the government established the Sudanese Horticulture Export Company (SHEC), details of which are given in Section 3.4. This state company has played a significant role in facilitating exports by private individuals as well trading as on its own account. It appears to be responsible for arranging the trading linkages for many of the individuals who are involved in horticultural trading. However, due to its recent down-sizing, its capacity for facilitating trade is impaired. Nevertheless, there are plans at SHEC to export onions and okra early in 2004 (January and February).

Some traders meet together through the Khartoum Chamber of Commerce. The Chamber of Commerce may provide a more private sector-led focus to the formation of an Association (see Section 3.6).

3. 4. MARKETING – DOMESTIC AND INTERNATIONAL

Introduction

The main exports from Sudan are oil/petroleum-based products, cotton, meat, oilseeds, gums and resins and hides and skins (Table 3.5). Fruit and vegetables are very low in the list of exports and do not feature as a separate category in many sets of summary statistics on exports from Sudan (e.g. the most recent summary tables produced by the

Bank of Sudan). The export economy has seen a major restructuring with the beginning of oil production in 1999, but agriculture remains Sudan's most important sector for employment.

Exports

Detailed information on horticultural exports has proved very difficult to obtain. This is because of the low volumes traded and also because of the disconnection between individuals and institutions involved (see below). The most comprehensive are for exports to European countries from 1993 to 1997 (Marketag, undated), and data from the Bank of Sudan and the International Trade Centre 2001 and 2002.

The history of fruit and vegetable exports from Sudan is somewhat chequered. Efforts to export to European and Arab markets were made in the 1970s but this trade declined dramatically in the 1980s and then revived a little in the 1990s before declining in the last few years.

Beans, mangoes and melons were the most significant exports of fresh fruit and vegetables from Sudan to European countries in the period 1993-97 (Tables 3.6 to 3.8). However, a total of eight fresh fruit and vegetable product types were exported to both the UK and The Netherlands, five to Germany and four to Belgium and France. But trade in these products (including potato, capsicum, lemons and grapefruit) was very small and was not sustained.

Throughout the period the volume of guava, mangoes and mangosteens (mostly to the UK) steadily declined to zero in 1997. The export of melons, particularly to The Netherlands, UK and Belgium showed an upward trend, whereas beans declined to only 59 tonnes by 1997. The Netherlands was the most significant market for melons, importing every year from 1993 to 1997, with a peak of 138 tonnes, but most shipments were considerably smaller.

For the next period for which data is available, the total value of edible vegetable and fruit exports (for the first three quarters of 2002) was $2,018,000 (Table 3.9).[7]. This

[7] These are the main months in which horticultural exports take place.

compares to $1,935,000 for the same period in 2001 (in volume terms, an increase from 5,113 tonnes to 5,752 tonnes). In these years, fruit exports are three times greater than vegetable exports. There was thus a slight improvement in exports, but this does not match the volumes said to be achieved in the late 1990s.

Data from International Trade Centre, Switzerland for 2001 confirm the negative trends in Sudanese exports of fruit (Table 3.9)[8]. Exports of the products listed, including mangoes, fell in value by 6% annually between 1997 and 2001, with an 11 % decline for the all types of melon and papaya. The total volume of fruit exports was 6,446 tonnes.

More detailed data, available from ITC, indicates that mangoes are the most important fresh fruit export, at 5,006 tonnes in 2001 accounting for 77% of fruit exports by volume (Table 3.10). The majority of Sudanese mangoes were exported to Saudi Arabia (Table 3.11). No figures were available to indicate the volume trend for Saudi Arabia, however the export value to Saudi Arabia declined by 13% between 2000 and 2001. Other Middle Eastern states also imported relatively large quantities, but in the case of Lebanon and Jordan, less than they had in the past. Whilst there had been some exports of mango to Europe in the 1990s, by 2001 there were no mango exports to Europe, except for one very small consignment of 7 tonnes to Greece. There were still some shipments of melons to Europe in 2001, but in much smaller quantities (Table 3.12). Whereas 138 tonnes had been exported to The Netherlands in 1997, there were only 36 tonnes in 2001 with a similar volume going to Belgium. The UK imported fifteen tonnes of melon. The trend in terms of value was negative to these destinations.

With respect to melon exports to the Middle East, the story is a little more positive. Exports to Saudi Arabia, which account for approximately 40% of the value of Sudanese melon exports, grew by 21% between 2000 and 2001. Growth in the Lebanese market was even more impressive at 418%, but volumes are very small (53 tonnes in 2001). There had also been positive growth in the German market, but again volumes were small (64 tonnes). Exports to The Netherlands of melons, which

[8] Sudan has not reported trade data in the COMTRADE database. Therefore figures from the ITC database for Sudan exports are based on data from importing countries

used to be the most significant European market for Sudanese melons, declined in 2001 to 36 tonnes, a decline of 88% on the previous year.

However, vegetable exports seem a little more stable, though with even lower volumes (Table 3.13). One growth trend is onions, particularly to Saudi Arabia. Whilst exports from Sudan in 2001 were only 120 tonnes this was a 650% increase on the previous year. Some Sudanese players were optimistic about the export prospects for onions, see below, but they were aware of the potential competition in the Middle Eastern market from countries such as Yemen.

The data available indicate exports of particular products to particular destinations do not appear to be sustained. In some cases the imports into some countries suggest single consignments. The individual, often opportunistic nature of the trade is indicated by the small, volatile volumes of products such as mangoes, especially to destinations beyond Saudi Arabia.

Key players in export horticulture

The quantitative data on exports described above are indicative of problems throughout the chain and suggest that there is not really an export horticulture industry, but rather a collection of individuals trying to make a living from trading.

In an attempt to stimulate the export sector, the government established the Sudanese Horticulture Export Company (SHEC) in July 1997. According to the Company's promotional material, the overall aim of the company is to 'contribute to the development of the country's exports of fruits and vegetable crops and improve the shape and image of the end products so as to compete in the outside markets'. Its objectives are listed as follows:

- to enhance marketing and exporting of horticultural crops;
- promote exports of horticultural crops in foreign markets;
- procure production inputs such as improved seeds, fertilisers, packing materials etc;

- establish a modern centre equipped with sorting, grading, waxing, cleaning and packing facilities to improve end products and enable them to compete in the outside markets;
- invest in export services, including cold stores, refrigerated trucks, and air transport; and
- invest in the processing of vegetables and fruits as well as post harvest services.

It had a modern, well-equipped office and sizable staff and engaged in overseas promotional activities and 'facilitated' the exports of a number of farmers. Informants spoke of facilitation, but it appears that the Company had hands-on involvement and a financial interest in the transactions

Established as a 'public share company' in which private individuals and companies could invest, it was hoped that private sector traders would eventually take over the company. Whilst there is some private investment in the company by exporters, the main shareholders are listed as the Ministry of Finance and National Economy, Sudan Development Corporation, Sudanese Free Zones Company, Bank of Khartoum and the Sudanese French Bank.

The company has not succeeded in meeting its rather ambitious objectives; rather it has been considerably scaled down. Making losses on an almost annual basis, the Company repeatedly had to request further resources from the Ministry of Finance. In mid 2003 the Ministry of Finance refused to cover any further losses and the Company was considerably downsized to two people and more moderate offices provided by the Khartoum State Ministry of Agriculture, a senior officer of which oversees the Company's activities.

We spoke to a total of seven people who were described to us as exporters. They were relatively small businesses. Whilst many of these traders had exported in recent years, only one still appeared to be trading in fruits and vegetables.[9] Thus, these

[9] This trader has links with the export development consultancy Teampro in Rotterdam which is attempting to build up trade links between Sudan and the Netherlands.

traders can be characterised as individuals or family firms, who now and again export fresh produce rather than regular export companies.

Box 3.1 recounts some of the export experiences of Sudanese traders in relation to Europe. The only crops that informants claimed to have been successfully sold in Europe were green beans and Galia melons. Interestingly, these crops are specifically grown for export, unlike many other crops that traders have tried to sell in overseas markets. Green beans are not eaten in Sudan. However, as indicated in the Box, this has been fraught with difficulty. We did not learn of any sustained success in relation to exporting melons to Europe. It appears that exports to Europe have been largely undertaken by the SHEC whereas individuals export to the Middle East.

The Arab Authority for Agricultural Investment and Development (AAAID), an international public sector organisation, with headquarters in Sudan, used to export Galia melon and had links with importers in Ostend, but has stopped investing in exports of fruit and vegetables from Sudan and is focusing more on oilseeds and maize. Transport problems were cited as the reason for leaving the business.

Box 3.1 Particular Export Experiences: Europe

- Green beans to The Netherlands. Actors involved: SHEC, Wafra (private sector cold stores)[10], Dutch importing agent (Blue Nile, company registered in The Netherlands). A consignment was sent, but no payment was ever received. The agent said that he had additional expenses in selling the produce which arrived spoiled, and after commission and payment of expenses the Sudanese exporters owed the agent money ($80,000). This story was told again and again, often with the allegation that the agent had cheated them
- Melons to The Netherlands. In 2002 Sudanese Galia melons suffered from mosaic virus and wilt. This was partly related to the seeds imported from The Netherlands which proved to be susceptible to mosaic virus, to which local varieties are resistant. A further problem was the competition from cheaper producers, particularly Brazilian melons that had been shipped for $100 per tonne by sea (compared to $1,000 per tonne airfreight from Sudan). This was

referred to by at least three individuals.

- A privately-owned company with a cold store facility, Wafra, is collecting, sorting, packing and exporting green beans under contract to Europe, on behalf of an Egyptian exporter. This is between January and March when beans cannot be produced in Egypt. Market linkages with the European buyer are made by the Egyptian exporter.
- Melons were exported by the SHEC to Europe for only 10 weeks of the year, which meant it generated insufficient income to cover all its costs.
- One exporter between 1995 to 2002 worked with a commission agent in The Netherlands who took 8% of net sales. He sold melons, beans and mango to The Netherlands and Belgium. He did not export last year as he claimed that the costs of production, including local taxes were too high.

Source: Key informant interviews

Most export transactions have been on the basis of cost-insurance-freight (c.i.f.) rather than free-on-board (fob) so that the risks of transport, etc. are borne by the exporters. In the main, trading links were with commission agents. We heard of no fob sales or long-term agreements with importers willing to invest in a particular supplier and there is limited information exchange or communication between importer and exporter.

Saudi Arabia appears to be the main target market for exporters of mangoes. It is widely accepted by Sudanese exporters that the varieties of mango grown in Sudan, which are relatively fibrous, are more suited to Middle Eastern tastes than European. It appears that for mangoes in particular, it is individuals who are exporting rather than companies. Whilst exports of many fruit and vegetable products appear to have ceased, mangoes are still being exported to Saudi Arabia.

Informants claimed that few fruit and vegetables exports had been attempted in 2003. However the team was told about some plans to export early in 2004, see Box 3.2.

Box 3.2 Export Plans

- A group of around ten farmers at Silait Irrigation Scheme are forming an association with the aim of exporting. In total they farm 70 feddans. Whilst production is carried out individually, they plan to market collectively. They visited Rotterdam in order to build up contacts with Dutch and French importers. It was not clear what they plan to export.

There are plans at SHEC to export onions and okra early in 2004 (January, February). Seeds will be distributed to willing farmers, which will be collected by SHEC. It is anticipated that some farmers on Silait Irrigation Scheme, along with others in Gezira, Nile and Khartoum states, will participate.

There is no exporter association. There are however, some linkages between traders in terms of contacts with the state-run and owned SHEC and, more concretely, membership of the Union of Chambers of Commerce.

Market linkages

The export marketing system for fresh fruit and vegetables is very similar to the domestic marketing systems. There is very little production specifically for export: production planning, production, post-harvest handling and marketing systems are not designed to meet the needs of the export market. From our discussions with exporters and government officials, there are three main routes to market:

- some exporters buy produce from wholesale markets;
- some exporters buy at the farm gate (sometimes from neighbouring farmers);
- some exporters buy produce through contract farming schemes and provide key inputs to the farmer on credit.

The balance between the three routes was unclear; however, informants noted that mangoes are more likely to be bought at wholesale markets and Galia melon exporters tend to buy at the farm gate. As quality tends to be extremely variable at wholesale markets, it seems that few serious traders aiming at the export market would rely on this route. Moreover, trends in export market requirements indicate that the third route is the most important for future development of horticultural exports, especially where the exporter undertakes to closely supervise production and post-harvest

handling. No evidence was found of contract farming where the exporter has close oversight of horticultural production. An irrigation scheme manager indicated that exports were not produced specifically for export, 'they just wait for the farmers to produce'.

Amongst the exporters, there was no awareness of the need for traceability for certain European markets. Produce is not traceable back to the farm; at most, intelligent guesses on the region of production can be made on the basis of seasonality. Produce from a number of farms is packed together. However, the records kept at irrigation schemes mean that it would be possible to develop traceability systems.

Thus, there are poor linkages between farmer and exporter. There is limited planning of production for export and relationships between exporters and importers are fragile and fleeting.

Export marketing problems

During our interviews, the export-related problems cited by exporters included freight, credit, taxation and a lack of market information.

Transport, especially the cost of transport, was identified as a problem by many exporters. There appear to be fairly regular flights to the Middle East and Gulf States at reasonable freight rates. We were quoted $0.30/kg from Khartoum to Jeddah (compared to $0.70/kg from Entebbe). Emirates, Gulf, Azza Airlines, and Trans Arabian all fly from Khartoum to destinations in the Middle East. Egypt Air and Ethiopian Airways have regular schedules to and from Khartoum (Arab com consult, 2001). In addition, there is the state-owned Sudan Airways. This has a monopoly on domestic flights and covers 15 local airports including Khartoum, Port Sudan, El Obeid and El Fasher (EIU 2003).

It is also theoretically possible to export to the Middle East by sea from Port Sudan. However, there is a lack of refrigerated trucks for the long road journey from the Nile-based production areas to Port Sudan, and there are no cold store facilities at the port. These problems however are not insurmountable given appropriate investment in

transport and facilities, or if proposed horticultural projects in the Gash delta come to fruition.

Transport to European markets however is more problematic. There are infrequent passenger flights to Europe, Khartoum having lost its hub status (Pedersen 2001). For horticultural products there is a strong dependency on the transport capacity of passenger flights.[11] There is insufficient volume of fruit and vegetable exports to charter planes and even if there were greater volumes of exports to be air-freighted, there remains the problem of insufficient 'back load' for the return journey. At present only Lufthansa flies direct to Europe. Lufthansa flies to Frankfurt in Germany, but unfortunately for the exporters we met their main markets are in The Netherlands and so the produce has to be trucked on to their destination, adding to the cost.

Exporters (as well as Ministry of Agriculture and research institution staff) claimed that airfreight rates were too high. The regular rate from Khartoum to Europe is $1.30/kg, but Sudan Airways is offering a special rate of $0.80-1.00/kg. Nevertheless this is still an advantage compared to Uganda and Ghana where rates are $1.65/kg and 1.70/kg, respectively (Orchard and Greenhalgh, 2003).

Some of the complaints made by exporters are related to the policy environment in Sudan, particularly fiscal policy. They argued that high taxes hindered trade and complained about the many layers of taxes that added to the costs of production. However, as indicated below, the tax regime in Sudan has been significantly reformed, so it is possible that the exporters were recounting past difficulties rather than current problems. A more significant policy issue is the availability of affordable capital. It was noted that loans may be provided for a season, but not two or three years which may be necessary for investment in facilities such as a cold store.

3.5. INSTITUTIONAL AND REGULATORY FRAMEWORK

The legislative framework was highlighted as a key constraint to the development of horticulture exports from Sudan. As we note below, some changes are being made to

[11] Kenya, Zimbabwe and Cote d'Ivoire are cases where the growth in exports of perishable horticultural produce is associated with a hub airport and large air passenger traffic (*ibid*).

reform the economy to permit freer trade. However, it seems that some changes, particularly to the tax system are taking some time to implement fully. More significant challenges are likely to be in building the capacity of key institutions, particularly in the public sector, to operate effectively in a new environment.

Policy environment

With International Monetary Fund (IMF) assistance, the Sudanese economy is undergoing a process of reform aimed at transforming the formerly state planned economy into a liberal market economy. Sudan is moving towards macro-economic stability (for example inflation was under 6% in 2002 whereas it was 'triple digit' in the early 1990s) and is 'advancing structural reforms' (IMF 2002). Key areas of trade policy reform include exchange rates, tariffs and taxes. Other areas where changes are taking place include credit and structural reform of the irrigation schemes (see subsection on institutions).

Plans for flexible exchange rates were introduced in 1999 and by May 2002 a managed float exchange rate system was implemented.

Export tariffs have been eliminated on agricultural crops. The last remaining export tax, on cotton, was removed in 1999 (IMF 2000). The indirect tax system was revised in 1999 with the introduction of VAT. However, the tax that has hindered trade appears to be state-level taxes that were levied on inter-state trade. Legislation to remove the 'ad-hoc interstate trade taxes' was passed before 2000 (IMF 2000), but it appears that it has taken some time to implement. A Ministerial committee was established in early 2000 to ensure that all state governments comply with the decision to limit taxes on agricultural products and enforce the removal of taxes on interstate agricultural trade.[12] During our interviews in October 2003 traders referred to these taxes as if they still existed.

As an ACP country, Sudan faces low tariffs for agricultural goods exported to the European Union. It also had preferential tariffs with respect to other members of the

[12] Letter of 7th May 2000 from Bank of Sudan and Ministry of Finance and National Economy, appended to IMF (2000).

Arab League's Greater Arab Duty-Free zone, e.g. Saudi Arabia and the Gulf States. However, these states are reported to have ended import duties on imported fruit and vegetables, as well as other products.

Sudan is a member of COMESA, the Common Market for East and Southern Africa. COMESA has a customs union agreement which is due to be implemented in 2004, and which will provide Sudan with low or duty free access to many African markets[13]. Conversely, it will have to open its markets to these trading partners, which will have implications for imports.

Sudan will become a full member of the World Trade Organisation in 2005; it currently has observer status. This will have far-reaching effects in terms of the trade rules governing access to Sudan's markets and the establishment of appropriate risk assessment systems in relation to standards.

Reforms to credit and financial institutions began in 1999, which has led to a decline in overall loans to the private sector, including loans to agriculture. However, the problem with respect to agriculture is aggravated by the reluctance of banks to loan to the sector because, in the past, 85% of the loans were unrecoverable (IMF 2000). The banking sector is 'fragile and undercapitalising' with an outdated legal system which constrains private sector investment (ibid).

Institutional framework

One of the key features of the export horticulture sector is the considerable involvement and influence of the public sector.

The role of government in establishing and maintaining the irrigation schemes presents a comparative advantage because of:

- the high capital investment required for irrigation and other farm infrastructure;
- agronomic management and input support to farmers;

[13] The members of COMESA are Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

- systems of management, which allows the introduction of due diligence mechanisms necessary in the highly regulated export market.

Equally the Government has been supportive through establishment and support of an extensive range of institutions and skills in the public sector:

- Ministry of Agriculture and Forestry;
- National Institute for the Promotion of Horticultural Exports (NIPHE);
- Sudanese Horticultural Export Company (SHEC);
- Food Research Centre;
- Horticulture Export Village
- Universities.

However, the key bodies which have aimed to support the sector, namely the irrigation schemes, the NIPHE; and the SHEC have not been able to stimulate the growth of the export sector. Experience from donor-funded projects has shown rehabilitation of large-scale irrigation schemes in Sudan to be unsustainable under current modes of management. It is suggested that in future projects involving rehabilitation of infrastructure, the institutional framework is restructured to provide mechanisms that ensure adequate beneficiary involvement and fiscal contribution. To facilitate this process it is important that resources are provided to strengthen the capabilities of public authorities to assist beneficiaries in managing their own rehabilitated schemes. The formation of farmers'/exporters' associations will be necessary in order to promote collective management and ownership of facilities by beneficiaries.

Some smaller schemes are more independent of the government irrigation superstructure. For example, with agreement from the Ministry of Agriculture, the Silait Irrigation Scheme is being run as a private company, answerable to a board of directors that fully delegates executive control.

Research Institutes

There appears to be significant capacity for agricultural and food research in Sudan, including institutes specifically aimed at horticulture. However, there is little or no

connection between research and technology transfer and so much research is unused by farmers throughout Sudan. The following are key institutes in the sector.

Agricultural Research Corporation (ARC)

The ARC co-ordinates research into horticultural products, focusing on agronomy and physiology. Some of the specialists focus on onion varieties.

Food Research Centre (FRC), Shambat, Khartoum North

The FRC was established in 1965 with assistance from the FAO. Since the 1960s it has been the responsibility of the Ministry of Science and Technology and more recently the Ministry of Agriculture. Its overall aim is to reduce post harvest losses through technologies to dry, process, package or otherwise prolong the shelf-life of food products. Its focus has shifted from the development of industrial technology to rural technology and smaller producers. It currently has 35 scientific staff and runs a number of Masters level courses and has PhD students registered.

A member of staff at FRC is part of a UNIDO/FAO programme on post-harvest capacity building at a regional level (North Africa and West Asia). This will include work on mango as well as gum arabic, karkadeh, banana and sesame.

National Institute for the Promotion of Horticultural Exports (NIPHE), University of Gezira, Wad Medani

NIPHE was established in January 1994 with the aim of promoting horticultural exports. It is an important research resource which has an extensive programme on crop improvement and post-harvest commercialisation. The Institute produces a range of scientific (publishes own journal) and technical (e.g. new varieties, seeds, crop protocols, etc.) outputs. However, it needs support to ensure greater dissemination and uptake of the Institute's outputs. It runs field days, sells seed, and undertakes visits to farms, but the linkages to and support from traditional extension services are weak. Their research experiences highlight problems in harvesting and post-harvest handling which lead to considerable losses (up to 40%), although losses from pre-harvest pests and disease are relatively low.

Although considerable resources have been invested in public sector research, greater uptake of outputs, whether new technologies or seed, is an issue that has to be resolved. The creation of projects with greater farmer participation, as in the Silait Irrigation Scheme, may provide the opportunity for more demand driven and usable research.

Marketing and export promotion

Ministry of Agriculture and Forests

The Ministry of Agriculture and Forests has a department dedicated to horticulture. Among its tasks are testing of new varieties in its own nursery as well as overseeing marketing of horticultural crops and the development of new technologies to assist exports such as new packaging. However, the Ministry of Agriculture had very little detailed data on fruit and vegetable exports.[14] However, as with the research sector, little investment has been made in providing the scientists with equipment and facilitates.

Sudan Horticulture Export Company

As noted in the previous section, SHEC was established in 1997, as a government owned company designed to facilitate exports of horticultural products. Its current role is somewhat uncertain beyond plans for onion exports early in 2004.

Many informants indicated that SHEC was a source of market information. However, it was unclear if it currently has the capacity to play this role.

SHEC is a major player in a government-funded initiative to build an 'Export Village' in the North of Khartoum. This will house four cold stores, two grading/packing lines and offices and when completed will significantly upgrade the export facilities that are available in Sudan. Construction of the facility began in late 2003. The scale of operation has been reduced from earlier plans because the anticipated export boom has not materialised.

[14] The quantitative data with which we were provided were production of different types of fruit and vegetable in each state, un-dated, and total fruit and vegetable exports in tonnes for 2000 and 2001 (comparable to data available at ITC).

Phytosanitary inspection

There are inspectors at the arrivals, departures and cargo areas of Khartoum International Airport. At the arrivals terminal there is a laboratory for testing for fungal and bacterial contamination. Inspection for containers takes place at a depot five kilometres outside Khartoum. There are similar facilities at Port Sudan where larger volumes of produce are processed.

In order to export, the exporter must complete a form giving the particulars of the product, including weight, number of cartons, address of exporter and importer. A second form addressed to customs gives permission to export. Consignments are visually inspected, and in some cases samples are taken for testing, prior to the issue of an international phytosanitary certificate to accompany the product.

Quality Standards

The Sudanese Standards and Metrology Organization (SSMO) was established in 1994, with the objectives of improving the quantity and quality of national products and services, the standardisation of commodities and monitoring the quality of imports and exports.

In addition to a head office in central Khartoum housing a library of national and international standards, SSMO also has offices at Khartoum airport and Port Sudan harbour, which are two of fifteen branches charged with quality control throughout the country. It has laboratories for testing food and feeds; pharmaceuticals, lubricants, textiles, leather; and also laboratories for undertaking engineering, chemical, microbiological and mycotoxin tests.[15] SMMO deals with pesticide residue issues (following CODEX standards), but samples that require testing for residues must be sent outside the country.

Exports of agricultural products are inspected against quality standards that are largely based on CODEX. However, the number of horticulture standards adopted to-date by CODEX is less than that for the EC and does not include produce such as melon and beans, which are important exports. The SSMO does not keep track of

[15] From the entry on the Sudan Trade Point website, http://tpsudan.org/

standards in fruit and vegetable in the export markets but expects the farmers and exporter to obtain this information. In addition it is unaware of the new European Union inspection directives for compliance to both EC quality and phytosanitary standards and the opportunity for SSMO to register as a recognised competent authority which would greatly facilitate exports from Sudan to the EU.

The Director of the Standards Department of SSMO noted that there were no problems with finance for attending CODEX meetings, their main problem in SSMO was harmonising the many different standards that importers and exporters face (e.g. EU, Arab Standards Organisation, African Standards Organisation, COMESA).

Market information

There is very limited export market information available in Sudan. The Ministry of Agriculture's Department of Horticulture is a major source of information for many exporters; however, staff in the Department have little awareness of where to find relevant and up to date information. One would expect SHEC to undertake a role in this area.

Sudan Trade Point is a recently established initiative that is part of an UNCTAD-initiated international network of 'virtual' information centres, the World Trade Point Federation.[16] At present the Trade Point office has around four networked computers and web pages are being designed to provide information about companies and traders operating in Sudan. It is early days yet for this ambitious project and much remains to be done to the website, as well as create awareness about the potential of the site and the other facilities offered by the Trade Point amongst the trading community. Sudan Trade Point is currently funded by the Ministry of Foreign Trade but aims to be funded by membership fees in the future.

At present, there is no information on the Trade Point site about trade in fruit and vegetables (information about trade in livestock is being collated). However, eight Sudanese companies are now listed on the site under the category fruit and

[16] For more information see http://www.wtpfed.org/newsite/infopoint/tpnet/whatistp.html

vegetables.[17] Nevertheless, the Trade Point has the facility to publicise and promote horticulture produce and more importantly it has the capability to provide information on international markets especially as the Trade Point has set up regional and provincial trade points to facilitate connections without the need to visit Khartoum. In horticulture, its e-trade capacity is less important as the export horticulture sector requires first-hand, direct marketing rather than internet based approaches.

Private sector associations

There is no association of horticultural exporters in Sudan. However, some exporters are members of the Union of Chambers of Commerce. The Khartoum office of the Union has a research and information officer who has some awareness of the needs of the export market. The linkages forged with the Chamber of Commerce may prove important in fostering a direct interaction between farmers and exporters and trade promotion.

3.6 OVERVIEW OF CONSTRAINTS AND NEEDS

The previous sections have detailed the constraints in the horticultural export sector. In summary, the establishment of a viable and sustainable export sector in Sudan, capable of entry into the potentially lucrative market in Europe and the increasingly quality-conscious Gulf countries, is constrained in a number of areas, particularly:

- weak entrepreneurial skills;
- lack of information on market needs, and produce quality and regulatory standards;
- critical mass of exporters and export volumes to enter destination markets;
- low crop productivity;
- poor post-harvest handling procedures;
- inadequate cold chain infrastructure from the field through to the point of export;

[17] These were not listed at the time of our visit in October 2003. The director of the Trade Point acknowledged that it was not currently focused on agriculture, and that most of its members are importers rather than exporters.

- lack of technical knowledge and technology transfer systems to improve productivity and product quality;
- high freight costs and low frequency of scheduled flights;
- imbalance between public and private sector institutional framework.

The agriculture sector has seen significant involvement by the public sector in all aspects from capital investment to construct and run irrigation schemes through to the establishment of export companies and packhouse facilities. The public sector has an important role to play in helping with start-up costs and training stakeholders in resource management, etc, however, success in horticulture exports tends to be driven by private sector players. Moreover, it is now widely perceived that continuing government subsidisation and control inhibits private sector incentives. Indeed, the present lack of significant private sector initiatives in Sudanese horticultural exports could be indicative of the dominance of the state in the sector.

The development of a viable Sudanese export horticulture sector requires considerable physical infrastructure, for example to create an effective cold chain, and there is a widespread need for market information. However, before these needs can be met, it is necessary to establish an institutional mechanism to ensure that the necessary investments, both 'hard' and 'soft' can be identified and be properly co-ordinated. It is important that any investment in the sector is guided by a clear understanding of the needs and capacities of the key players in the sector, i.e. the growers and exporters.

The normal route for donor-funded support to the export sector is to build upon identified successes, typically centred on an active export association or a few large and successful farmers and exports. Sudan lacks a nucleus upon which to address constraints in the sector and to develop and implement new initiatives.

The next steps for Sudan centre on the need to raise the profile and collective capability of the private sector and to support the Government in those initiatives that have a clear public good and require public sector/donor support because of the lack of critical mass in the private sector. The key opportunities encompass:

- the improvement of an institutional framework to foster public and private sector participation;
- creating information flows to raise the awareness of market opportunities and demands;
- targeted logistical and technical support to a small number of organisations and initiatives to act as a focal point for achieving export success that can act as an exemplar for the rest of the sector to build upon.

Institutional framework

The first phase of any support to the sector should therefore be to create a 'nucleus'. This could be through the establishment of a Forum in which key stakeholders currently involved directly or indirectly in the export of fresh fruit and vegetables are represented. Key stakeholders would include private sector exporters, export service providers, SHEC, the Chambers of Commerce, the Department of Horticulture, research institutions, representatives of the Export Village etc. The Forum would not be a permanent organisation but a mechanism for bringing stakeholders together on a small number of occasions in a time-bound period with the objective of identifying, or creating, a more permanent institution through which support to the sector could be channelled. The Forum would require careful facilitation to ensure that the needs and capacities of all stakeholders are identified. One outcome of the Forum could be the establishment of a Grower or Exporter association. An intermediate outcome could be the establishment of a Focus Group.

A Grower or Exporter Association would be a legal organisation open to all growers or exporters that meet a set of membership criteria. A private sector association provides a mechanism whereby companies can organise and develop common services and standards and thereby work together towards facilitating the sector's growth. It also offers a platform for dialogue between the private sector and government. Successful examples in the African horticulture sector include the

Zambian Export Growers' Association and the Export Flower Growers Association of Zimbabwe (Box 3.3 provides more detail of these organisations).

Box 3.3: Aims and Objectives of Associations in Zimbabwe and Zambia

The aims and objectives of the Export Flower Growers' Association of Zimbabwe, established in 1995, include the:

- Promotion of the interests of those within Zimbabwe who grow cut flowers for export;
- Promotion of standards of excellence in the industry;
- Establishment of adequate, reliable and economic airfreight and transport facilities.

The Zambia Export Growers' Association's aims to:

- Provide an efficient and adequate airfreight service to exporters;
- Co-ordinate the buying of inputs and the organisation of technical assistance under the EU Export Development Programme;
- Advise on sources of finance;
- Assist with information on marketing opportunities;
- Lobby Government and other bodies on behalf of grower exporters;
- Provide technical support services and training to members.

In view of the limited number of companies in the export horticulture sector in Sudan, it may well be premature to establish an Exporters' Association in the short-term. However, an interim step would be, by means of public-private sector dialogue in the Forum, to identify exporters who could form part of a Focus Group.

The Focus Group would involve the private sector together with key public sector players (e.g. the manager of the Export Village). The aim of the Focus Group would be to develop a more sustainable approach to exporting horticultural produce by building the capacity of the members, so that they are able to understand the demands of the international market and are able to respond appropriately. In order to meet this aim, the Focus Group would develop a small-scale action plan centred on developing the exports from a small, targeted group of farmers/exporters working with key institutional organisations such as the Export Village and the National Institute for the Promotion of Horticultural Exports.

With appropriate support, this group should aim subsequently to develop a Grower/Exporters' Association with more open membership and formal constitution.

Provision of Marketing Analysis and Data

In Sudan, one of the key constraints has been the lack of a marketing organisation with the resources and know-how capable of gathering information on all aspects of market requirements. It will be important to bring together key players already involved in market information including the Sudan Horticulture Export Company, Ministry of Agriculture and Forests, The Trade Point initiative, and a private sector group such the Khartoum Chamber of Commerce to develop an agreed approach about gathering and disseminating market information.

The following activities, supported by donor funds, could be part of these initiatives:

- marketing tour to EU and Gulf States to assess the opportunities arising from the range of commercial approaches to buying and selling horticulture produce;
- tour of horticulture producing countries already successfully exporting;

Information from marketing tours, etc, would be important in developing an action plan for targeted support for a small group of farmers, exporters and support organisations discussed below.

Targeted support for export production and cold chain management

As highlighted above, a first step could be to develop a pilot project with a targeted group of stakeholder including farmers/exporters from Silait Irrigation Scheme, the cold chain management facility at the Export Village, the National Institute for the Promotion of Horticultural Exports (for agronomic support), Food Research Centre (post-harvest guidance) and the Sudan Horticulture Export Company.

The aim would be to put in place all the necessary technical, logistical and regulatory steps necessary to achieve the export of a target crop. This would require working with the appropriate importer in the target market. This pilot project may require donor support to facilitate market linkages and technical backstopping.

CHAPTER 4: INTERNATIONAL MARKETS FOR FRUIT AND VEGETABLES

4.1 INTRODUCTION

This chapter provides an overview of international fruit and vegetable markets with specific emphasis on the EU and Middle East markets, with a view to assessing the potential they offer for an expansion of Ethiopian and Sudanese fruit and vegetable (F&V) exports. The EU is the dominant market for Sub Saharan Africa (SSA) exports. The range of products imported is constantly widening and so is the number of countries supplying. More and more products are consumed all year round and different countries are least-cost producers at different times of year. In addition, SSA exports to the Middle East are growing as are inter-regional SSA horticultural exports. However, these latter markets currently only account for a small share of overall SSA horticultural exports. With the adoption in the USA of AGOA (African Growth and Opportunities Act) there may be some medium term potential for exports to the US, but the potential of the North American market is not analysed in this study.

This chapter is divided into five parts. Following this brief introductory section, there is a discussion of some general features of global F&V markets. This is followed by separate sections on EU and Middle East markets. The final section discusses some of the implications of these findings for Ethiopian and Sudanese exporters. The production and trade tables that are referred to in the text are contained in Annex 7.

4.2 GENERAL FEATURES OF GLOBAL F&V MARKETS

The value of trade in F&V has grown enormously over the last two decades; it now exceeds $20 billion annually (Table 4.1). Exports are predominantly aimed at the large and growing European Union (EU) and North American markets. Nevertheless, rising incomes and the growth of tourism (now the world's largest industry) are presenting opportunities in many countries. Over the past decade the value of exports has risen from $14.5 billion in 1992 to $21.4 bn in 2001 of which US$13.8 bn was in fruits and US$7.6 bn in vegetables, i.e. approximately two-thirds fruit and one-third

vegetables. In 2001, developing countries accounted for $12.7 bn worth of exports while developed countries accounted for $8.7 bn.

In volume terms, exports rose from 31 million tonnes in 1992 to 47 mn tonnes in 2001 (Table 4.2). In 2001, developing countries accounted for 32.2 mn tonnes while developed countries exported 14.8 mn tonnes. Certain produce categories dominate world trade. For example, apples, grapes and pears account for 28% of world fruit trade by value and tomatoes for 22% of world vegetable trade. The combined value of trade in tropical fruits (mangoes, papayas, pineapples and other tropical fruits – excluding bananas) is still fairly small by comparison, at just over 7%. The growth in trade in speciality non-traditional exports has also been strong. For example, the growth in trade of chillies and peppers has been considerable with the annual value of exports rising from $347 million in 1992 to nearly US$1 billion in 2001.

Another fast expanding export is the sale of 'convenience' consumer packs of pre-packed bar-coded F&V, predominantly for sales through EU supermarkets. Thus, the value of trade in prepared F&V reached a massive US$4.5 billion in 2001. This trend reflects the process of continuous innovation that is taking place in the F&V trade. Eventually, this could provide an opportunity for Ethiopia and Sudan to add more value domestically by conducting some further processing, grading and packing for direct retail sales prior to export. New systems of handling and transporting are being developed in part to facilitate this business, e.g. the use of dry ice and insulated layers to maintain quality. Increasingly, new product lines are being introduced, including high care products (trimmed and packed beans, ready prepared salads, pre-prepared stir fry mixes, prepared fruits) or speciality products (baby vegetables, purple carrots, smaller-sized watermelons) or exotics (cape gooseberries, Chinese vegetables, fresh hearts of palm, tropical peppers). Some of these products may remain niche market products, but many speciality products have moved into the mainstream markets, obvious examples being mangoes, vine tomatoes, baby tomatoes and avocados.

Diagrams 4.1 and 4.2 illustrate the trend in the average export value of selected F&V for the two five-year periods, 1992 to 1996 and 1997 to 2001. The aggregate value of trade has increased for many of the fruit and vegetable (F&V), particularly grapes and tomatoes, as well as avocadoes, mangoes, papaya, pineapples and 'other tropical fruit'.

While a large number of countries are able to produce fruit and vegetables, the export markets tend to be dominated by a small number of suppliers. For example, Chile and Mexico account for 53% of world trade in avocados; Mexico, the Philippines and Brazil for 62% of world mango trade; Costa Rica and Côte d'Ivoire for 61% of trade in pineapples; Thailand and Hong Kong-China for 50% of trade in the other fresh fruit category. The exporter base is also highly concentrated, both among individual countries and in particular regions. Mexico, for example, is the leading developing country exporter of avocados, mangoes, papayas and strawberries. Brazil is a leading exporter of mangoes and papayas; Costa Rica of pineapples and melons; Chile of grapes, strawberries and avocados. Argentina, Thailand and Malaysia are the leading exporters of pears, fresh fruit and tropical fresh fruit. Quite often success in one product can drive forward the development of other products because market links, transport, infrastructure, and know-how have already been established.

The very large, dominant suppliers of non-traditional (tropical and temperate) fruits are either from Latin America or from Asia. Only three sub-Saharan African countries hold more than a 3% market share in any product: Côte d'Ivoire and Ghana, with a 17% and 4% share, respectively, in the world pineapple trade; and Kenya, with a 6%, share in trade in other tropical fruits. In contrast, in Latin America, there are a number of smaller-scale, second-tier exporters which account for more than 3% of world trade, including the Dominican Republic (avocados), Peru (mangoes), Belize (papayas), Honduras (pineapples), Panama (melons) and Colombia (other fresh fruit).

Processed Products

Table 4.3 shows the export value of a range of processed[18] F&V products over the period 1992 to 2001. The value of export trade rose from US$6.4 billion to US$8.1 billion. The prepared fruit category is by far the most important, with total trade reaching US$2.9 billion in 2001. The prepared vegetable category is next in importance, with trade reaching US$1.6 billion by 2001.

EU demand for imports of processed fruit has increased over the past decade, with an emphasis away from canned products towards higher quality, premium products, particularly in the citrus sector and exotic fruit. The EU is the largest market in the world for orange juice, importing approximately 1 million tonnes per year from third-world countries. According to FAO projections, the EU will continue to play a major role in world markets, accounting for 75% of world imports of processed citrus and growing at an average annual rate of 4% to 2005.

Overall, the EU fruit processing industry is not competitive compared to most key world suppliers, and faces strong competition from imports of products produced by countries with lower raw material and labour costs. Nonetheless, overall support or encouragement of EU-based processing is extensive. In addition, food hygiene and safety issues and EU standards in the sector can be used against imports. These non-tariff barriers combined with intense competition from existing non-EU suppliers make it most unlikely that Ethiopia or Sudan will be able to succeed in this market.

There are a number of examples where processing of fresh produce has been successful, both for national or international markets. Kenya and Zimbabwe have successfully added value by semi-processing and packaging vegetables. However, this requires high levels of investment, technology and post-harvest handling skills, notwithstanding the need to have auditable quality assurance systems to ensure adherence to highly demanding food safety regulations. As yet, it is doubtful if either Ethiopia (which undertakes some processing) or Sudan will be able to meet these requirements.

[18] The term 'processed' is used in this context to cover activities such as juice making, vegetable canning or drying, tomato paste manufacture, etc.

Market Trends for some Tropical Fruits

Demand for fresh tropical fruits is expected to grow, with global imports reaching 4.3 million tonnes by 2010 with 87 % destined for developed countries. The growth of fresh and processed fruit imports into both the EU and Middle East is expected to continue. The EU is expected to remain the world's largest importer (especially as the number of member states expands), followed by the United States.

A large number of fruits enter international trade but some minor crops, including a number of tropical fruits, are not separately specified. A number of SSA countries have capitalised on the growing demand for high value horticultural products in developed country markets but most have, at best, very limited market involvement. Preliminary market investigations suggest Ethiopia and Sudan would have difficulty competing against good quality low-cost supplies from other sources for processed fruits, most fruit and many vegetables. However, there may be several products where Ethiopia and Sudan may be able to compete and some of these are briefly outlined below. However, it must be stressed that more detailed analysis needs to be undertaken both to outline the products, the markets and the specific windows of opportunities that exist in the overseas market. Indeed, the dynamic nature of horticultural markets necessitates a continuing stream of market information and analysis.

As part of this study, the following fresh products have been identified by a UK fruit importer as having market potential (both conventional and organic production).

Mangoes

Mangoes present high-value export opportunities. Windows of opportunity exist in the market, for example there is a problem of supply in the United Kingdom during April and May and October and November when quality and volumes from traditional suppliers are low. However, particular areas have to be addressed to meet market requirements particularly in areas of: disease control, selection of export quality material at harvesting, sorting and grading activities at the packhouse and, packaging and palletisation. Popular varieties for export are Kent and Keitt, but new varieties

are finding acceptance in the market. New market opportunities are also being developed for new products such as 'ripe and ready to eat' lines which are possible with efficient airfreight linkages.

Papaya

Although papaya has a smaller market penetration than mango, the retail sector considers it has great potential because it is easy to prepare and without a stone, has a lot of savoury uses and is seen as highly nutritious. Current annual supplies to the UK are approximately 4,000 tonnes (82% from Brazil) but there are opportunities in October and November when current supplies suffer from poor quality (low sugar levels). The market is looking for new varieties. However, papaya is susceptible to a wide range of pests and diseases. Measures that can be taken to control fungal and bacterial disease of papaya can be related both to crop husbandry and judicious use of chemicals. However, as the list of active pesticide ingredients permitted for use on crops imported into the EU increases, crop husbandry and the development of new, resistant varieties will become increasingly important.

Pineapple

With the market for most exotic produce still growing, it is likely that pineapple imports will continue to increase, particularly if the new varieties, e.g. Supersweet, continue to gain popularity. Because of their price premium, 'Supersweet' varieties could be cultivated for airfreight. Where sea-shipments of 7-14 days are used, consistent quality continues to be a challenge. Ethiopia has gained access to the European market because it is producing organically a new variety, Red Spanish, with attractive characteristics of colour, size and sweetness.

Lychee

As with most exotic fruit, there is large potential for growth in consumption of lychees in countries such as the UK as long as the marketing is done, and quality is continually improved. UK markets are supplied by a number of countries including South Africa and Madagascar; the latter providing fruit after the South African season has finished in February. However, the quality of Madagascar fruit is poor and this may be an opportunity if quality requirements can be met. Table 4.4 presents import data for the EU for lychees and passion fruit – two

relatively minor tropical fruits. Whilst only selective, these data illustrate the growth of exotic fruit exports as well as the importance of individual origins in meeting demand.

The range of products that Ethiopia and Sudan may be able to export competitively to the EU could be broader than the above in the organic segment. Ethiopia and Sudan's traditional production methods are more 'organic' because little use is made of agrochemicals. So conversion to certified organic agriculture could require less investment than in countries using agrochemical-intensive methods. Also, organic production is more labour intensive than conventional methods, and labour is cheap in both Ethiopia and Sudan. Although basic quality requirements for organic products are similar to those for conventionally grown products, EU organic specifications allow a wider range of size grades. However, to export organic products successfully requires certification of organic status by an accredited independent agency. The certification process is expensive and time consuming.

Even a small expansion of horticultural exports can have significant local and foreign exchange benefits. However, policy makers, who are often keen to promote exports, need to be aware of the technical, social and economic issues in entering and expanding the export horticultural sector, particularly with regard to smallholder farmer involvement. The supply chain and entry requirements for export of high value horticultural products differ significantly from bulk primary commodity exports. Consequently, the enthusiasm to export sometimes runs ahead of practicalities.

If Ethiopia and Sudan are to become successful exporters, horticultural products must be identified that they can produce competitively (based on their particular advantages of soil fertility, climate and low labour costs, etc.) as well as satisfying the strict quality demands imposed by importers and retail buyers. It is most unlikely that they will be able to compete, in the short to medium term, in the mainstream products (e.g. bananas and oranges) which are dominated by large, low cost (often multinational) producers. Ethiopia and Sudan need to identify market segments for tropical and sub-tropical (exotic), off-season and organic products in which it is competitive.

Competitiveness is a major factor determining the extent to which Ethiopian and Sudan will be able to access the EU and Middle East markets. This includes the ability to provide a comprehensive 'service package' (comprising the right quality of service, price, regularity of supplies, packaging etc.) and product range (quality, varieties, seasonality, product mix), and in relation to their relative positions *vis-à-vis* other third country suppliers, and geographical proximity to EU markets.

4.3 THE EUROPEAN UNION MARKET

In the year 2000, the EU imported from outside the EU some $7 bn of fresh fruit and $1 bn of fresh vegetables. For F&V as a whole, SSA countries have a small share of EU supplies. Organic produce accounts for fewer than 2% of F&V sales in most EU markets but commands a price premium. Within the EU, France is the major importer of tropical fruit and the Netherlands is the major European transhipment point for imported fruit.

The unit values of F&V have held up better over the past decade than the values of the traditional agricultural exports (e.g. sugar, cocoa, and coffee). In most cases, values have been either flat or declining. Nevertheless, this should be set against a period of very strong export growth in all products and a lowering of freight costs.

Market Structures

The structure of markets for F&V products vary between countries but is evolving and concentrating. Related to this is the growing importance of supermarkets. For

example, in the UK, supermarkets now account for over 75% of F&V sales, and five supermarket chains dominate the market. Increasingly the so-called 'ethnic market' is being supplied through supermarkets. Supermarkets do not own farms, processing facilities or importing companies. A producer's contract will invariably not be with the supermarket but with the importing company (sometimes called a 'category manager'), which takes responsibility for sourcing and ensuring compliance with supermarket and other standards. These importing companies are becoming very large multi-million dollar companies in their own right.

Elsewhere in the EU - and even more so in the 10 accession states (i.e. the countries about to become EU members) - wholesale markets handle a substantial share of imports. Even in the UK, where the wholesale market share (rather than the overall volume of sales) has diminished, there are still some 37 remaining wholesale markets selling fresh produce, with turnovers ranging from £5 million up to £300 million per year. While these markets handle mainly domestic F&V production, they still deal with substantial amount of imports. Moreover, some the markets in the major urban areas (e.g. Spitalfields and Western markets in London, and the Birmingham and Bradford markets) still handle substantial amounts of exotic tropical produce. These markets provide many of the smaller independent retails outlets as well as caterers with F&V produce.

Wholesale markets are more important in mainland Europe. For example, in France wholesale markets are dominant as an outlet for fresh produce, but even so supermarkets still account for 40% of fresh produce sales. The majority of French firms importing fresh F&V from Africa are based at Rungis, just outside Paris. There are about 15 of them, including those that work only in North or South Africa. They range from 2-person operations to Compagnie Fruitiere, which is Dole's French partner. Some have their own operations, predominantly in West Africa. French importers have traditionally gravitated towards francophone countries but have been increasingly willing to purchase from other African countries, particularly South Africa. A short survey of Rungis market importers in 1999 stated that 'most importers consider trade with Africa – especially French West Africa – extremely difficult compared to trade with other regions'. Some attribute these difficulties to poor infrastructural conditions, irregular and unreliable production, shipments arriving

poorly packaged. Most importers sell to a variety of clients ranging from small greengrocers to EU regional wholesalers and supermarkets. The latter appear to be demanding not only higher quality and labelling standards but also are putting downward pressure on prices, which some importers feel is a threat to their survival.

Similar situations, with regional variations, apply to the wholesale markets elsewhere in the major European markets, including Germany, Italy, the Netherlands and Spain. Further detailed analysis needs to be undertaken on the potential for Ethiopia and Sudan to export F&V to importers operating in these markets.

F&V are not exported in isolation but are influenced by developments in other sectors such as floriculture, fisheries and tourism. Thus, the growth of tourism has been a vital factor in facilitating the growth of airfreight capacity. Meanwhile the growth in exports of other perishable products such as cut flowers and fish have been important in providing a sufficient critical mass of exportable produce.

Another feature of competition in EU markets is the substantial growth of exports trucked from North Africa via Spain and from the southern Mediterranean rim, particularly Morocco, Turkey, Tunisia, Egypt, and Jordan. These countries are receiving significant donor and private sector support to develop their horticultural export markets, which offer a number of advantages not least closeness to markets and relatively low freight costs (e.g. airfreight from Jordan costs $0.35 per kg).

Those exporting countries currently meeting market demand are expected to aggressively continue to hold and expand their market share. The more dynamic exporters are striving to maintain their competitiveness through increased productivity and attention to meeting the more demanding food quality and safety regimes imposed by importers. This has often meant that smallholder producers are increasingly marginalized from the high-value export market and supply is becoming concentrated in the hands of fewer but larger producers, with increased vertical integration between producers and exporters (often belonging to the same parent company).

In this highly demanding, premium quality market, it is very difficult for new suppliers to enter the market place without sizeable investment and support. Today,

to survive and expand as fruit suppliers to the markets, such as the EU and Middle East, exporters need to be competitive *vis-à-vis* other suppliers in terms of price, quality, varieties, seasonality, volumes and regularity of supply, packaging, etc.

Market Requirements

For Ethiopia and Sudan producers to export to the European Union, there is a need understand and react to the ongoing implementation of European Commission (EC) regulations and directives governing the importation of horticultural produce, including:

- conformity of product quality;
- harmonized pesticide usage (product registration and residue levels);
- food safety and phytosanitary regulations and directives.

The EU regulations regarding registration of pesticides and their maximum residue levels (MRLs) are of concern to many exporting countries, in part because of their effect on production practices and agrochemical costs. The EU importer will demand from the exporter that marketed produce adheres to these and other EU legal standards to ensure that products are not adulterated or carry dangerous contamination. Whilst these regulations apply equally across all member states of the EU, there are differing approaches to monitoring compliance and enforcement. Most regulatory authorities do not have any direct penalty systems for importers who breach regulations. However, the systems of notification, often involving publication of the offending retail outlet, mean that certain retailers are adopting a cautionary approach with the development of their own codes of practice to regulate agronomic and post-harvest practices to prevent any infringement of public regulations. In additions to these regulations governing quality and food safety, the EU is introducing mandatory systems of inspection that have to be undertaken by EU customs authorities before produce is allowed entry. It is crucial for exporting countries to understand the circumstances under which these regulations apply and to gain authorisation from the EC for their own competent authority to be allowed the relevant certificates of inspection.

However, the above regulatory arrangements should be viewed as minimum, pre-competitive standards. Because of concerns about consumer safety and traceability, the private sector is developing its own standards or codes governing practices.

Of paramount significance is the establishment of a consortium of European retailers (EUREP) to formulate harmonised codes of practice covering Good Agricultural Practice (EUREPGAP) and Good Retailing Practice, the latter covering storage and packing facilities. EUREPGAP offers a means of incorporating Integrated Crop Management (ICM) and Integrated Pest Management (IPM) practices within the framework of commercial agricultural production. The normative document, 'EUREPGAP Fruits and Vegetables', is a means of certification that producers are following the accepted principles of good agricultural practice.

At the moment, the membership of EUREP, and hence the requirement to follow EUREPGAP, is particularly predominant in the UK but is now expanding throughout the EU. It is the aim of EUREP retail members to achieve global consistency in pre-farm gate production standards, with the development of schemes around the world benchmarked against EUREPGAP.

A UK-based consortium, The British Retail Consortium (BRC), has developed standards such as the BRC Global Standard - Food, to provide a common approach to the certification of companies supplying consumer products to the UK market. This Standard aims to focus suppliers' attention on key areas of product safety and encompasses:

- the adoption of a hazard analysis and establishment of appropriate controls;
- a documented and effective quality management system; and
- the effective control of factory environment standards, product, process and personnel.

Compared with supermarkets the wholesale markets tend to be more straightforward with regard to product specifications and as such are likely to be more suited to Ethiopia and Sudan's currently relatively unsophisticated production and packhouse and packaging facilities. Indeed some products (e.g. bobby beans) can be supplied in

loose form. There is also much less concern with regard to 'traceability' of the produce. Still, standards are rising in the wholesale markets and there is considerable price competitiveness in these markets.

Jaffee (2003) discusses the compliance requirements for Kenyan F&V according to destination (UK supermarket, UK wholesale, UK Asian vegetables, France, Holland, Germany/Belgium/Switzerland, Scandinavia, New Zealand and Australia). In the UK, a phytosanitary certificate is a legal requirement for imports of produce destined for supermarkets and wholesalers; maximum residue levels (MRLs) must also be legally adhered to but produce is only sampled on a spot/random basis. Wholesale markets are less demanding and the Asian vegetable supply chain less so again.

The ability of producers to comply with stringent public and private standards and the costs of implementation and auditing has meant that exporters and small-scale producers are increasingly at risk of being excluded from these export markets. However, it also offers competitive advantages for those producers and exporters that can meet the more stringent market demands.

Because of these regulatory demands and the need for traceability, all export firms and farmers must now have sophisticated quality assurance systems in place that document seed procurement, planting schedules, agrochemical and fertiliser use, and which ensure full traceability throughout the supply chain.

New entrants to the export market face increasing challenges because of these market requirements. They have to be competitive on costs and quality with long-established producers and exporters, as well as meeting the standards set by the major retailers and supermarkets, if they are to have an assured market for their produce.

4.4 MIDDLE EAST MARKETS

Middle East markets are much smaller than the EU (see Table 4.5). The most important markets, in order of potential, are United Arab Emirates – particularly Dubai and Abu Dhabi – and Saudi Arabia. Dubai is a major transhipment port for F&V from other neighbouring countries. Each of these markets import approximately

1.3 million tonnes of fruit and vegetables each year valued at $500-$600 mn each. Other import markets included Bahrain, Kuwait, Oman and Qatar – access to which as far as Ethiopia and Sudan are concerned much depends on the availability and cost of airfreight. Some Middle East countries are sizeable exporters in their own right (e.g. Egypt, Jordan, Lebanon and Iran). One other possibility is Yemen – but negligible data are available and it also appears to import sizeable amounts from Saudi Arabia.

Population and income growth are leading to a growth in horticulture product consumption. Demand is heavily influenced by regional specific factors. For example, in several countries a high proportion of the population is non-indigenous, particularly from Asian countries; in addition every year several million pilgrims visit Saudi Arabia for the Hajj; the month of Ramadan is not a time to do business. In the summer months many thousand of Western expatriates leave the region to take their vacation. More recently the Iraq War has lead to the deployment of many foreign troops in the region, which in turn has increased demand for produce. Thus, Dubai importers recently referred to a sizeable increase in F&V sales to ship chandlers. As a result there are seasonal and niche market opportunities.

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. Government incentives have been given and this could have implications if they join the WTO and continue to increase exports. As yet, domestic production meets less than half of the demand for fresh F&V in UAE, Saudi Arabia, Yemen and Oman.

Market Structures

A wide range of products is imported from a large number of sources, including Middle East countries (where large quantities are shipped overland in refrigerated truck), Australia, the Americas and South Asia. As regards imports from Africa, South Africa and Kenya are the major suppliers. Globalisation and related factors are increasing competitiveness; supplies are being imported from a large number of

countries as far away as Chile and New Zealand. Rising domestic production has increased competitiveness.

Alongside being a major entrepot for imported fruit and vegetables (and many other products) Dubai is also trying to establish itself as major cargo hub for the region. For example, a new flower market is planned which it hopes will attract business away from the Dutch flower auctions. There are a large number of importers in Dubai and all the importers contacted complained about the low margins and intense competitiveness. Unlike in the EU there does not appear to be concentration in the trading sector. Thus, despite the impending re-location of the market away from the Hamriya Market near the centre of Dubai, to some 25 km away, the demand for office and storage space on the new market is considerable, and this is reflected in the prices being paid.

In sharp contrast, three big importers dominate the Saudi trade, although a number of smaller companies are also involved in the import of more exotic produce. The larger companies have also invested in production – and trading companies – overseas, including Africa. In both Saudi Arabia and the UAE, the share of the supermarkets is growing but is still small, as is the market for organic, frozen and pre-packed produce.

Products Imported

A wide range of horticultural products are imported:

- *Fruit* – major ones are dates, oranges, apples, bananas and melons; Ethiopia would find it very difficult to compete because is often shipped in bulk by sea therefore is very competitively priced.
- *Vegetables* - main vegetable imports are onions, tomatoes and potatoes; again Ethiopia may find it difficult to compete because shipped by lorry from neighbouring countries and/or in bulk by sea.

However, some exotic fruits and vegetables are shipped by air e.g. organic pineapples, green beans.

Tables 4.6 and 4.7 shows the trend in various fruit and vegetable imports into the United Arab Emirates (UAE) from 1997 to 2001. Fruit imports in 2001 totalled approximately 475,000 tonnes, valued of $144 million. Only citrus fruit imports showed a decline in value during the period, while bananas, melons, grapes and stone fruit showed double digit growth in value during the period. Vegetable imports in 2001 totalled approximately 400,000 tonnes, valued of $115 million. Only onions and dried vegetables showed a decline in value during the period, while most of the remainder showed substantial growth in both volumes and values during the period.

In 2001, the Middle East markets were importing Ethiopian fruits and vegetables such as papaya, leguminous vegetables, dried and fresh beans, chickpeas, and fresh/chilled salads.

Quality Issues and Prices

There is less concern about production and process methods than in EU markets. A range of qualities can find a market; but as one would expect lower quality earns lower prices. Formal quality standards play a less important role in trading than in the EU. It is the importer that frequently determines what is commercially acceptable in terms of quality factors such as size, shape, colour, variety, weight or count, even where documented standards exist. Nevertheless, there are regulations on phyto-sanitary requirements and hygiene and these are enforced

There appear to be similar requirements in each of the major importing countries; high quality produce is demanded by importers particularly those supplying the top retail outlets, high value catering and hotel/restaurant trade. Wholesale markets generally trade in relatively high quality produce but lower quality produce may be acceptable if the price is right.

The growth of exports from Kenya and South Africa has helped to improve the image of African traders and products.

Markets are very price competitive. Some of the imports are on a commission basis, which places greater price risks on the exporter.

Until recently, Saudi Arabia horticulture imports from outside Arab League member countries faced a 12% import duty. However, these tariffs have now been removed and both Ethiopia and Sudan now have tariff free access.

Obstacles Facing Ethiopian and Sudanese Horticulture Exporters

As with EU markets there are a number of challenges facing Ethiopian and Sudanese producers who may wish to export to the Middle East horticulture markets. These include:

- Much of the imported produce arrives by sea or truck while Ethiopian produce will have to bear the (higher) costs of air freight. Trials have been made of produce being trucked to Kenya and then trans-shipping in Mombasa to sea transport but these appear to have been unsuccessful. However, some Kenyan and South African produce is shipped by sea to Middle East markets. Similarly Sudan should be able to use trucks and sea freight to transport to Saudi Arabia, although air freight will be needed to transport produce to the UAE. Trading contacts between Ethiopia and Sudan and Middle East markets are weak. Some links have been made in the past, but as the export statistics of both Ethiopia and Sudan illustrate the level of exports from these countries is small, despite the close proximity.
- There appear to be no air charter arrangements from Addis Ababa and Khartoum to Dubai and Jeddah and although there are regular passenger flights, exporters complain about the cost, reliability and capacity. There are currently no charter flights for Sudanese fruit and vegetables, which are generally carried on passenger flights.

4.5 IMPLICATIONS FOR ETHIOPIA AND SUDAN

Many growers in Ethiopia and Sudan are small-scale. For several reasons, small-scale producers and exporters now have greater difficulty in exporting than larger operations.

- The challenges are now even greater than a decade ago because of the growing importance of the supermarkets. These now represent the major outlet for F&V and their high standards of compliance are increasingly setting the benchmark by which all suppliers must conform. Costs of compliance and certification are high and favour larger scale enterprises. Factors such as traceability, the monitoring of social and environmental standards and the transmission of new technology all tend to favour larger scale agricultural operations.
- Importers/category managers prefer to deal with larger producers and exporters, and tend to favour vertically integrated production and export operations, which are able to provide fully assured produce.
- Larger scale operations are more able to secure air space, which is vital to export success. Thus in Kenya, which annually exports over $300 million of horticultural produce, 90% of which is air freighted, larger exporters have been able to establish some control over air freight by establishing joint ventures with freight forwarders. The smaller exporters have not had the scale of operations to achieve this.
- This does not rule out participation by small growers and exporters. However, where small-scale growers and exporters have been successful is invariably when they have been part of growers' associations and outgrower schemes and well-organised pool marketing. NRI has produced a CD-Rom 'Small Producers in Export Horticulture: A Guide to Best Practice' which provides details of how exporters can become involved in export horticulture. Copies have been given to various organisations in Ethiopia and Sudan.

The issue of 'critical mass' is a recurring theme for relatively small-scale producers and exporters as they exist in Ethiopia and Sudan. It cannot be stressed too highly the need for a critical volume of exports, which permits the organisation of regular shipment schedules, and in turn enables better planning of production and exports. The volume of perishables available for export has to expand in order to be able to benefit from economies of scale. This is necessary in order to fully load a charter aircraft; and reduce input and compliance costs.

Currently Ethiopian and Sudanese exporters are failing to supply the expanding sector of the F&V markets, namely the supermarkets. Currently it will be difficult for Ethiopia and Sudan to supply this market and initially they will need to expand exports to the various wholesale and retail markets in Europe. However, if Ethiopia and Sudan are to substantially increase their F&V exports then eventually they will need to supply supermarkets. Failing to do so, combined with the relative stability of the traditional wholesale and ethnic trade in the face of supermarket competition will make it very difficult for Ethiopia and Sudan to substantially increase exports.

These expanding markets demand quality, consistency of supply and regularity. Today, to survive and expand as F& V suppliers to the EU and Middle East markets requires precise aiming of products, varieties and distribution channels. Exporters need to be competitive, *vis-à-vis* other suppliers, in terms of price, volume, quality, varieties, seasonality, regularity of supplies, packaging, etc. Producers need to satisfy the standards and codes of practice demanded by consumers, retailers and regulatory authorities which require systems to be in place to allow traceability of a product from field to supermarket shelf. The standards, volumes and reliability of supply flow required by EU supermarkets are currently unattainable by Ethiopian and Sudanese producers and exporters. In the short run, the very competitive wholesale and 'ethnic' markets offer the sole export opportunities.

The increased interest in food safety and sanitary and phytosanitary issues is not just limited to the EU. Consumers and retailers elsewhere in the Middle East and Africa are increasingly aware of these issues (Weatherspoon and Reardon 2003). Therefore, Ethiopian and Sudanese producers and exporters will need to improve their systems to survive in the local and regional food markets in the face of cheap and growing imports.

If Ethiopia and Sudan are to establish, maintain or expand their F&V exports to the EU, the Middle East and other markets, then products must be identified that can be produced competitively, based on the each country's particular advantages of soil fertility, climate, altitude and labour costs, etc., as well as satisfying the strict quality demands increasingly imposed by buyers. Export development must be market-led.

Some existing and potential Ethiopian and Sudanese suppliers have the misguided view that an export market for produce will be created by simply producing and air freighting produce to the EU and the Middle East. This displays a lack of understanding of the size and complexity of the technical gap between these market requirements and many current Ethiopian and Sudanese practices and capabilities. This reflects the relative isolation of many producers from contact with these markets and their competitors. Because these markets are now a buyers' market, if Ethiopian and Sudanese producers and exporters are to realise their export potential they must convince markets to switch from other sources by demonstrating their ability to achieve consistent delivery of a high quality product at competitive prices.

It is unlikely that Middle East will provide the major outlets for a rapid expansion of either Ethiopian or Sudanese F&V exports. Rather these markets should be considered as supplements to EU markets rather than replacements. For most horticulture products, the transport costs will make Ethiopian and Sudanese products uncompetitive. It is possible that Ethiopia and Sudan could gain a seasonal market share for some products e.g. pineapples and some vegetables, but it will be competing against Kenya and other African countries.

For fruit, it is possible that air freighted mangoes, avocados and papaya might be able to find a market at certain times of the year. A first step would be to establish whether export is viable from existing production areas, looking at varieties, productivity and volume, quality, and supply chain infrastructure.

In principle, Middle East markets offer a better opportunity for smallholders and outgrower exports than EU markets since detailed codes of practice do not have to be met and traceability audit trails are not required.

If Ethiopian and Sudanese F&V producers want to establish a market in the Middle East, prospects will be improved through:

- Establishing face-to-face contact with reliable importers – the annual Gulf Food Exhibition provides a good opportunity to meet potential partners.
- Demonstrating to the importer the benefit of switching to an Ethiopian or Sudanese supplier, on grounds either of quality or price, while meeting the requirements of consistent quality, reliable supply volumes and good packaging, and providing evidence that the technical, quality control and cold chain systems are at least equal to those of existing suppliers. Good quality produce combined with reliability of supply is a prerequisite to developing a good working and trading relationship with importers.
- Negotiation of cheaper air freight rates and a commitment to guarantee air freight capacity.
- Sending samples and making sure shipments meet agreed quality and quantity requirements.
- Ethiopian and Sudanese exporters need a detailed knowledge of the market prior to approaching it; they need to visit target countries and companies

An export expansion strategy would need to be based on a more detailed market review than has been possible in this study.

For Ethiopian and Sudan to achieve rapid and sustained growth in the export of high value F&V products to the EU and Middle East markets, and possibly North America, will require an integrated supply chain with efficient linkages between each of the many stakeholders in the chain and between the various stages stretching from grower to consumer. A breakdown or an inadequacy at any one of the stages can have a severely detrimental impact on perishable horticultural exports.

Ethiopian and Sudanese producers, distributors and exporters need to improve the packaging and labelling of their F&V for the regional and international markets – as well as for the local markets.

It may be possible that climatic and cost factors enable Ethiopia and Sudan to supply some niche products into regional African markets but from the preliminary analysis so far undertaken it has not been possible to identify such products.

CHAPTER 5: SYNOPSIS, CONCLUSIONS AND RECOMMENDATIONS

International trade in horticultural products is one of the most dynamic and rapidly growing components of international agricultural trade. Many developing countries have diversified into horticultural crop production and exports based on favourable climatic conditions and lower labour costs. Exporters are targeting markets in the European Union (EU), the Middle East and North America, which are continuing to expand in their all year round demand for horticulture produce (fruit, vegetables and flowers). The range of products imported is constantly widening and so is the number of countries attempting, with differing degrees of success, to supply these markets.

One of the important issues in the export trade has been the need to fully appreciate the dynamic nature of retailing in these markets. Although the structure of markets for horticultural products varies between countries, it is possible to see clear differentiation in that:

- Supermarkets, particularly those that have joined EUREP, demand that suppliers have fully audited production and post-production systems showing due diligence with respect to product quality and safety, environment and labour welfare;

- Wholesalers and other supermarkets make fewer demands in relation to certification of supply chain practices but still are quality and price conscious;

- Small-scale 'ethnic' importers and traders targeting particular requirements of certain sections of the population, although their markets show increases as produce gains wider appreciation.

The continuing trend in the EU and other high-value markets is increased emphasis on retail-driven codes of practice and differentiation by product quality. Regulatory bodies are also increasing their requirements for adherence to food quality and safety standards and for greater inspection by recognised competent authorities of produce at point of entry to ensure compliance with sanitary and phytosanitary regulations. These public and private sector demands are seen by the retail sector as minimum

entry requirements, before commercial issues such as price competitiveness, volumes, packaging, and quality factors are addressed. Therefore, existing and new produce suppliers must be able to continually assess market requirements and meet these or risk the loss of market share.

The EU and, to a lesser extent, the Middle East and North America are strongly competitive and are currently adequately supplied from existing sources. A number of SSA countries have capitalised on the growing demand for high value horticultural products in developed country markets but most have, at best, very limited market involvement. Preliminary market investigations suggest Ethiopia and Sudan would have difficulty competing against good quality low-cost supplies from other sources for processed fruits, most fruit and many vegetables. However, there may be several products where Ethiopia and Sudan may be able to compete including pineapples, mangoes, papaya, passion fruit and speciality vegetables such as peppers and beans. However, it must be stressed that more detailed analysis needs to be undertaken both to outline the products, the markets and the specific windows of opportunities that exist in the overseas market.

The potential Middle East markets for Ethiopian and Sudanese fruit and vegetable are as demand driven as the EU markets and are very competitive with margins being squeezed. There are few products that are under-supplied although the seasonal nature of production means that some products are in short supply during some periods. Products supplied will need to closely fit market requirements. For new suppliers, such as those from Ethiopia and Sudan, successful market penetration will require competitive pricing, high and consistent quality and reliable delivery. In certain periods of the year it will be impossible to compete with existing suppliers; Ethiopian and Sudanese exporters will need to identify the limited seasonal/climatic windows in which they can compete.

IMPLICATIONS FOR ETHIOPIAN AND SUDANESE EXPORTERS

The complexities of today's international markets in horticulture requires a supply base that fully understands buyers' demands and the regulatory framework in which the market is operating. The supplier must be able to readily adapt and put in place

the necessary systems to satisfy the standards and codes of practice demanded by consumers, retailers and regulatory authorities which in turn require the systems to allow traceability of a product from field to supermarket shelf. The supplier must be able to access the necessary technical and management skills and have the resources not only to put in the systems to meet these demands but to pay for verification by third-party auditors. To survive and expand as fruit and vegetable suppliers to the EU, as well as the Middle East, exporters need to be price competitive, *vis-à-vis* other suppliers, in terms of quality, varieties, seasonality, regularity of supplies, packaging, etc.

The standards, volumes and reliability of supply flow required by most supermarkets are currently unattainable by Ethiopian and Sudanese producers in the short term because of constraints associated with:

- poorly developed entrepreneurial skills with few larger businesses acting as a focal point to lead the sector;
- low productivity (e.g. access to land, poor agronomic practices, access to planting materials, lack of trained labour);
- inadequate cold chain infrastructure, poor post-harvest handling practices and lack of up-to-date grading equipment leading to low quality produce with short shelf-life that fails to meet market specifications;
- limited air freight availability and cost which restricts the volumes of exports required to attract buyers;
- availability of credit restricting the necessary investments in key areas such as cold stores;
- limited technical and marketing expertise and knowledge;
- lack of guiding organisations, particularly important for small-scale enterprises.

For Ethiopia and Sudan to achieve market entry and sustained growth in the export of high value horticultural products requires:

- a 'critical mass' of exports, which would permit the organisation of regular schedules, and the better planning of production and export: for example,

expansion is needed in order to fully load charter aircraft and reduce input and compliance costs.

- greater understanding of the demands of the market and identification of the range of F&V products that can be produced and exported competitively and consistently;

- efficient linkages between each of the stakeholders in the supply chain and between the various stages stretching from grower to exporter. The stakeholders include farm and pack house labourers, farmers, pack house managers, truckers, marketing organisations, traders, input and equipment suppliers, banks, airlines, government agencies, importers, supermarket, etc. The stages in the chain include: market evaluation, production planning, production, harvesting, assembly and sorting, quality control, packing, transport, storage, export and distribution. Inadequacy at any one stage can have a severely detrimental impact on perishable horticultural exports.

Provision of infrastructure and creating a macro economic environment conducive to investment are important in supporting supply chain linkages. Successful horticultural exports require a degree of collective action by sector stakeholders, often through an institution that represents the commercial interests of the sector. Ethiopia has recently established the EHPEA (Ethiopian Horticulture Producers and Exporters Association) which is fulfilling some of these objectives. In addition, the Ethiopian Government has recently established a Private Public Consultative Forum where stakeholders meet to discuss various common issues e.g. air freight, cold storage. A similar, private-sector led initiative should be considered as a first step to stimulate the export sector in Sudan.

Effective international strategic partnerships between domestic and international firms should be sought to aid market development and penetration and to assist in investment financing, technology transfer, and logistics.

Audits of production and trading processes, e.g. packhouse management, will increasingly be needed to satisfy EU, North American and supermarket requirements

(e.g., EUREPGAP, supermarket codes, and organic certification). Auditing is costly so a priority should be to establish appropriate national and/or regional standards and regulations that are accepted as equivalent to those developed by international organisations and the private sector. It will be important to obtain international accreditation for domestic auditing and certification institutions.

One of the most important determinants of market access is reliable access to sea- and air-freight systems. Some SSA countries (e.g. Côte d'Ivoire, Kenya, and South Africa) are using sea freight for some of their horticultural exports, but in the short to medium term exports from Sudan and Ethiopia will have to rely on air transport but must address key issues of availability of sufficient freight capacity, cost of freight and efficiency of freight handling. Airfreight space is available either through the chartering of cargo aircraft or on passenger aircraft.

One of the guiding principles from the experiences of horticulture export development elsewhere in Africa, Asia and Latin America, which should help to frame Ethiopian and Sudanese efforts to expand exports, are that private initiatives must drive the industry to resolve the problems identified above. Government's role should be regulatory and facilitative, with the objective of providing an enabling environment in which the private sector can thrive. In the early stages, however, public sector help is needed to lower some of the barriers to market entry facing potential exporters, such as access to market and technical information and expertise. International development agencies can assist in the establishment of horticultural export sector, but should do so through a facilitative approach supporting the role recommended by Government.

The areas that need addressing are broadly similar for both Ethiopia and Sudan. Sudan, unlike Ethiopia, has benefited from considerable public financing of production and post-production activities, although this has not led to a significant success in developing the export sector.

Ethiopia has achieved higher volumes of horticulture exports and the nucleus of a private sector within this sub-sector is clearly discernible.

RECOMMENDED INTERVENTIONS

The next steps for Ethiopia and Sudan centre on the need to raise the profile and collective capability of the private sector and to support the Government in those initiatives that have a clear public good and require public sector/donor support because of the lack of critical mass in the private sector. The key opportunities encompass:

- the improvement of an institutional framework to foster public and private sector participation;
- creating information flows to raise the awareness of market opportunities and demands;
- targeted logistical and technical support to a small number of organisations and initiatives to act as a focal point for achieving export success that can act as an exemplar for the rest of the sector to build upon.

Institutional Framework

Institutional strengthening is vital to sub-sector success and it is important that private and public sector stakeholders, including donors, meet on a regular basis to monitor developments, address emerging issues and coordinate their activities.

Ethiopia

Despite its short life the EHPEA has proved to be an effective organisation facilitating private sector horticultural exports. Currently it is drawing up a Business Plan outlining key capacity building initiatives for the sub-sector for which donor assistance will be sought e.g. cool chain facilities, EUREPGAP certification, market analysis and promotion, the establishment of a research, training and certification centre. The CFC, along with other donors, should provide assistance both for specific projects as well as to help strengthen the EHPEA.

Sudan

All existing Sudanese private sector operators are relatively small-scale and are constrained in terms of access to production know-how and market knowledge. One

of the key barriers to export development is the relative isolation of producers from contact with the markets and their competitors. A means to overcoming some of these constraints is to collaborate together and share knowledge and resources.

One of the first steps must be the creation of an institutional mechanism to facilitate the participation of the key players in the sector, i.e. the growers and exporters, with other public and private sector stakeholders. In view of the limited number of companies in the export horticulture sector, it may well be premature to establish an Exporters' Association in the short-term. However, an interim step would be to identify farmers and exporters who could form part of a Focus Group.

The Focus Group would involve the private sector together with key public sector players (e.g. the manager of the Export Village) to develop a more sustainable approach to exporting horticultural produce by building the capacity of the members, so that they are able to understand the demands of the international market and are able to respond appropriately. In order to meet this aim, the Focus Group would develop an action plan centred on developing the exports from a small, targeted group of farmers/exporters. For example, some from the better organised set up found in the Silait Irrigation Scheme could work with key institutional organisations such as the Export Village and the National Institute for the Promotion of Horticultural Exports. This action plan could form the basis for a proposal to a donor for support. A key component of the action plan would be to acquire marketing information from key export markets in the EU and/or Middle East to help guide product selection, window(s) of opportunity, quality requirements, etc.

Provision of Marketing Analysis and Data

More detailed analysis needs to be undertaken on target markets, volumes, varieties, seasonality, quality requirements, and Ethiopia and Sudan's competitive positions. Constantly changing external horticultural market conditions necessitate that opportunities need to be continually assessed. A range of marketing opportunities need to be explored to allow supply from a diverse production base and to develop a balanced and inclusive strategy incorporating European, Middle Eastern and local markets.

In Ethiopia, financial and technical assistance should be provided to strengthen the capacity of the EEPA and EHPEA to acquire, analyse and disseminate data. In addition, they should develop marketing and promotion strategies and the organisation of study tours. Both the EEPA and the EHPEA see the sourcing and provision of market information as an important part of their activities.

In Sudan, one of the key constraints has been the lack of a marketing organisation with the resources and know-how capable of gathering information on all aspects of market requirements. It will be important to bring together key players already involved in market information including the Sudan Horticulture Export Company, Ministry of Agriculture and Forests, The Trade Point initiative, and a private sector group such the Khartoum Chamber of Commerce to develop an agreed approach about gathering and disseminating market information.

The following activities, supported by donor funds, could be part of these initiatives:

- marketing tour to EU and Gulf States to assess the opportunities arising from the range of commercial approaches to buying and selling horticulture produce;
- tour of horticulture producing countries already successfully exporting;

Information from marketing tours, etc, would be important in developing an action plan for targeted support for a small group of farmers, exporters and support organisations discussed below.

Targeted support for export production and cold chain management

Ethiopia

Technical assistance should be provided to help a Focused Export Group made up of a small number of commercial fruit growers and exporters. The Group needs to be formed with great care and with clear objectives and financial arrangements. The support provided would be dependent on needs but could include provision of suitable planting materials; improving agronomic practices particularly regarding pesticide use;

improved access to credit facilities; post harvesting handling and packaging; marketing and promotion, including the building up of trading links and partnerships. Such a project could be undertaken under the auspices of EHPEA, with a view to both replication and dissemination of good practice.

Facilitating greater smallholder involvement in export horticulture

Technical and financial assistance could play a role in helping to organise small-scale producers. Various options are available including contract farming and outgrowing schemes, possibly using some of the existing state farm lands.

Sudan

As highlighted above, a first step could be to develop a pilot project with a targeted group of stakeholder including farmers/exporters from Silait Irrigation Scheme, the cold chain management facility at the Export Village, the National Institute for the Promotion of Horticultural Exports (for agronomic support), Food Research Centre (post-harvest guidance) and the Sudan Horticulture Export Company.

The aim would be to put in place all the necessary technical, logistical and regulatory steps necessary to achieve the export of a target crop. This would require working with the appropriate importer in the target market. This pilot project may require donor support to facilitate market linkages and technical backstopping.

ANNEX 1. PROPOSED METHODOLOGY AND WORK PLAN

Component 1: ***Literature Review, including: horticultural production and trade; horticultural supply chains; comparative country economic analysis.***

Location: Home base.

Objective: A desk based study to enable the consultancy team to familiarize themselves with the extant relevant literature on horticultural exports and horticulture in Ethiopia and Sudan. A preliminary analysis of comparative economic conditions will be carried out which will be verified and expanded during fieldwork during component 3.

Activity 1: Literature review of documents relevant to horticultural exports from Ethiopia and Sudan including (i) an overview of available donor funded reports, (ii) reports from other agencies and organisations (iii) pilot projects (iv) private and public sector experience.

Activity 2: Comparative economic analysis of each country.

Activity 3: Collection of horticultural imports and export data; identification of most likely target markets in the EU and Middle East.

Activity 4: Analysis and evaluation of information gathered.

Component 2: **Planning for field trips**

Location: Home base.

Objective: To ensure that field trip itinerary to the target countries (Ethiopia and Sudan) and target markets (EU, Middle East) is arranged to optimum effect given the confines of the budget and time.

Activity 1: To identify and contact key public and private sector stakeholders in the countries of the target region and the arrangement of a visit itinerary.

Component 3*:** ***Field work in the Project Countries

Location: Ethiopia and Sudan

Objective: Fieldwork will be structured around a number of themes directly related to project TOR.

Activities 1 to 7 below will involve data collection and a diagnosis of the production and the horticultural supply chains and their efficiency, effectiveness and appropriateness.

Activity1: Identification of relevant stakeholders.

Activity 2: Participatory discussions with the relevant stakeholders to explain mission objectives and benefits for the sector.

Activity 3: Identification of current production base and their potential to supply export quality produce. This will include range of produce, volumes, harvesting periods, location in supply chain etc.

Activity 4: Analysis of the supply chain from the farmer to cover transportation, intermediary traders, cold chain storage facilities, packhouses, facilities at potential export points e.g. airports.

Activity 5: Identification of current in-country regulatory, quality and phytosanitary assurance, storage inspection and certification systems.

Activity 6: Evaluation of support services and systems that can provide adaptive technological inputs e.g. through field testing and verification of new varieties, soil and water management, and pest and disease management, including pesticide residue testing and related quality certification services; identification of their training requirements and the delivery capacity of relevant institutions

Activity 7: Suitability of the market information systems.

Component 4*: *Field work in target markets (EU, Middle East)

Location: Selected EU and Middle East countries.

Objective: To identify market opportunities and needs.

Activities 1 to 3 below will involve data collection and the preliminary assessment and evaluation of horticultural supply chains and imports.

Activity1: Identification of relevant stakeholders e.g. importers, category managers, supermarkets etc.

Activity 2: Participatory discussions with the relevant stakeholders

Activity 3: Identification of opportunities and needs for the import of produce from Ethiopia and Sudan.

Component 5: Evaluation and Analysis of the Fieldwork Data

Location: Home base

Activity 1: Evaluation and analysis of the data and information gathered from the field visits and from literature and report reviews.

Activity 2: Identification of lessons drawn from the analysis and evaluation exercise and from similar operations in other countries and commodity sectors.

Activity 3: Identification of measures likely to lead to success or failure of the project to-date. Formulation of draft recommendations.

Component 6: Workshops in Ethiopia and Sudan

Location: Ethiopia and Sudan

Activity 1: Prepare workshop objectives and work programme. Identify and invite key stakeholders. Disseminate relevant documents.

Activity 2: Deliver findings to workshops and discuss outcomes and way forward with participants.

Component 7: Preparation of Draft Report

Location: Home base

Activity 1: Draw together findings from field work and workshops.

Activity 2: Submit draft report to key stakeholders and CFC for comment.

Component 8: Preparation of Final Report

Activity: Finalisation and delivery of the final report incorporating the CFC's comments.

ANNEX 2. ITINERARY AND CONTACTS

ETHIOPIA

Saturday October 18

Flight BA 6711 London-Alexandria – Addis Ababa

Sunday October 19

1. Suzanne Parkin – Project Leader, Ethiopia Horticulture Project, DFID, London, UK
2. Ed Havis, DFID Horticulture Consultant, Kent , UK
3. Michael Wilson, Business Development Manager, CMI International, UK (major EUREPGAP certification company)
4. Peter van der Starr, Managing Director, Van Oers Import, Netherlands,(major importer of Ethiopian bobby beans).
5. Visit to EHPEA Offices (Ethiopia Horticulture Producers and Exporters Association), Sumet Chanie, Executive Director, EHPEA
6. Tsegaye Abebe, Chairman, EHPEA
7. Ir Dirk T.I.Kievit, Director Projects, Netherlands Agricultural Platform

Monday October 20

EHPEA/DFID EUROPGAP Scheme Orientation Seminar - Ethiopian Agricultural Research Organization (EARO)

1. Kebreab Abebe, General Manager, Teppo Agricultural & Trade P.L.C, (producer)
2. Tsegaye Abebe, Chairman, EHPEA
3. Yonas Tsegaye, ETECO Private Limited Company, (producer and exporter)
4. Mohammed Dawd, National Plant Protection Research Center, Ambo
5. Getachew Zesealem, Export Manager, Kaleb Services, (producer and exporter)
6. Dr Lemma Dessalegne, Coordinator, Vegetable Crops Research, Melkasa Research Center, EARO, Nazret

Reception at British Embassy regarding Workshop

7. Ato Tadesse Belay, Managing Director, Awassa Green Woods Plc., (seed producer)
8. Tesfaye Haimanot, General Manager, Kaleb Services Farmer's House (producer and exporter)
9. Tsedeke Abate, Association for the Advancement of IPM, (NGO)

Tuesday October 21

1. Ato Yohannes Agonafir, VOCA (NGO)
2. Dessalegn Yigzaw, Director, Product Development and Market Research, Ethiopian Export Promotion Agency - EEPA
3. Gisaw Molla, Director General, EEPA
4. John McMahon, Chief, Agriculture and Natural Resources Office, USAID

Wednesday October 22

1. Jamshed Khani, UNDP

Worked at EEPA

Thursday October 23

1. Abi Woldemeskel, Director General, Ethiopian Investment Authority
2. Dr Taye Bezuneh, Managing Director, Associates for Sustainable Development Alternatives in Africa - ASDAA
3. Sampson; Ato Wudu, Shell Ethiopia – Global Compact Initiative

Friday October 24

1. Haille Gebre, Commissoner and Zerihun Alemayehu, Deputy Head, Cooperative Commission
2. Mulugeta Demewoz, General Manager, and Sissay Kibret, Ethiopian Fruit and Vegetable Marketing Enterprise (Etfruit)
3. Dr Geletu Bejiga, Manager, and Ato Gabri Hiwot, Administrator, Green Focus Ethiopia LTD., B.V.I. (producer and exporter)
4. Ermejachew Regassa, Division Manager Cargo Market Development, Ethiopian Airlines

Saturday 25 October

1. Solomon Sebhatu, Managing Director, Menagesha Flowers plc (producer and exporter)
2. Dr Lemlem Sissay, Manager, Ethiodream plc (producer and exporter)

Sunday 26 October

1. Tsegaye Abebe, Chairman, EHPEA (producer and exporter)

2. Hans Akerboom, Aid Secretary, Netherlands Embassy

Monday 27 October

1. Hailemariam Kidanu , General Manager , Upper Awash Agro. Industry Enterprise (producer and exporter)
2. Lema Gebegeyehu, National Agricultural Input Authority
3. Tesfaye t/Haimanot, Kaleb Services, (organic pineapple producer and exporter)

Tuesday 28 October

1. Ato Fantaya Biftu, Minister of Trade and Industry
2. Worked at EEPA

Wednesday 29 October

1. Sumet Chanie, Executive Director, EHPEA

Worked on Workshop agenda and presentations at EEPA

Thursday 30 October

Workshop "Assessment of Needs and Feasibility of Commercial Production of Tropical Fruits and Vegetables in Ethiopia"
(see Annex 3 for list of Workshop attendees)

1. Teshager Asfaw, Political & Commercial Officer, Netherlands Embassy
2. Dr Solomon Bellete, Chairman, Agricultural Economics Society, Ethiopia Workshop

Friday 31 October

1. Aschenaki Gehrehiwot, Consultant

2. Gisaw Molla, Director General, Ethiopian Export Promotion Agency - EEPA

3. M. Michel Drobniak, Economic Counseller, French Embassy and Ms Meaza Bekele, Agence Française de Développement
4. Mrs Aster Stephanos, Statistics and Project Planning Department, Coffee and Tea Authority (CTA)

Saturday 1 November

1. Yohannes Agonafir – VOCA (NGO)

2. Shaun Phillip Bourgeois – VOCA (NGO)
3. Heather Kindness, Manager, Save the Children Fund

Sunday 2 November

1. Tsegaye Abebe, General Manager, Ethio Flora PLC, Blue Nile Farms (producer and exporter)
2. Bhanu Prasad, J.J Kothari & Co (producer and exporter)
3. T.Senthil Kumaran, Manager, Holetta Roses PLC (producer and exporter)
4. Feico Smil, General Manager, Terra Nigra Africa Ltd. (seed supplier)

Flight Addis Ababa – Dubai

UNITED ARAB EMIRATES

Monday 3 November

Visit to Dubai Hamriya fruit and vegetable market
Visits to supermarkets

Tuesday 4 November

1. Irfan Aziz , General Manager , International Foodstuffs Company (importer)
2. Ibrahim Abdullah, Director, Sandrilla Trading Co. (importer)
3. M Afzaal Khalid , Manager , Smart One Trade Company (importer)
4. Sanjay Jadhav, Trading Manager, Sivaram. Sales Manager, Barakat Vegetables and Fruit Co. (importer)
5. Jude Fernandes, Dubai Cargo Village – (setting up cargo hub)

Wednesday 5 November

1. Shokrollah H Ali, Managing Director, Shokri Hassan Trading Co.(importer)
2. Jamal Hussain, General Manager, Kibons International LLC (importer)
3. A Redha Mansouri, General Manager Fresh Fruit Company (importer)
4. Tinus Hendrikse, Purchasing Manager, Spinneys (supermarket and importer)
5. Mazan Barakat, General Manager, Abbner & Zainy, Sharjah (producer and importer)

Thursday 6 November

Flight Dubai - London

SUDAN

Saturday October 18
Flight London –Dubai-Khartoum

Sunday, October 19

1. Dr Omar Wahab, Director, Department of Horticulture, Ministry of Agriculture and Forestry
2. Mr Aladdin Ali Margan, Head Fruit & Vegetable Development Section, Deputy Director, Department of Horticulture, Ministry of Agriculture and Forests,
3. Mr Gobara Mokhton Osman, Head of Marketing Section, Department of Horticulture, Ministry of Agriculture and Forestry

Monday October 20

1. Professor Sadig Omara, State Minister, Ministry of Agriculture and Forestry
2. Ms Aziza, Officer in Marketing Section, Department of Horticulture, Ministry of Agriculture and Forestry
3. Sudan Airlines Cargo
4. Airport Phytosanitary Office
5. Mr Mubarak, Manager of Airport office, Sudanese Standards and Metrology Organization
6. Mr ElFatih El Zein El Tayeb, General Director, Sudan Trade Point
7. Secretary of State, Ministry of Foreign Trade
8. Mr Elrayag A-Elzubeir, Director Department of Standards, Sudanese Standards and Metrology Organisation

Tuesday, October 21

1. Dr Badereldin Elshiekh, Managing Director of Horticulture Section, Ministry of Agriculture, Gezira State.
2. Dr Mohammed E Elkashif, Director, National Institute for Promotion of Horticultural Exports, University of Gezira
3. Dr Mohamed Taha Yousif, Research Officer, National Institute for Promotion of Horticultural Exports, University of Gezira

Wednesday October 22

1. Mr Luai Osman Hashim, Director General, Ministry of Agriculture, Animal Wealth and Irrigation, Khartoum state (overseeing the Sudanese Horticulture Export Company)
2. Mr Osman, Managing Director, Wafra
3. Mohammed Abdalla Shulgami, Managing Director, Kuwaiti Sudanese Packaging Co Ltd

Thursday October 23

1. Dr Noraie, Agriculture Research Corporation, Khartoum North
2. Professor A Halim Rahama Ahmed, Director, Food Research Centre, Khartoum North
3. Dr Mohamed Ibrahim Abdel Kareem, Deputy Director, Food Research Centre, Khartoum North
4. Khartoum North Market

5. Mr Elias Elmoniem, General Manager, Silait Agricultural Project

Friday October 24

Review of notes and initial preparation of Workshop material

Saturday October 25

1. Mr Yaseen El Tayeb, General Manager, Horticultural Export Village (at offices of the Sudanese Horticulture Export Company)
2. Professor Gaafor Hussein Mohamedali, (at offices of the Sudanese Horticulture Export Company)
3. Dr Abdallah El Jayeb Khalfalla, General Manager, Agribusiness Sudan Company Ltd
4. Mr Ahmed, NALIC, Naseem Agricultural and Livestock Investing Company

Sunday October 26

1. Ms Muna Eltahir Hamdan, Projects Officer, British Embassy, Khartoum
2. Ms Baha Ahmed Sharief, Assistant Projects Officer, British Embassy, Khartoum
3. Mr Khalid Mekki Osman, Commercial Officer, British Embassy, Khartoum
4. Professor Gineff, Agricultural Adviser to president of Arab Authority for Agricultural Investment and Development AAAID

Monday October 27

1. Mr Ashraf A Mutwakil, Manager, Research and Information Department, Union of Sudanese Chambers of Commerce, Khartoum
2. Mr Omar Abdulgaffar, Manager, Tobo Trading Vegetables and Fruits Export, Khartoum (trader)
3. Mr Wadelhage, Manager, WadElHag Food Stuff, Khartoum (trader)
4. Mr Abd Elmageed M Elmageed, Manager, El Maqddam Business Trading (import and export), Khartoum (trader)
5. Prof Abdulrazij, Advisor to Minister, Ministry of Agriculture and Forests, Khartoum

Final preparation of Workshop

Tuesday October 28

Workshop

Wednesday October 29
Overview discussion with Mr Aladdin and Mr Gobara, and other members of Department of Horticulture, Ministry of Agriculture and Forestry

Flight Khartoum-Dubai-London

EUROPEAN CONTACTS

1. Peter Durbar, Tropifresh – Dubois Enterprises Ltd., 40 New Spitalfields Market, 1 Sherrin Road, London E 10 5SH

2. Jimmy Pan, *Director* Jimmy Pan Impex, Stand 56, Market Pavilion, New Spitalfields Market, 1 Sherrin Road, Leyton, London E 10 5SJ

3. Julian Woodley, *Managing Director,* Alan Turner, *Company Secretary,* Brian Honess, Horticulturalist, High Wycombe

4. Chawtal Singh, Singh and Co, Spitalfields

5. Teampro Dr Ing R Tocklu

6. Karen Charman, Utopia UK Ltd (Importers of fruit and vegetables).

ANNEX 3 WORKSHOP ON ETHIOPIAN FRUIT AND VEGETABLE EXPORT DEVELOPMENT
THE ASSEMBLY HALL, QUALITY AND STANDARDS AUTHORITY
ADDIS ABABA OCTOBER 30, 2003

Organised by

Ethiopian Export Promotion Agency (EEPA)
Natural Resources Institute (NRI), UK
UN Common Fund for Commodities (CFC), Netherlands

Introduction

The aim of the workshop was to present and discuss the interim findings from various work undertaken by NRI and the EEPA with respect to the study commissioned by the CFC on *Assessment of Needs and Feasibility of Commercial Production of Tropical Fruits and Vegetables for Diversified Exports in Ethiopia and Sudan.*

The main objectives of the workshop were:

- Identification of major constraints and opportunities for commercial export- oriented developments of fruits and vegetables in Ethiopia.
- Identify strategies, priority areas for improvement and support measures required from CFC and other sources to stimulate an expansion of fruit and vegetable exports.

The Workshop was chaired by Ato Gizaw Molla, the Director General of the EEPA. There were 57 participants at the Workshop representing a wide range of stakeholders in the fruit and vegetable sector including producers, exporters, traders, service providers, Government institutions, NGOs, trade associations, regional agricultural and trade and industry bureaus and international donor organizations.

Brief details of Workshop participants are listed at the end of this Annex. The Workshop Agenda and timetable are outlined below. Summaries of some of the presentations are to be found at the end of the Annex.

Time	Session	Activity
		MORNING SESSION
8.30		Registration
9.15		Welcoming remarks, including introduction of participants; outline of the Agenda *Dessalegn Yigsaw (EEPA)*
9.25		Opening Remarks *Gizaw Molla (DG of EEPA)*

9.40	1	Introduction to the Study • CFC Overview *Getachew Gebre-Medhin (CFC)* • Specific project details Background to the Study Objectives and structure of Workshop *Peter Greenhalgh (NRI)*
10.15	2	An Overview of Ethiopian Fruit and Vegetable Export Sub-Sector – and the role of the EEPA *Sisay Habte (EEPA)*
10.45		Coffee/Tea
11.30	3	The International Market Place and Implications for Ethiopian Fruit and Vegetable Producers and Exporters - Constraints to Development *Peter Greenhalgh (NRI)*
12.00	4	Organisations Involved in Facilitating Ethiopian Fruit and Vegetable Exports DFID/EHPEA - *Sumet Chanie (EHPEA)* VOCA- *Yohannes Agonifer* Netherlands – *Teshager Asfaw* France – *Ms Catherine Vincent D'Almeida* USAID – *Mr Ahemed Mohamed*
12.30	5	Questions and Answers
13.00		Close – Morning Sessions – Lunch
		AFTERNOON SESSION
2.00	6	Introduction to Syndicate Group Work. *Peter Greenhalgh* Syndicate Groups A. Fruit and vegetable export production – key requirements for growth and key constraints *Facilitator and Rapporteur: Yohannes Agonifer* B. Export market development – requirements (market development, customer awareness, infrastructural and technical support) *Facilitator : Dr Solomon Bellete* *Rapporteur: Mrs Ermijachew Regassa* In each case identify three major requirements and constraints; possible projects to overcome these constraints
3.45		Tea/Coffee
4.15	7	Plenary Session to share findings/outputs from three Syndicate Groups

5.00	8	Discussion of Possible Projects Summing up and Outline of Next Steps
5.45		Close

Presentations

The Workshop began with some welcoming remarks by Mr Dessalegn Yigsaw of the EEPA, which included an introduction of participants and an outline of the Agenda. The Opening Address (see below) by Mr Gizaw Molla provided an overview of various aspects of the development of the horticulture sector in Ethiopia and the work of the EEPA.

Dr Getachew Gebre-Medhin, Principal Project Manager for the CFC provided background to the project including the 1999 meeting in Cairo, which identified the need to diversify exports from African countries to high value exports, such as tropical fruit. He noted that it was important for CFC projects not to create over-supply which was the reason why the proposed project to be discussed during the workshop and which was the subject of the current project was focused on both Ethiopia and Sudan. It is important that activities proposed for each country are complementary. More details on the CFC project including the workplan were presented by Dr Peter Greenhalgh (see below).

A detailed overview of the Ethiopian fruit and vegetable sub-sector was then presented by Mr Sisay Habte of the EEPA (see below). The information presented will be the basis of a forthcoming report to be published by the EEPA which will deal with a wide range of issues relating to the fruit and vegetable sub-sector. Topics include major produce types, production structure, major supplying regions, area cultivated, production volumes, productivity and domestic supply chain; input use, irrigation, harvesting seasons, harvesting and post-harvest handling (storage, packaging and transportation), research and extension, human resource (technical expertise), standards and grading, institution and support system, market information and investment in the sector. In addition, the performance of the export sector will be overviewed (export statistics, major export products and exporters, export destination). Finally, recent positive developments are discussed along with investment opportunities in the sub-sector, while existing constraints and suggested solutions are outlined.

Then followed Peter Greenhalgh's review of trends in the international markets for fruit and vegetables dealing with aspects of the global, EU and Middle East markets (see below). Some implications of these developments were then analysed.

Representatives of various donor organizations outlined their institutions involvement in facilitating fruit and vegetables production and exports. The organisations represented were VOCA; (Mr Yohannes Agonafir), the EHPEA (Ethiopian Horticulture Producers and Exporters Association)/DFID (Mr Shumet Chanie); Agence Française de Développement (Ms Catherine Vincent D'Almeida), the Netherlands Embassy (Teshager Asfaw) and USAID (Mr Ahemed Mohamed). The current and possible potential inputs of these organisations to the sector are discussed in Section 2.5.

Following the donor representatives' presentations, there was a question and answer session, summarised below.

Q1. Is there possibility of joint funding (co-financing) for specific projects?

Ans: The intention of the Netherlands Government is to see more Dutch investors come to developing countries like Ethiopia. If Dutch entrepreneurs find a counterpart in this country there is financing incentive to support the process through an organised funding program. However there is a room for further discussion on co-financing with institutions such as CFC.

Q2. What are the criteria used to select partners (entrepreneurs) to work together with Dutch investors?

Ans: There are no special criteria for selecting partners in developing countries. The Netherlands Embassy simply arranges an inward trade mission and this is announced through media, EEPA, Chamber of Commerce, so that potential Ethiopian entrepreneurs having resources and land, can make contacts for further joint business ventures. It will be up to the local entrepreneur to convince the counterpart. The Embassy also provides addresses of Dutch investors for further contacts.

A comment was given on coordinating or creating coherence between donors' activities. And to this question, the Dutch and NRI suggested that a sub-sector donor group should be formed through the intermediary role of MOTI or EEPA.

It was also suggested that to establish sustainable outgrower schemes that donors give consideration to the most significant problems of farmers and inject financial assistance in the form of either seed, irrigation pumps, machinery and show the smallholder F&V farmers that they are committed to a real and true business relationship between the farmers and the exporters.

Q3: The subsidy program in developed countries is discouraging the smallholders in developing countries. What can you suggest on that?

Ans: Protection is not the agenda of the present day world economies. Instead producers and traders should be supported by institutions in the form of training (capacity building), technology transfer, market information, financing (sustainable) credit, other technical assistance that enables them to fulfill the market demand (in supply and quality, price) through EEPA, EHEPA, MTI, Chamber of Commerce, donor agencies as CFC, DFID, USAID, etc and be competitive.

Q4: What methods does EHPEA apply in promoting the export of F&V products?

Ans: Since our organization is still young, we are now doing few promotional works on Ethiopian floriculture by inviting importers mainly (Dutch flower importers) and doing orientation workshops locally on quality requirements of EU market such as HACCP, EUREPGAP to comply with the changing quality demand of the markets.

Although standards and grades are set by QSAE, its implementation capacity is inadequate and the standards developed so far are not keeping pace with the dynamic world quality demand.

Q5: Appreciating the presentation of the aggregate data on F&V production and exports of the country, how can the challenge of the lack of such information be solved in the future?

Ans: Although not sufficient, EEPA is undertaking a potential market study on horticultural product, which will be disseminated upon completion. However emphasis should be given to access to market and technical information on a sustainable basis from multilateral and specialized agencies, a payment basis. The donors' role at this point is crucial.

Q6: Transportation, which is found to take 60-80% of the selling price is said to be a bottleneck, but at the same time Ethiopian Airlines is not in a position to accommodate the present demand. How can this problem be solved?

Ans: Several possible solutions were suggested including:
- Increase the capacity of EA by the introduction of cargo planes.
- Invite other airlines to give similar services.
- Expand the country's tourism industry to increase the number of south bound flights so that sufficient space for F&V is available.
- Develop the sea transport system.

Syndicate Group Discussions

Group A: Fruit and vegetable export production – key requirements for growth and key constraints

Constraints

- Unconducive sectoral policies on (land, extension, water [irrigation], finance, marketing).
- Weak variety development and seed propagation.
- Absence of training and lack of specialized manpower.
- Absence of integrated pest management.

Proposed Solutions:

- Improve the investment environment as recently observed on the floriculture sector.

- Establish committed institutions for the multiplication and distribution of planting materials through the assistance of government and NGOs such as CFC.
- Build capacity through supplementary training.
- Adopt strong IPM program.

Comments:

- Land availability is not a problem at present since the investment situation is improved with better government commitment.
- The problem is lack of integration among institutions during implementation.
- There should be a horticultural strategy in terms of marketing, finance, and support institutions as in Kenya responsible for the continuing development of sector. However the establishment of EHPEA is an historical leap.
- The need to strengthen the existing association (EHPEA) and EEPA through continuous government and NGO support is a prime importance.

As an overall summary of Group A discussions it was agreed that continued policy support and encouragement need to be provided for the commercial production of fruits and vegetables, including credit facilities at favourable conditions, better water management and utilization techniques as well as better land use policy. Furthermore, it was underlined that a Steering Committee comprising public and private sector stakeholders should be established to regularly monitor developments and address emerging issues on a regular basis. The need to strengthen producer-exporter associations was also emphasised.

Group B: Export market development – requirements (market development, customer awareness, infrastructural and technical support)

Constraints

- Unorganized marketing.
- Transport.
- Poor quality.
- Market information.
- Training.
- Non-tariff barriers.
- Packaging.
- Infrastructure (cold store) etc.

Proposed Solutions

- Develop well-organized cooperatives.
- Improve local road network, and improve capacity of Ethiopian Airlines in terms of space, competitive price.
- Establish quality control system to adopt standards and grades at all levels of the trade channel.
- Avail information on the laws and regulations, price, etc. of local and international market.
- Provide technical assistance to create awareness on non-tariff barriers.
- Encourage investors to enter to the production of quality packaging suitable for export products and create a group purchase mechanism from abroad to increase negotiation power and benefit from bulk purchase.

With regard to Group B group conclusions, the following priority areas were identified for action oriented measures:

- Measures to enhance marketing efficiency including transportation, packaging, storage, quality assurance and market promotion;
- Human capacity building including training of farmers, upgrading skills at all levels, strengthening the organisational capacity of farmers and traders, building awareness of market requirements, etc.
- Availability of financing to the sector on favourable terms and conditions.

Finally it was agreed that after the identification of constraints and opportunities, priorities will be set and a specific project proposal will be developed by CFC in the near future.

WELCOME ADDRESS
Ato Gizaw Molla
Director General
Ethiopian Export Promotion Agency

Your Excellencies, Invited guests, Ladies and Gentlemen,

Allow me first; on behalf of the Ethiopian Export Promotion Agency and on my own behalf, to express my sincere appreciation and gratitude to the United Nations Common Fund for Commodities which join hands with us in organizing this workshop on fruits and vegetables export development. In particular, my special thanks goes to Dr. Getachew Gebre-Medhin from CFC for his relentless effort and support to realize this workshop.

This workshop is held when the horticulture sector in our country is getting a momentum as a result of the commitment and conductive environment created by the government of Ethiopia in terms of access to cultivable land and long-term investment finance. Since the introduction of these measures, new investors, local as well as foreign, are coming in unprecedented magnitude.

Commercial production of horticultural products, however, needs to be complemented through smallholder farmers participation in out-grower schemes to exploit the immense potential in the sector. Small holders in many countries do produce high quality vegetables, which enter both local and foreign markets with no reduction, in social, environmental, food safety and quality standards. The key factors for the success of such enterprises are the assurance the farmers get access to necessary technical skills, finance, input supplies and market information and that a relationship of trust that has been built up between the farmers and the exporting company.

In this respect, I would like to commend the pioneering effort of VOCA Ethiopia, which is trying to forge a marketing arrangement between fruit and vegetable producer cooperative unions and horticulture exporters. It is also my sincere hope that other NGOs and governmental institutions will follow and strengthen this innovative practice. I will also take this opportunity to assure those of you, who will start similar ventures, of my organizations assistance in every possible aspect.

Excellencies, Ladies and Gentlemen,

The Ethiopian Promotion Agency since its establishment 5 years ago has performed various tasks aimed at establishing market linkages between domestic producers and foreign buyers, attracting both domestic and foreign investors into the sub-sector and removing impediments faced by exporters when they deal with business support organizations (BSOs).

The initial focus of our activity was aimed at in attracting wider private sector participation into the sub-sector by creating awareness among all stakeholders, private and government alike, of the underling potential for competitive production and export of horticultural products particularly flowers in Ethiopia. In this instance, a comprehensive study, which identifies potential opportunities, cost and benefit of producing and exporting flowers, international market trend for major flower varieties and areas that requires government interventions to attract

investors in to the sub-sector, was carried out and distributed to pertinent organizations and individuals.

The Middle East countries with a higher per capita income and consumption are among the major importers of horticultural products in the world. This along with their proximity to Ethiopia could create a big opportunity to our horticultural producers and exporters. Taking this into account we have undertaken a market assessment and a business matchmaking mission to Saudi Arabia, Kuwait and United Arab Emirates. The mission has given us an opportunity to identify products which can competitively be supplied from Ethiopia and establish an initial business contact between our exporters and buyers in the respective countries.

We have been providing producers and exporters information on market opportunities, rules and regulation of major importing countries and other relevant information and we will continue to do so in the future. We will also continue to play our business advocacy role on behalf of producers and exporters to facilitate smooth and effective operation of the export activity.

The quarterly/bi-annually horticultural sub-sector performance evaluation and business consultation meeting, chaired by the State Minster for Trade and Industry and attended by producer exporters, EEPA, BSOs, and other pertinent individuals, was also very fruitful in identifying and tackling problems and in promoting trade and investment.

Excellencies, Ladies and Gentlemen,

There are encouraging signs of improvement in the volume and value of export of horticultural products in the last two years. The volume and value of horticultural products export has increased by 79 % and 184 % respectively in 2002 when compared with 1998 fiscal year. In absolute terms the value of export has increased from 33.8 million birr in 1998 to 96.1 million birr in 2002. Market destinations for Ethiopian horticultural products have also increased from a mere 7 countries in 1998 to more than 20 countries in 2002 with major buyers including Djibouti, Netherlands, Sudan, Italy, Germany, Yemen, India, Morocco, Switzerland and Nigeria.

This achievement, however, is still low when compared with other high performing Sub-Saharan African countries and the perceived potential of the sector. Therefore there are many challenges ahead to improve our performance further through our cooperative action in areas of human resource development, physical and legal infrastructure, and product and market development. In this regard, this workshop on fruits and vegetables export development can be taken as a step in the right direction.

Finally, I would like to urge all of the participants of this workshop to effectively participate in identifying major problem areas that need to be addressed through interventions by the government, producers and exporters and donor agencies.

Wishing for a fruitful deliberation, I shall declare the workshop open! Thank you!

SPECIFIC PROJECT DETAILS, BACKGROUND TO THE STUDY OBJECTIVES AND STRUCTURE OF WORKSHOP

Peter Greenhalgh
Natural Resources Institute

A Background

CFC is financing projects to assist commodity export diversification
Funding a pilot project in Ethiopia and Sudan to assess the needs and feasibility of diversifying into high value tropical F & V products

Why is this study important?

F & V exports are increasingly important for some Sub Saharan African countries

- Increase foreign currency earnings
- F & V export expansion can have a direct impact on poverty reduction
- Makes intensive use of land and labour, especially women
- Ethiopia has some advantages for F&V production
- International F&V markets are growing

B Assignment Objectives and Rationale

Two major objectives

- Identification of major constraints and opportunities for commercial, export-orientated development of F&V
- Identify strategies, priority areas for improvement and support measures required from the CFC and other funding sources to stimulate an expansion of F&V exports

Export diversification can be an important avenue for agricultural growth and poverty reduction, particularly in Africa.

But some words of caution:

- Production is not only labour-intensive but also technology and management-intensive
- F&V supply chain and export market entry requirements differ significantly from bulk primary commodity exports
- F&V are not homogeneous commodities - quality, packaging and other marketing factors differentiate products and can be as important as costs in determining competitiveness
- Policy makers need to be aware of the technical, economic and social issues in expanding F&V exports, especially with regard to smallholders

Consequently, enthusiasm to export F&V sometimes runs ahead of practicalities.

C Project Tasks

Following tasks being undertaken:

1. Overall assessments of the tropical F&V trade in world markets and trends in demand and supply
2. Overview of EU and Middle-East F&V import markets
3. Assess potential of expanded production and export of quality tropical F&V from the North-East African region
4. Analysis of the constraints faced and the needs for the development of commercial production and marketing of tropical F&V
5. Examination of marketing systems in Ethiopia and Sudan
6. Quality assurance and certification capacities and weaknesses as well as capacity building requirements.

D Approach and Methodology

The work has been separated into various components including:

Literature review
Data collection
Identification of most likely target markets and products in the EU and Middle East

Field work in Ethiopia and Sudan

Evaluation and analysis of the fieldwork data
Workshops in Sudan and Ethiopia

Field work in target markets (EU, Middle East)
Preparation of Draft and Final Reports

THE INTERNATIONAL MARKET PLACE AND SOME IMPLICATIONS FOR ETHIOPIAN FRUIT AND VEGETABLE PRODUCERS AND EXPORTERS - CONSTRAINTS TO DEVELOPMENT

Peter Greenhalgh
Natural Resources Institute

OVERVIEW OF PRESENTATION

GLOBAL F & V MARKET TRENDS

- Substantial growth in volume and value of F&V traded – especially from developing countries
- F&V exports are a success story for some African countries e.g. Cote d'Ivoire, Kenya, South Africa, Zimbabwe
- But considerable competition from Asia and Latin America.

TRENDS FOR SPECIFIC F&V PRODUCTS

Demand for exotic and off-season F&V is growing quickly including:

- mangoes, papaya, pineapples, avocadoes and chillies
- convenience foods (pre-packed, semi-prepared)
- organic produce

SOME FEATURES OF THE EU F& V MARKET

- Highly demanding quality market
- Consumers increasingly concerned about production and processing methods and labelling of products
- Growing concentration in trading and retailing
- Increasingly buyer (supermarket) driven
- Buyers more selective about who supplies them
- Very competitive market

ASPECTS OF MIDDLE EAST AND REGIONAL MARKETS

- Expanding market but very competitive

SOME IMPLICATIONS FOR ETHIOPIA

CONVENIENCE F&V CONSUMER PACKS

- Fast expanding market for pre-packed bar coded F&V – predominantly through European supermarkets
- Reflects growth of new innovative product lines e.g. high care products (trimmed and packed beans, ready prepared salads, pre-prepared stir fry mixes, prepared fruits)

- Trade value reached $ 4.5 billion in 2001
- Kenya is the leading African exporter of these products – require sizeable investments and technical know-how.

ORGANIC PRODUCE

- Accounts for fewer than 2% of F&V sales in most EU markets but commands a price premium
- Nevertheless, sales are growing quickly, particularly through supermarkets
- However, developing organic production can be difficult and risky and certification is costly, particularly for smallholders.

TRENDS FOR SPECIFIC F&V PRODUCTS

Demand for exotic and off-season F&V growing quickly

Tropical fruits account for about 7.5% of world trade in fruits but their share is increasing. Some former speciality fruit products have become mainstream e.g. pineapples, mangoes, papayas and avocadoes.

Some other speciality "exotic fruits" remain relatively small but are growing quickly e.g. cape gooseberries, small watermelons.

Similar trend with vegetables – thus vine and baby tomatoes have become mainstream premium products. While other "exotic and speciality vegetables" are growing quickly e.g. Chinese vegetables, fresh hearts of palm, tropical peppers, mange tout/snow peas, baby vegetables and purple carrots.

One of the strongest growths in speciality non-traditional exports has been in chillies and peppers – three-fold growth in last decade – export values in 2001 was nearly US$1 billion.

SOME FEATURES OF THE EU F& V MARKET

Expanding but highly demanding premium quality market. Consumers increasingly concerned about production and processing methods and product labelling

Standards are increasingly demanding – and relate to range of issues including pesticide residues, sanitary and phyto-sanitary controls, environmental impact, treatment of labour

Range of standards and codes of practice – some mandatory (e.g. Food Safety laws, HACCP systems), others not mandatory (e.g. European, supermarkets' own codes)

Growing concentration in trading and retailing; increasingly buyer (supermarket) driven with smaller share through wholesale markets

Buyers more selective about who supplies them

Very competitive market – sources and range of horticultural products available have expanded rapidly in recent years – but supply chains for these products involve a range of similar activities

Market access is now dependent on producers meeting consumer/buyers requirements; namely volume, reliable, quality, competitive prices, consistency, traceability including satisfying various food safety, ethical and environmental standards

SOME FEATURES OF THE MIDDLE EAST F&V MARKET

Growth in F&V imports but much smaller than the EU.
Import wide range of products from large number of countries.
Few markets are under-supplied.
Organic and pre-packed markets are small
Varied trading structures

- Saudi imports dominated by three companies
- UAE large number of importers
- Dubai acts as entrepot for neighbouring countries
- Yemen large imports via Saudi
- Preference for sales on consignment basis

Formal quality requirements less stringent than EU. In principle, Middle East markets offer better opportunities for smallholders than EU markets since do not have to meet detailed codes of practice and traceability audit trails
Markets are very price competitive. Much produce arrives by sea or truck (making much Ethiopian produce uncompetitive)
Possible seasonal market share for fine or extra fine beans (and maybe bobby beans), competing against Kenya and other African countries.
For fruit, possible that air freighted mangos, avocados or papaya might be able to find a market at certain times of the year

SOME IMPLICATIONS FOR ETHIOPIA

Compared with most other agricultural exports, F&V crops demand higher technical and managerial skills in order to meet more stringent marketing requirements – thus placing considerable organisational burdens on producers/exporters. As a result, it is becoming more difficult for small producers and exporters to enter the export market. (NRI CD-Rom "Small Producers in Export Horticulture: A Guide to Best Practice")
For Ethiopia to achieve sustained export growth to EU and ME markets requires an integrated supply chain with efficient linkages between the various stakeholders and stages stretching from grower to consumer. A breakdown or inadequacy at any stage can have a severely detrimental impact on perishable F&V exports.
To expand exports, both to EU and Middle East, requires precise aiming of products, varieties and distribution channels. Development must be market led.
Ethiopia must identify products that:
can be produced competitively, based on its particular land, labour, climatic advantages etc

- satisfy increasingly stringent standards, codes of practices and delivery requirements demanded by consumers, retailers and regulatory authorities; increasingly systems need to be in place that allow traceability of product from field to supermarket shelf

Ethiopian exporters need to be competitive, *vis a vis* other suppliers not only in terms of price but also in terms of volume, quality, varieties, seasonality, regularity of supplies, packaging.

There is a substantial and complex gap technical gap between the EU (and to a lesser extent Middle East) market requirements and many current Ethiopian practices and capabilities. In the short term, the less demanding markets in the EU and ME might offer better marketing opportunities.

The EU and ME are now buyers' markets, so Ethiopian producers/exporters need to convince importers to switch from other sources by demonstrating an ability to achieve consistent delivery of high quality product at competitive prices.

The lessons from experience of F&V export development elsewhere in Africa, which should help to frame Ethiopia's efforts to expand exports to the EU and Middle East are that:

(i) Private initiative must drive the industry

(ii) Government's role should be regulatory and facilitative, and provides an enabling environment in which the private sector can thrive. However, public sector help is needed to lower entry barriers facing potential exporters e.g. access to market and technical information and expertise.

(iii) Successful F&V exports require a degree of collective action by sector stakeholders, through institutions that represents the commercial interests of the sector.

(iv) Donors can assist the sector, but should do so by supporting the role recommended for Government.

(v) Audits of production and trading processes are increasingly needed to satisfy both EU and supermarket requirements (e.g., EUREPGAP, organic certification). Audit is costly so a priority is to establish national and/or regional standards and regulations and to obtain international accreditation for domestic auditing and certification institutions.

Over the past year, various key constraints have been identified that are impeding Ethiopia's F&V export development. These include access to airfreight (which is invariably the single biggest cost in delivering horticultural products to EU and Middle East markets); access to expertise, to land, to finance, to planting materials, to cold storage and to agrochemicals. Some of these are already being addressed.

The analysis provides a number of policy options that government and donors can adopt. In particular, capacity building and institutional strengthening, which can take a number of forms, e.g.:

- providing assistance to help strengthen horticultural association
- assist national export promotion agencies in order to develop trade analysis capacity and improve the collection and dissemination of market information as well as generally support horticulture export development
- support and build market awareness and orientation among potential focused export group members
- develop the capacity of the national quality standards authorities to support horticulture export development
- develop capacity to provide training appropriate to the sector

- assist in the development of strategies for greater smallholder involvement in export horticulture (e.g. contract farming, outgrower schemes)
- develop organic F&V production and certification schemes
- strengthening local entrepreneurial and management skills
- improving financial institutions and access to credit
- facilitate Ethiopia's ability to protect its plant varieties under TRIPS.

A F&V export expansion strategy needs to be based on a more detailed and continuous market review than is possible in this project. Opportunities should be examined for various products in different markets across the EU, ME and regional markets, which could be exploited by new suppliers

There are many challenges to be overcome if Ethiopia is to develop a successful export horticulture sector, but many countries have shown that it is possible and that the rewards can be substantial.

AN OVERVIEW OF ETHIOPIAN FRUIT AND VEGETABLE SECTOR

Sisay Habte
EEPA

Brief Overview

Part I - Deals with major produce types, structure of producers, major supplying regions, area cultivated, production volume, productivity and domestic supply chain.

Part II - Overview use of inputs, irrigation, harvesting season, harvesting and post-harvest handling (storage, packaging and transportation), research and extension, human resource (technical expertise), standards and grading, institution and support system, market information and investment in the sector.

Part III - The performance of the export sector will be overviewed (export statistics, major export products and exporters, export destination).

Part IV - Recent positive developments, sectoral investment opportunities, existing constraints and suggested solutions will be covered.

I. Brief Historical Evolution of Commercial Production (Distinguishing Features and Major Events)

1) Imperial Period

- 1950s and 1960s and early 1970s were golden ages for commercial farming.
- Royal families, elites of the monarchy, professionals and foreigners played crucial role in production of export products in particular.
- Modern technologies were in use.
- Small growers contributed a lot in supplying citrus fruits and some vegetables for local market.
- Ethiopia was exporting large amount of bananas to Italy and Saudi Arabia.
- Banana, capsicum and citrus fruits were major exports.
- In 1967, almost 93% of Saudi Arabia's imports of banana in value terms were from Ethiopia.
- West and South Europe, The Red Sea, Arabian Gulf and French Somaliland were major export markets.
- Major supplying area were located in Rift Valley (Melka Sadi, Awara Melka, Abadir, Tibila, Degaga, Sodere, Wonji, Aba Samuel, Dukem, Zwai, Awassa, Bilate, Arba Minch, Ghibe, Elen, Erer Gota, Guder, Wondo Genet and Eritrea (Elbered, Barka and Chinda).
- The first vegetable processing plant (Melge Wondo Meat and Vegetable Processing Factory) established.
- Immediately before the 1974 'Ethiopian Revolution' exports volume reached 33,000 tonnes.
- Sea transportation played important role beside railway and airfreight.

2) The Period of Military Regime (1974-1991)

- Export volume was plummeted to 4000 tones during the period immediately after power takeover of Derg but revived after 1976 (11,300 tones) including spices.
- All commercial farms were confiscated and no active role of private sector.
- Government tried to expand production (new citrus plantation at farms under UAAIE).
- Establishment of HDA under MSFD which was replaced by HDC under the same Ministry.
- Ethiopian Fruit and Vegetables Marketing Enterprise (known by brand name Etfruit).
- Direct subsidy for export products.
- In respect to export market, emphasis was given to state farms and a few cooperatives.
- Expansion of citrus fruits plantation at farms under UAAIE.
- Most of banana supply shifted from state farms to smallholders, and vice versa for citrus.
- Establishment of Merti Processing Plant for fruit and vegetables through financial support of Federal Republic of Germany.
- Small commercial growers flourished in areas surrounding state farms
- Inefficient in their management and supervision.

3) The Period of EPRDF (Since 1991)

- Undergone through major structural reforms:-
    - MSFD was disbanded and replaced by SESA.
    - HDC was disbanded and enterprises were re-established.
    - More broader internal management authority provided to enterprises.
    - Some private investors enter in to the sector.
    - Subsidies were removed.
    - Major shift in suppliers for banana from state farms to smallholders and vice versa for citrus (orange and mandarin).
    - A number of market oriented small growers have been sprung up.

Smallholder Area of Cultivation &Production

Area in ha, Volume in tonnes

Region	Fruit		Vegetable		Total	
	Area	Prod.	Area	Prod.	Area	Prod.
Oromia	7,810	86,041	98,385	817,685	106,195	903,726
SNNPRS	12,477	318,489	77,350	719,915	89,827	1,038,404
Amhara	398	4,447	83,612	547,887	84,010	552,334
Harari	380	8,200	1,043	9,951	1,423	18,151
Dire Dawa	467	7,251	358	4,492	825	11,743
Addis Ababa	-	-	344	7,379	344	7,379
Total	21,532	424,428	261,095	2,107,309	282,623	2,531,737

Regional Distribution of Production (Percentage Share)

Region	Fruit	Vegetable	Total
Oromia	20.27	38.80	35.69
SNNPRS	75.04	34.16	41.02
Amhara	1.05	26.00	21.82
Harari	1.93	0.47	0.72
Dire Dawa	1.71	0.22	0.46
Addis Ababa	-	0.35	0.29

Total Area and Production of Fruit & Vegetables

Product Group	Smallholders			State Farms			Total	
	Area	Prod.	Share	Area	Prod.	Share	Area	Prod.
Fruit	21532	424428	90%	2290	49542	10%	23822	473970
Vegetable	261095	2107309	99%	759	17425	1%	261854	2124734
Total	282627	2531737	97%	3049	66967	3%	285676	2598704

Five Years Export Statistics

Volume tonnes, value in USD

Year	Vegetables		Fruits		Total	
	Volume	Value	Volume	Value	Volume	Value
1998	13,844.30	3,490,029	3,902.60	1,129,107	17,746.90	4,619,136
1999	12,468.91	3,641,871	3,667.95	1,084,834	16,074.48	4,726,705
2000	12,485.76	3,279,412	2,631.17	1,083,665	15,116.72	4,363,077
2001	22,482.10	7,036,559	5,270.99	1,449,038	27,753.09	8,485,598
2002	26,915.93	8,593,558	5,026.05	2,685,645	31,941.98	11,279,203
Growth (2002 over 1998)	94%	146%	29%	144%	30%	144%

Major Vegetable Type (Smallholders)

Production in tonnes

Vegetable Type	Production	% Share from total vegetable
Potato	945,365	45.12
Sweet Potato	531,488	25.14
Cabbage (including Kale)	135,070	6.40
Yam	132,795	6.32
Onion	97,570	4.60
Tomato	95,515	4.50
Shallot	68,633	3.20
Beet Root	23,517	1.10
Carrot	20,365	0.97
Garlic	17,805	0.80
Others	39,258	1.85

Major Fruit Type

Production in tonnes

Fruit Type	Production	% Share from total fruit
Banana	255,145	60.75
Avocado	79,543	18.94
Papaya	36,837	8.77
Mango	30,547	7.27
Citrus	17,909	4.27

Regional Distribution of Fruit Production for Major Products

(Percentage Share)

Fruit Type	Region				
	Oromia	SNNPRS	Harari	Addis Ababa	Dire Dawa
Banana	18.75	80.66	0.24	-	0.35
Avocado	-	100	-	-	-
Papaya	60.58	24.43	4.34	-	10.65
Mango	14.40	65.95	19.64	-	-
Citrus	64.17	22.34	-	-	13.49

Regional Distribution of Vegetable Production for Major Products

(Percentage Share)

Vegetable Type	Region					
	Oromia	SNNPRS	Amhara	Harari	Addis Ababa	Dire Dawa
Potato	29.77	19.10	50.89	0.09	0.03	0.03
Sweet Potato	29.68	68.82	-	1.50	-	-
Yam	18.97	81.03	-	-	-	-
Tomato	92.52	3.89	-	0.51	0.09	2.99
Onion	35.59	-	62.78	0.29	0.06	1.28
Shallot	100	-	-	-	-	-
Garlic	100	-	-	-	-	-
Cabbage (including Kale)	56.32	42.29	-	0.20	1.14	0.05
Beet Root	96.21	-	-	-	3.79	-
Carrot	72.13	21.48	-	-	6.39	-

Existing Major Produce Types

Domestic	Export	
	Europe	Djibouti and Others
Orange, Mandarin, banana, lime, lemon, mango, avocado, papaya, pineapple, grape, grapefruit, apple, guava, potato, sweet potato, onion, shallot, cabbages, pepper hot, carrot, tomato, leek, garlic, beet root, processed products, etc.	Green beans (bobby stage), melon, okra, asparagus (previously), passion fruit.	All sold in domestic market, processed products.

Ethiopia's Position in Productivity (yield/ha in tonnes)

Fruit or Vegetable Type	Producer (Country)						
Orange	Small Growers	State Farms	World	USA	Israel	Spain	Morocco
	11.24	30.82	17.42	32	31.66	19.83	16.06
Banana	"	"	"	Spain	Costa Rica	Somalia	Cameroon
	21.62	9.89	16.22	45.70	47.25	16.83	13.63
Mango	"	"	"	Cape Verde	Sudan	Peru	India
	15.17	8.7	8.25	45.0	20.57	14.30	8.19
Tomato	"	"	"	Netherlands	Korea Rep.	Egypt	Yemen
	18.09	26.59	27.40	443	58.01	34.29	14.98
Potato	"	"	"	Netherlands	Mauritius	Jordan	Sri Lanka
	7.37	11.21	15.85	45.18	22.39	26.42	13.13
Onion + Shallot	"	"	"	New Zeeland	China	France	Burkina Faso
	6.48	15.41		36.62	23.52	19.02	17
Green Beans (Bobby Stage)	-	5.4 (UAAIE) 3.13 (HDE)	" 6.8	Kenya 11.3	Egypt 9.95	Senegal 11.0	Kuwait 23.2

Source: *Calculated based on data from regional agricultural bureau, for other countries three years average data taken from FAO and respective enterprise for UAAIE and HDE.*

Major Importers of Ethiopian Fruit and Vegetable and Their Respective Share in 2002

Importer	Fruit		Vegetables		Total	
	Volume	Value	Volume	Value	Volume	Value
Djibouti	96	96	69	48	74	60
Netherlands	-	-	2	12	2	9
Sudan	1	1	6	8	5	7
Italy	0.12	0.05	2	6	2	5
Germany	0.11	0.15	1	5	1	4
Yemen	1.34	1.60	4	4	4	4
Others	1.4	1.20	16	17	12	11

Source: Computed based on data obtained from ECA.

Fruit and Vegetables Contribution to Total Export

Volume in tonnes, Value in 1000USD

Item	2000		2001*		2002*	
	Volume	Value	Volume	Value	Volume	Value
Total Export	323,432	486,957	335,074	434,043	586,404	454,558
Fruit, Vegetable & Flower	15,306	4,748	27,759	8,641	31,954	11,306
Fruit and Vegetable	15,117	4,363	27,753	8,486	31,942	11,279
Share of F&V						
- %	5	0.89	8	2	5	2.5
- %	99	92	99.9	98	99.9	99.7

Source: Prepared based on data from ECA

* Data for flowers understated because of problems in recording system at ECA.

Area Coverage and Production Volume in State Farms (Domestic Sales)

Area in ha, Volume in tonnes

Year	UAAIE				HDE				S.O.A.D.E.	
	Fruit		Vegetable		Fruit		Vegetable		Fruit	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
1998/99	-	-	-	-	348	3,232	116	1,955	-	-
1999/00	1777	44,336	624	17,554	349	3,460	142	2,571	109	453
2000/01	1,816	46,625	602	14,152	346	2,576	157	3,273	127	339
2001/02	1,843	43,865	816	16,255	-	-	-	-	129	660

Volume Share of Different Types of Fruit & Vegetables

Fruit		Vegetables	
Orange	75%	Tomato	79%
Mandarin	10%	Onion	18%
Banana	5%	Others	3%
Lime & Lemon	3%		
Others	7%		

Structure of Producers

Five (5) categories of growers can be identified:-

Small growers,
State owned enterprises,
Private investors,
Other governmental institutions,
NGOs.

Major Supplying Regions

Awash valley, Waliso, Ambo (Guder), Bako, Assosa, Gambella, East Hararghe, Arsi, Arba Minch, Bench Maji, Gojeb, Wolaita, Chiko, etc.

Use of Inputs

- Modern inputs are mainly used by state farms and few private investors.
- Few cooperative unions are supplying modern inputs to members.
- Most of small growers do not use modern input or use in small quantity.
- Fraudulence and adulteration is major problem of smallholders.
- Unavailability of fertilizers and chemicals out of the planting period of main cereals and pulses.
- No sufficient pre-financing mechanism.
- Most modern inputs are expensive for smallholders.
- No efficient, organized and genuine input distribution operating system.
- Own seed multiplication is prevalent.

Irrigation

⇒ Most highland growers use direct rain water except few areas, e.g. Alemaya, Kombolcha.
⇒ Almost all lowland areas use both traditional and modern irrigation methods
⇒ In some regions, irrigation is supplemented by rain
⇒ Oromia, SNNPR, Amhara and Tigrai have separate institutions to administer and promote irrigation,
⇒ Rivers, lakes, ponds, small boreholes and springs are source of irrigation water,
⇒ Inefficient and inappropriate utilization of irrigation water,
⇒ Both gravity and water pumps are in use,
⇒ Timely maintenance activities of irrigation scheme are not strong,
⇒ The demand for irrigation water has far exceeded its supply,
⇒ Furrow irrigation common method in Ethiopia.

Harvesting Season

➢ Irrigated areas - January - June.
➢ Rain fed production - mainly in wet season and immediately it over.
➢ Export vegetables to Europe - December - May.
➢ There is variation between crops.
➢ Excess harvest and shortages are severe problems.

- Weather conditions can influence harvesting periods.

Harvesting and Post-Harvest Handling

Harvesting

- Keeping appropriate season and day time are not strictly followed by some growers.
- In many areas picking by hand is usual.
- No heat and dust protection mechanism during harvesting and transport to store.
- Many of small growers use unsuitable holding materials such as sacks, polyethylene bags, etc.

Storage

- Small growers do not have suitable storage facilities.
- All export oriented state farms and a few private investors built cold store on farms.
- Some of the existing cold stores need updating and renovation.
- Varenero Construction can be considered as pioneer company to build cold store at Bole International Airport to be used by other companies.
- Lack of proper storage facilities has been one of major bottlenecks in extending perishability limit of fresh produces.

Packaging

- Locally manufactured cartons are not strong enough to compete with other countries.
- Jute sacks, plastic bags, wooden boxes, plastic crates, baskets, etc are used as packaging materials.
- Some of these materials are used inappropriately by small growers for some products.
- Sometimes traders supply packaging materials to growers.

Transportation

- √ Back animals, horse-pulled carts manual carriage, small pickup cars and heavy trucks.
- √ Only state farms and few private growers use refrigerated trucks for export products only.
- √ Ethio-Djibouti Railway plays important role for export to Djibouti and Djibouti port.
- √ Domestically sold produces and exports (except to Europe) are exposed to heat and dust during transportation.
- √ Only 5 of reefer trucks of Etfruit are new and others are outdated and inefficient.
- √ Ethio-Djibouti railway's wagons are not suitable for some fruit and vegetables products.
- √ Ethiopian Airlines is major freighter for Europe destined exports.
- √ Presently, Ethiopian Shipping Line does not have role in transporting fresh products.
- √ Military escort from farm to airport accompany export products for security purpose.

√ Airfreight charge (cost) range from 60-80% of selling price.

Research and Extension

- Some real success has been achieved in few crops (potato, onion, etc.).
- Some of the adapted (innovated) varieties (cultivars) restricted to trials only. There is huge gap between research results and availability to growers.
- EARO (Federal and Regional) has not been mandated to multiply and distribute improved seeds and seedling to growers.
- UAAIE has its own Research and Extension Department.
- Alemaya and Jimma Universities are also undertake some research.
- No due attention given to this sectors both in research and extension activities.
- Acute shortage of manpower is prolonged constraint (brain-drain).
- Insufficient supply of equipment green houses, chemicals, seed and seedlings.

Human Resource/Technical Expertise

- √ Has been major bottleneck for several years.
- √ Since 1999/2000, Jimma University has undertaking training programs at BSc and Diploma level in horticulture and floriculture.
- √ Starting from 1998, Alemaya University has been graduating horticulturalists at MSc level.
- √ Other agricultural colleges are also delivering some courses as part of their program.
- √ Like research centers, there is serious shortage of highly qualified instructors and facilities.
- √ Relatively cheap manual labor.

Standards and Grading

- Existing standards are not in use/not implemented.
- Some of existing standard for exports need updating.
- Most exporters (to Europe) use importers standards.
- In many cases, domestic markets and export to Djibouti apply traditional methods (External visualization: level of ripeness, colour, size, shape, absence of unwanted spots, firemen, etc.).
- In most cases, after the first grading at farms there is regarding at market places.

Institutions Policy and Support System

- o MOA, Regional Agriculture Bureaus, Cooperative Commission and Regional Cooperatives Bureaus are responsible institutions.
- o Institutionally, less attention has been given to the sector has no separate entity responsible for the sector unlike other countries lack even the status of department both at Federal MOA and Regional Agriculture Bureaus.
- o We have no Horticulture Development Policy.
- o Regional Irrigation Commissions (Authorities) render support to smallholders.
- o NGOs (SHI, VOCA Ethiopia and others religious organization).
- o Bilateral support system through agencies (GTZ, CBI, DFID, USAID, CIDA, SIDA, French Embassy, etc.)
- o Multilateral support system (UNDP, World Bank, EU).
- o Multinational companies (Shell Ethiopia Ltd.)

o Some of the support programs lack sustainability after the projects are terminated.

Market Information System

- ❖ No organized and systematic information flow.
- ❖ The problem persists both in smallholders and large enterprise.
- ❖ Oral exchange of information among friends and relatives is common method among small producers.
- ❖ The number of traders coming to a particular area and the way they behave used by growers as an indication of market condition.
- ❖ Market assessment in some cases.
- ❖ Lack of market information has been one of the problems resulting unbalanced and unfair haggling power between growers and traders.

Investment in the Sector

From July 1992 - June 2003

Number of Approved Projects	Operational		Implementation		Pre-implementation	
80	No	%	No	%	No	%
	21	26	10	13	49	61

- Lack momentum in implementation unlike flower sub-sector.
- The need for high initial investment and long gestation period to develop fruit farm.
- Land supply process has not been facilitative.
- Ultimate objective of some investors has been to use the opportunity for holding land.
- Many projects are not based on sufficient study.
- Many investors hold lands without having capacity to invest.
- Some investors change their mind after the project is approved.
- Timely evaluation and follow up it not sufficient and continuous.
- Non-uniform presentation of project proposal.

Recent Positive Development

a) Institutional and civil service reform.
   - Establishment of Ethiopian Export Promotion Agency (EEPA) and Ethiopian Investment Authority (EIA),
   - Establishment of Public-Private Partnership Forum and attention given to the sector by higher government officials.
   - Establishment of EHPEA.
   - Civil service reform program.

b) Availability of export financing loan.

c) Availability of land without procrastinated process (to be implemented in the future).

d) Allowance of importing inputs for horticultural products without paying taxes and non-registered inputs for own use.

e) Export incentives (Export Credit Guarantee Scheme).
   - Export Credit Guarantee Scheme.

- Export Trade Duty Incentive (DD, Voucher, BMW).
- Foreign Exchange Retention Scheme (Account A & B).
- Foreign Credit Scheme (Suppliers or Foreign Parters' Credit and External Loan).
- Franco Valuta Import Facility.

f) Commencement of training programs & graduation of horticulturalists at Diploma and Degree level at Jimma and Alemaya Universities.
g) The agreement made by Ethiopian Airlines to build cargo terminal at Bole International Airport.
h) The agreement signed by Ethiopian Airlines with Boeing Company to acquire new passenger airplanes expected to improves its underbelly cargo transport services.
i) Operation commencement of the new terminal field that could enable to accommodate big passenger airplanes relatively with wide space for cargo.
j) Some foreign investors visited the country and have shown interest in investing
k) Involvement of private sector in building cold stores.
l) Amendment of existing investment code.
m) Commencement of EAL direct flights to Paris and Stockholm.
n) Process started for organic and EUREPGAP certification.

Sectoral Investment Opportunities

- Acquiring wholly one or more state farms those in privatization pipeline.
- The option of joint venture.
- Establishment of processing plants.
- Freight and haulage activities.
- Establishing seed and seedling multiplication centers for varieties.
- Production of quality packaging materials.
- Production of inputs (fertilizers and pesticides).
- Export operations by establishing out-grower schemes.
- Organic production and export of semi-prepared, pre-packed, top-tailed, dried, fine, extra fine beans and some presently wild-growing new products.

Constraints

1. Absence of responsible and competent institution and sectoral development policy and strategy.
2. Capacity of small holders and private sector is at lower level.
3. Insufficient use of modern technologies (pre- and post-harvest).
4. Shortage of skilled and competent manpower.
5. Underdeveloped and unbalanced domestic marketing and exchange structure and system.
6. Low level of production and market information.
7. Relatively long gestation period to develop fruits.
8. In some periods inadequate supply of cargo space.
9. Infrastructural bottlenecks.
10. Non-application of existing standards and need for updating.
11. Unsuitable packaging materials and transportation facilities.

12. Obsolescence of some locally innovated cultivars and absence of market oriented dynamic research.
13. Poor extension and advice service and lack of sufficient pre-financing.
14. Prevalence of unusual pests.
15. Narrow breadth of producers and high concentration of export on few products to Europe.
16. Absence of strict and effective implementation system for rules and regulations in production and distribution of inputs. No code of Good Agricultural Practices in the country.
17. Non-uniform tax and other payments system.
18. Illegal trade.
19. Stringent non-tariff barriers from the market side

Suggested Solutions

1. Establish responsible institution and develop policy and strategy for horticulture development.
2. Vitalize the existing support effort from government side to develop the capacity in collaboration with international agencies and create synergy among producers and exporters.
3. Promote cooperative expansion and out-growers scheme.
4. Facilitate the supply of inputs in the off-seasons periods of cereals and pulses.
5. Expansion of rural banks.
6. Establish regional and national information network.
7. Strengthen training and research institutions both in highly qualified personnel by designing incentives to retain intellectuals and refurbish with necessary facilities.
8. Develop product oriented lease holding period, extending the lease period for fruits beyond the existing 35 years.
9. By setting priority for potentially identified areas, implement infrastructural development.
10. Update the existing standards and implement the same.
11. Carry out market (export) oriented dynamic research activities and establish strong extension system.
12. Give due attention at national level and exert concerted effort to protect disastrous pests.
13. Establish uniform tax and other payments system based on the local conditions and control wrong doers.
14. Develop system for implementation of rules and regulations in production and distribution of inputs. Design and implement code of Good Agricultural Practices.
15. Domestication of wild-growing F & V that can be supplied to world market.
16. Assess the possibilities for use of sea transportation.
17. Be pro-active in response to changes in non-tariff barriers and other market dynamics.
18. Encourage and support the existing packaging material manufacturers and new entrants. Allocate sufficient capital budget for replacement of Etfruit's aged trucks. Replace use of metal sheet wagons of Ethio-Djibouti railway by suitable materials.

List of workshop participants on **"Assessment of Needs and Feasibility of Commercial Production of Tropical Fruit & Vegetables for Diversified Exports in Ethiopia"**

Sr. No	Name of participants	Name of organization	Telephone	Fax
1	Neway Legessa	HDE	251-1-553088	251-1-570714
2	Tesfaye Tessera	UAAIE		
3	Tilaye Lema	EEPA	251-1-504777	251-1-505192
4	Ermijachew Regassa	Ethiopian Airlines	251-1-615271	251-1-615271
5	Mesfin G/Mariam	Export Product Promotion Agency	251-06-206582	251-06-206581
6	Frehiwot D/Tsion	Ethio Djibouti Railway	251-1-517250	
7	Shumet Chanie	EHPEA	251-1-636750	251-1-636753
8	Samuel Gizaw	ETV	251-1-527713	
9	Endale Zewed	ETV	251-1-526606	
10	Mesfin Alayeh			
11	Niguise Kibru	Ethiopia News Agency	251-1-565221	251-1-559931
12	Sisay Kibret	ETFRUIT	251-1-517005	251-1-516483
13	Getachew Alemu	Cooperative Commission	251-1-155474	
14	Berahene G/Hiwot	Ethiopian Press Agency	251-1-158093	
16	Girma Tilahun	Ethiopian Airlines	251-1-152732	
17	Kiberab Abebe	Teppo Plc	251-1-635621	251-1-663684
18	Wudu Yedemie	Shell Ethiopia Ltd	251-1-404040	
19	Tseday Jemaneh	Ministry of Foreign Affairs	251-1-536740	251-1-514300
20	Lacke T/ Mariam	Development Bank of Ethiopia	251-1-511188	
21	Abdiela Mohamed	ETV	251-1-527713	
22	Arest Asfaw	Ethiopian Pulp & Paper SC	251-02-200567	251-02-200163
23	Abdeta Atomsa	Ethiopia Investment Authority	251-1-510033	

Sr. No	Name of participants	Name of organization	Telephone	Fax
24	Moges Kassahun	Addis Ababa Urban Agriculture Office	251-1-519476	251-1-526288
25	Ahemed Mohamed	USAID	251-1-510088	251-1-510043
26	Solomon Sebahtu	Menagesha Floweer	251-1-512033	251-1-512014
27	Melaku Berihun	Sebeta Agro Industry	251-1-523127	251-1-519856
28	Tadesse Bellay	Awassa Green Wood Plc	251-1-528900	251-1-528808
29	Getahun Negusie	South Investment Office	251-06-201526	
30	Yared Kesela	Ethiopian Shipping Lines	251-1-156039	251-1-519525
31	Berhane Kebede	Ethiopia Civil Aviation	251-1-631967	251-1-613325
32	Abdo Teslwta	ETV	251-1-526611	
33	Zenebe Woldu	IBCR	251-1-634954	251-1-613722
34	Mulugeta Getachew	Genesis Farm	251-1-252700	251-1-333766
35	Solomon Bellete	Agr. Economic Soc. of Ethiopia	251-1-533763	
36	Kebede Kassa	National Bank of Ethiopia	251-1-511425	
37	Tesfay W/ Aregay	Bureau of Agr. & Nat. Res. (Tigrai Regiion)	251-03-407146	
38	Ambecha Olika	Jimma University	251-07-110102	
39	Yohanes Agonafir	VOCA - Ethiopia	251-1-534650	

Sr. No	Name of participants	Name of organization	Telephone	Fax
41	Erkyehun Tamene	Quality & Standard Authority	251-1-460111	
42	Shewwalem Zerfu	Ethio Flora PLC	251-1-660982	
43	Tsedeke Abate	Ass. For Advanced IPM	251-02-128098	
44	Seifu G/ Mariam	EARO	251-02-112186	
45	Edossa Etissa	EARO	251-02-112186	
46	Getachew Zelealem	Kaleb Service Plc	251-09-406295	251-1-343674
47	Lemelem Amare	EEPA	251-1-502844	
48	Abera Ameya	EEPA	251-1-502844	
49	Sisay Habte	EEPA	251-1-502844	
50	Hailu Teka	VOCA- Ethiopia	251-1-534650	251-1-515728
51	Masresha Yiemer	EEPA	251-1-502844	
52	Desalegn Yigzaw	EEPA	251-1-502844	
53	Gizaw Molla	EEPA	251-1-502844	
54	Getachew G/ Medhin	CFC	31-20-5754949	31-20-6760231
55	Teshager Asfaw	Embassy of the Netherlands	251-1-711100	251-1711577
56	Ms Catherine Vincent D'Almeida	French Embassy	251-1-517745	
57	Peter Greenhalgh	NRI	44-(0)-1634-883596	44-(0)-1634-883706

ANNEX 4. WORKSHOP ON SUDANESE FRUIT AND VEGETABLE EXPORT DEVELOPMENT, MAIN HALL, MINISTRY OF AGRICULTURE AND FORESTRY, KHARTOUM, 28TH OCTOBER 2003

Organised by

Department of Horticulture, Ministry of Agriculture and Forestry

Natural Resources Institute, UK

UN Common Fund for Commodities

Introduction

The aim of the workshop was to present and discuss the interim findings from interviews and data collection in Sudan with respect the CFC commissioned **Assessment of Needs and Feasibility of Commercial Production of Tropical Fruits and Vegetables for Diversified Exports in Ethiopia and Sudan.** The specific objectives were to:

- Identify major constraints and opportunities for commercial, export-oriented development of fruit and vegetables, and
- Identify strategies, priority areas for improvements and support measures required for the CFC and other sources to stimulate an expansion of fruit and vegetable exports.

There were approximately forty participants, largely civil servants from the Ministry of Agriculture including advisors to the Minister, but also a small number of exporters, an irrigation scheme manager and a representative of the Chamber of Commerce.

Presentation

Dr. Omar Abdul Wahab, Director of the Department of Horticulture, welcomed the participants, and Professor Sadig Omara, Minister of Agriculture and Forests, made an opening address. Professor Omara noted that the horticulture sector had long been neglected but a meeting with the Common Fund for Commodities (CFC) in 1999 had led to the development of proposals to revive the sector, especially in terms of exports. Mr Getachew Gebre-Medhin, Principal Project Manager for the CFC gave further background to the 1999 meeting in Cairo, which identified the need to diversify exports from African countries to high value exports, such as tropical fruit. He noted

that it was important for CFC projects not to create over-supply which was the reason why the proposed project to be discussed during the workshop and which was the subject of the current project was focused on both Sudan and Ethiopia. It is important that activities proposed for each country are complementary.

Dr John Orchard introduced the aims of the project and purpose of the workshop. Dr Anne Tallontire discussed the market context highlighting the importance of standards and contrasting the situation in the two target markets for Sudanese exports, Europe and the Middle East. A summary of the presentation is given below.

Presentation 1. The International Market Place: What is expected of Sudanese horticultural exports?

1. *Outline*

- Background to trade in horticultural markets
- Key features of target markets, especially structures & standards
- Importance of standards
- Implications for exporters
- Recent export experience

2. *Role of Standards*

Formal standards are used

- to manage complex supply chains and create transparency
- to convey valuable information
- to facilitate trade - to determine price and define contract terms
- Standards may be more significant than tariffs

3. *Changes in Global Horticultural Trade*

- From trade with numerous small exporters buying produce from many different smallholders to a trade dominated by large firms growing produce on large-scale farms (often with overseas ownership).
- Most of the production is from large commercial farms and shipped, by air and increasingly by sea, to European and North American markets.
- However, there are significant numbers of smallholders producing fruit and vegetables for export.

4. *Changing Standards (1)*

- Regulatory standards defining produce characteristics have a role as means to guide producers and to make the market more transparent
- But they are minimum entry requirements for many markets
- New process standards
- Food safety (e.g. EU and CODEX)
- Good agricultural practice

5. *Changing Standards (2)*

- Increasing focus on process standards
- Performance standards focus on the product to define the characteristics the commodity will possess at certain points in the supply chain.
- Process standards that govern the necessary activities in the supply chain to achieve a desired outcome in relation to the quality and safety of the commodity and guarantee attainment of performance.

6 *Changing Standards (3)*

- Wider range of bodies setting standards
- Public sector, e.g. national governments, intergovernmental/international bodies
- Private sector, e.g. retailers
- Non-governmental organisations, e.g. organic standards

7. *Markets of Sudanese Horticulture*

- Target markets
- Middle East, specifically Saudi Arabia and Gulf States
- Europe, including Netherlands, Germany, UK

8. *Significant differences*

- Size of market
- Structure of market
- Regulatory framework (Phytosanitary, Pesticide Residues)
- Food safety
- Consumer preferences for size, flavour etc of produce
- Changing role of standards

9. *Trade regimes*

EU

- Zero tariffs to least developed countries for fruit & vegetables Middle East
- UAE: Few if any quantitative restrictions on imports and low/non-existent tariffs
- Saudi Arabia: Duty –free access to Arab League members (12% duty to non-Arab countries)

10. Size & Structure

EU market

- Large but mostly stable markets
- Small growth for tropical fruits
- Large share for supermarkets
- Wholesale markets
- Fewer but larger importers
- Trend for pre-packaging and prepared produce
- Demand for organic
- Price is not always the major factor
- Long term relationships
- Competitive global sourcing

11. *Size & Structure –*

ME market

- Smaller than EU but growing
- More fruit than vegetables imported
- Supermarket share is small but growing
- Wholesale markets dominate the trade
- Large number of importers in UEA
- 3 big importers dominate the Saudi trade
- Small market for organic, frozen or pre-packed produce
- Intense price-driven competition.

- Much produce sold on commission/consignment basis (low prices and price volatility)

12. Food Safety Regimes

Europe

- Specialised Food Safety agencies
- Trend towards demonstration of 'due diligence' by retailer
- EU requirement for traceability – farm to table system of oversight, enforced from 1st January 2005
- Middle East
- UEA- general food safety and hygiene regulations; regulations that will bring them in line with EU in preparation
- Saudi Arabia – some rules already in place and SASO actively formulating further standards; more strongly enforced than in UEA

13. Pesticides

EU

- Consumer concern
- EU harmonisation of national regulations, resulting in changes in:
- the process of pesticide assessment and registration, and
- in the setting of EU acceptable maximum residue levels in food and in programs to monitor such residues.
- Increasing surveillance.
- Middle East
- Less consumer concern
- UEA: use CODEX standards
- Saudi Arabia: Developing its own MRLs, standards published for 19 pesticides so far

14. Quality standards

EU

- Supermarkets: product conformity to standards required
- Wholesale: quality standards preferred, but more relaxed
- Detailed standards for products grown in EU, e.g. melon, citrus
- Middle East
- Less important formal role; importer usually determines

15. Implications for Exporters

- Need to be aware of quality, pesticide residue, food safety standards as well as varieties sought by the markets
- Need to keep up to date with changing requirements
- Understand the implications of process standards
- Development of systems for traceability i.e. identification of farm or even plot where produce was grown, especially for EU markets
- Need to take measures to ensure that market requirements are met all along the supply chain

16. Business Practices

- Importers expect to deal with private sector players
- They want to see proof of oversight of the supply chain
- Private sector operators play a key role in successful industries e.g. Kenya, Zimbabwe, Zambia

17. Brief look at data on Sudanese exports-

What story do the statistics tell us?

18. Current status of horticultural exports

- Very low exports (now less than in 2001)
- Implies opportunistic one-off attempts
- Export links not sustained
- Indicative of problems throughout the chain
- Not an export horticulture industry

19. Problems reported

- Competition (lower costs, incl. freight), e.g. in EU market
- Melon - Brazil (37%), Costa Rica (30%)
- Mango & Guava - Brazil (36 %), Ivory Coast (11%).
- Produce not met quality standards (over-ripe, diseased on arrival)
- Weak links with importers and trade not sustained

20. Air Freight

- Hubs for Africa:
- Dakar, Johannesburg, Nairobi
- Lagos, Abdijan, Addis Ababa
- Freight Rates (per kg)
- To Europe
- Khartoum $0.80 - $1.00
- Uganda $1.65
- Ghana $1.70
- To Middle East
- Uganda $0.70
- Khartoum $0.30

21. Current routes to export

- Producer-exporter contract (private companies, individuals or public Export Company)
- Groups or individual farmers export
- Exporters assemble from the wholesale market

Dr John Orchard presented a diagnosis of the some of the main challenges facing export horticulture but also highlighting the advantages of the Sudanese industry. He concluded by considering how to promote an environment that will enable the promotion of horticultural exports. The outline of the presentation is given below.

Presentation 2. Sudanese Fruit and Vegetable Export Development

1. Contents
Comparative Advantages

Constraints

Promoting an enabling environment

2. Comparative Advantages
Range of micro-climates with reasonably conducive temperature:
wide range of fruit and vegetable crops
long growing season (wider window of opportunity)
potential for organic production

3. Comparative Advantages
Abundant fertile land in reasonable proximity to international airport facilities.
Reasonable road system from major irrigation schemes to Khartoum.
Close proximity to European markets and the Middle East, particularly in comparison with Latin American, Asian and Southern African competitors.

4. Comparative Advantages
Access to cheap and abundant water and irrigation infrastructure

Available labour

Low production costs (?)

5. Comparative Advantages
Government-funded irrigation schemes:
- capital investment in irrigation and other farm infrastructure;
- agronomic management;
- control and register land use;
- supply and control all inputs
- keep records.

Essential for EU traceability regulations (down to plot level for some supermarkets)

6. Comparative Advantages
- Extensive range of institutions and skills in the public sector:
- Ministry of Agriculture and Forestry;
- National Institute for the Promotion of Horticultural Exports;
- Horticultural Products Export Company;
- Food Research Centre;

- Universities.

7. Constraints - agronomic

High temperature: -

- Irregular flowering e.g. optimum flowering for mango 8 – 15 oC at night;
- Sun scorch;
- Increase rate of ripening leading to relatively short shelf-life and therefore problems with long distance transport by sea to Europe.

8. Constraints - agronomic

Low productivity: -e.g. melon yields of 5 tons/fe compared to 30 tons elsewhere

- Some areas of low soil fertility;
- Disease and pest problems;
- High post-harvest losses (40 %).

9. Constraints - inputs

Seed quality and availability:

- Represent a significant cost of production – 70%;
- May not have been tested to suit Sudan environment;
- Variable quality – some seed companies export lower quality to distant markets;
- Local hybrid seed production to be developed more widely.
- Imported packaging materials:
- High cost

10. Constraints - infrastructure

Inadequate Cold chain

- Issue: preservation of quality requires an unbroken chain from the field to the consumer:
- No pre-cooling facilities to remove field heat;
- No cold stores at the centres of production to undertake preliminary sorting for export quality;
- Inadequate cold store facilities to hold produce in Khartoum prior to export (2 facilities – poor condition would not meet new Food Safety regulations);
- No cold stores at the airport – produce left directly in the sun.

11. Constraints - private sector

- Weak entrepreneurial skills.
- Lack of export market linkages and representative in market.
- Inadequate market knowledge.
- Lack of key focus point for export promotion
- Lack of nodal organisation to manage the WHOLE export supply chain from field to point of exit in an integrated and vertical system.

12. Constraints - chain management

- Production planning to deliver a steady, consistent stream of produce over the required period.
- Ensure correct production practices: varieties, use of fertilizer and pesticides, quality of irrigation water.
- Organize harvesting at the correct maturity to ensure quality maintained during shipment and at retail (5 – 7 days);

13. *Constraints - chain management*

- Manage the cool chain: establish cold store facilities from farm to export point to maintain an optimum cold temperature for the product;
- Grade produce to meet the market requirements;
- Package in containers that meet the customer and regulatory requirements;
- Arrange transport and all accompanying documents.

14. *Constraints - services*

- Pesticide residue monitoring systems not present:
- All fresh and processed produce entering the EU must abide by the EC Regulation on maximum pesticide residue levels.

15. *Constraints - freight*

- Freight handling practices and facilities
- inadequate at airport.
- Infrequent flights.
- Low carrying capacity.
- Inadequate infrastructure at Port Sudan - no refrigerated ships and containers.
- High freight costs (?)

16. *Key constraints*

- Effective market linkages.
- Market knowledge and strategic business management.
- Freight capacity (volume and frequency).
- Integrated supply chain management.

17. *NEEDS?*

- Promoting an enabling environment
- Increase awareness of recent changes in policy towards more liberal tax regimes.
- Make credit more affordable.
- Provide information about new market developments to traders - EU market bureau.
- Improved technology transfer.
- More targeted market awareness tours.
- Establishment of European trade support office.

18. *Export development in Zambia*

- Export scheme set up with EU funds and long-term international consultant;
- Creation of Association of Private Sector Exporters;
- Detailed diagnostic survey to identify constraints and opportunities - found lack of middle-level skills in supply chain management;
- Established a centralized training organization run by public and private sector;
- Created freight handling company to handle all exports and facilities - airport cold stores and offices.

19. *Export development in Zambia*

Introduction of Industry Code of Practice:

- good agricultural practice;
- food safety - particularly pesticide use and packhouse hygiene;
- worker welfare;

- environment protection.

- Enhanced auditing skills through training.

Workshop discussion

Comments on the presentations and the project were varied. Some comments provided background to efforts in Sudan to improve the horticulture sector. Others highlighted particular problems faced by exporters and those trying to support the sector.

The potential of horticultural exports from Sudan was highlighted as long ago as 1965 in a paper was written by Professor Abdallah a former Minister of Agriculture. The Middle East and Europe were identified, especially in terms of the potential to export during the European winter. Since the 1960s a number of studies on horticultural exports have been prepared including a market survey of the Middle East and Europe in the 1970s, a strategy in 1986 developed with local and foreign experts, a 1995 conference on horticulture and a twenty-five year strategy for the development of the sector (2003-2027) developed recently by the Ministry of Agriculture. These efforts should be recognised, but equally the fact that exports from the sector have not been successful.

Particular issues raised by participants at the Workshop included:

- Lack of organisation in production, which is largely small-scale; challenge identified in scaling-up production and organising small-scale producers.
- Producers could be organised into farmer associations.
- There is a challenge in assembling the volumes required for export, especially of the right quality and at the right time.
- Further reform of the irrigation schemes, de-centralising management and enabling farmers to select their own crops.
- Sudanese research institutions with a particular focus on horticulture and food, of which there are many, have undertaken a lot of research to identify suitable seeds and cropping techniques for export horticulture. However, there has been a problem with transferring technology to farmers. Agricultural technologies, such as seed varieties, have been developed but have not been applied on a large enough scale due to weak links between research and extension.
- Farmers have also had difficulties in accessing appropriate inputs, from seed varieties demanded in export markets, to fertilisers, pesticides and tools.
- Extension services are weak. There is a need to link up public sector provision with the private sector provision of extension services.
- Extent of post-harvest losses, up to 50%.
- There is no co-ordination of the export supply chain; a lack of inter-locking mechanisms between producer and trader and no facilitating services.
- The production areas most suitable for fruit and vegetable production, with potential for organic production, are not close to the airport; land in Khartoum State is more likely to require chemical inputs.
- Agricultural credit has been difficult to access, especially for long-term investment in facilities as opposed to short term trading credit.

- Only a limited number of international airlines operate from Khartoum, only one international airline going direct to Europe, which means that they have a virtual monopoly.
- There is a shortage of market information, especially in relation to food safety regimes of WTO and COMESA.
- Links with importers are under-developed.
- It may be better to concentrate on produce that does not require so much capital investment, especially produce that does not need cold storage, i.e. onions rather than melons.
- Similarly a more appropriate target market may be the Middle East that can be accessed by sea, rather than the more expensive option of airfreighting to Europe.
- The meeting closed with comments from the Minister of State for Agriculture and Forests. He noted that public sector investment in the agriculture sector in general had been very meagre in Sudan. Secondly, he noted that the successful horticulture industries in Kenya and Zimbabwe had benefited from investments by western businesses. There was a need therefore to attract investment from abroad, especially investors from Belgium or Holland who already have links with the market. In the absence of such an 'instant solution', it is necessary to have personnel in the target markets to act as a 'trouble shooter' to deal with problems and queries as they arise in the destination markets.
- He concluded that the horticultural potential was there but Sudan needs help. Areas for assistance identified by the Minister included infrastructure (research facilities, cold stores, and seed production) and promotion of investment by Arab or European businesses. Finally he expressed the hope that the conclusion of the Peace Agreement would contribute to building up the required infrastructure for a successful horticulture industry.

Table 2.1: Ethiopia: Horticulture Production

Crop	Measure	Unit	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Horticulture	Area Hvstd	*('000 ha)*	184	183	185	186	186	188	188	186	186	186
Fruit	Yield	*(tonnes/ha)*	127.2	125.5	125.3	125.2	125.2	124.5	124.5	121.8	121.8	121.8
Veg	Yield	*(tonnes/ha)*	34.9	34.7	34.9	35.1	35.1	35.2	35.4	34.3	34.3	34.3
Horticulture	Production	*('000 tonnes)*	8,091	7,995	8,080	8,182	8,175	8,265	8,295	7,950	7,950	7,950

Source: FAO

Table 2.2: Ethiopia: Production of Fruits and Vegetables (tonnes)

	Vegetables & Melons	Bananas	Citrus Fruit	Grapes	Total
1991	594,000	79,000	28,000	4,000	705,000
1992	598,500	80,000	28,700	4,200	711,400
1993	604,500	80,000	28,700	4,200	717,400
1994	607,000	80,000	27,500	4,000	718,500
1995	610,500	80,000	27,500	4,000	722,000
1996	617,700	80,000	27,500	4,000	729,200
1997	619,000	80,000	27,500	4,000	730,500
1998	627,500	81,000	28,000	4,000	740,500
1999	627,500	81,000	28,000	4,000	740,500
2000	602,500	78,000	24,500	3,000	708,000
2001	602,500	78,000	24,500	3,000	708,000
2002	602,500	78,000	24,500	3,000	708,000
Wgt Ave	609,475	79,583	27,075	3,783	719,917

Source: FAO

Table 2.3: Ethiopia: Yields of Fruits and Vegetables (tonnes)

Crop	Yield per hectare						
	1995	1996	1997	1998	1999	2000	2001
Potatoes	8	8	8	8	7	7	7
Sweet Potatoes	8	8	8	8	8	8	8
Cabbages	14	14	14	15	14	14	14
Tomatoes	12	12	12	12	12	12	12
Onions+Shallots, Green	10	10	10	10	10	9	9
Onions, Dry	10	10	10	10	10	10	10
Bananas	16	16	16	16	16	16	16
Oranges	7	7	7	7	7	6	6
Lemons and Limes	7	7	7	7	6	6	5
Grapes	4	4	4	4	4	4	4
Roots and Tubers, Total	7	7	7	7	7	7	7
Vegetables & Melons, Total	3	3	3	3	3	3	3
Fruit excl Melons, Total	13	13	12	12	12	12	12
Citrus Fruit, Total	6	6	6	6	6	6	5

Source: FAO

Table 2.4: Ethiopia: Consumption of Fruits and Vegetables (2000)

Crops	Rural consumption			Urban consumption			Total
	kg/ head	Pop (million)	Quantity (tonne)	kg/ head	Pop (mill)	Quantity (tonne)	(tonne)
Vegetables	48	53.4	2,563,200	37	6.6	244,200	2,807,400
Fruit	1.3	53.4	69,420	8.4	6.6	55,440	124,860
Total	49	106.8	2,632,620	45	13.2	299,640	2,932,260

Source: Agonfir, Yohannes (2003) *Ethiopian Diagnostic Trade Integration Study: Horticulture sub sector* Prepared for the World Bank/EU. Calculations based on Tahal and Shawel Consulting Engineers, 1988

Table 2.5: Ethiopia: Horticulture Export Volume and Values 1994-2001

	Fruits and Vegetables		Flowers		Tot. horticulture export		Total national agriculture export		% share of horticulture	
	Qty	Val	Qty	Val	Qty	Val	Qty	Val	Qty	Val
1994	19,330	12,081	266	3,692	19,596	15,773	389,379	2,062,364	5.0	0.8
1995	15,688	7,528	189	2,537	15,877	10,065	276,106	2,602,211	5.8	0.4
1996	20,781	26,420	97	1,366	20,878	27,786	346,014	2,650,907	6.0	1.0
1997	23,328	51,303	40	1,024	23,368	52,327	373,723	3,938,408	6.3	1.3
1998	17,713	31,905	98	1,706	17,811	33,611	241,484	3,965,988	7.4	0.8
1999	13,348	25,679	136	897	13,484	26,576	243,031	349,644	5.5	7.6
2000	12,049	26,169	189	3,132	12,239	29,301	323,432	3,958,960	3.8	0.7
2001	27,753	71,534	6	1,308	27,759	72,842	335,074	3,658,983	8.3	2.0
Total	149,991	252,618	1,022	15,663	151,013	268,281	2,528,243	23,187,464	6.0	1.2

Source: EEPA

Quantity in tons, Value in '000 Birr

Table 2.6: Ethiopia: Export Statistics by Product Type 2000 -2002

Product	2000		2001		2002	
	Qty	Value	Qty	Value	Qty	Value
Potato (Irish)	3,247	778,430	6,170	1,665,933	5,737	1,292,982
Tomato	1,457	423,985	2,870	849,454	3,121	890,748
Onion /Shallot	2,234	4,097,070	3,428	794,333	4,453	1,005,723
Garlic	221	67,294	330	107,468	126	42,738
Leek/Alliaceous	1	73	990	152,337	1,148	176,015
Cabbages	1	86	938	163,851	822	141,772
Carrot	0.1	15	404	73,137	415	66,926
Beetroot, radish	0.3	37	741	118,420	803	125,316
Cucumber	242	34,315	399	46,825	582	73,187
Beans fr/ch[1]	-	-	689	292,186	1,764	721,985
Beans frozen [2]	3,067	1,144,287	1,156	1,550,381	2,752	2,598,614
Legumes [3]	-	-	3,180	1,004,666	3,940	1,244,171
Asparagus	3	3,934	-	-	-	-
Other veg.	2,013	329,886	1,189	217,568	1,253	213,381
Sub total	12,486	3,279,412	22,482.10	7,036,559	26,916	8,593,558
Banana	498	101,137	971	191,400	1,002	200,006
Mango& guava	438	102,760	868	220,125	838	685,218
Orange	1,214	411,913	2,185	757,303	1,967	687,425
Mandarin	73	18,634	248	63,125	224	874,007
Lemon & lime	283	421,949	514	105,754	456	78,793
Papaya	103	20,864	131	25,719	186	37,059
Melons	-	-	155	31,983	99	17,883
Citrus fruit	-	-	-	-	-	-
fruits, nuts proc	-	-	94	16,213	95	15,863
Fruits dried	-	-	-	-	66	42,767
Other fruits	23	6,408	105	37,416	94	46,624
Sub total	2,631	1,083,665	5,271	1,449,038	5,026	2,685,645
Grand total	15,117	4,363,077	27,753	8,485,598	31,942	11,279,203

Quantity in tonnes and value in US Dollars
Source: Prepared based on data from Ethiopian Customs Authority

1 - Indicates "beans, shelled or unshelled, fresh or chilled" classified under HS Code 07082000.
2- Indicates "beans, frozen, uncooked steamed or boiled" classified under HS Code 07102200.
3- Includes "legumes except peas and beans, fresh or chilled" classified under HS Code 07089000; "legumes, except peas & beans, frozen" classified under HS code 07102900 & and leguminous vegetables dried, shelled classified under HS Code 07139000

Table 2.7: Ethiopia: Fruit and Vegetable Exports by Importing Country (2002)

Country	Fruit		Vegetable		Fruit and Vegetable	
	Volume	Value	Volume	Value	Volume	Value
Djibouti	4,860	2,608,969	18,631	4,105,445	23,491	6,714,414
Netherlands	-	-	513	1,014,694	513	1,014,694
Sudan	47	24,056	1,617	719,688	1,664	743,744
Italy	6	1,370	576	539,241	582	540,611
Germany	6	4,307	307	426,906	313	431,213
Yemen	68	43,360	1,159	374,093	1,227	417,453
India	-	-	731	231,844	730	231,844
Morocco	-	-	497	161,761	497	161,761
Switzerland	1	160	466	107,067	467	107,227
French Guiana	-	-	66	98,807	66	98,807
Nigeria	-	-	67	90,866	67	90,866
Algeria	-	-	200	66,155	200	66,155
Canada	1	276	206	65,403	207	65,679
Saudi Arabia	17	6,282	192	58,608	209	64,890
South Africa	-	-	210	64,168	210	64,168
Pakistan	3	627	238	63,191	240	63,168
Russia	5	7,910	150	54,491	155	62,392
France	2	1,387	180	60,827	182	62,214
Albania	-	-	120	38,614	120	38,614
United States	1	908	114	37,412	115	38,320
Colombia	-	-	105	36,341	105	36,341
Japan	37	9,582	118	26,276	155	35,858
Panama	-	-	100	31,551	100	31,551
Monaco	-	-	99	29,553	99	29,553
Czech Republic	-	-	63	22,476	63	22,476
Israel	2	443	50	12,889	52	13,332
Hungary	-	-	42	12,892	42	12,892
Turkey	6	1,516	15	3,364	21	4,880
Greece	3	895	18	3,977	21	4,872
Belgium	4	1,317	6	1,401	10	2,710
Spain	2	681	5	1.076	7	1,757
Denmark	2	428	5	1,150	7	1,578
Australia	1	229	3	811	4	1,040
Thailand	0.02	855	-	-	0.02	855
United Kingdom	-	-	0.1	331	0.1	331
Swaziland	0.1	293	-	-	0.1	293
Grand Total	**5,073**	**2,715,842**	**26,869**	**8,563,369**	**31,942**	**11,279,211**

Quantity in tonnes and value in US Dollars

Source: Processed based on data obtained from Ethiopian Customs Authority

ANNEX 6. FRUIT AND VEGETABLE PRODUCTION DATA FOR SUDAN

Table 3.1. Sudan: Cultivated area (feddan) of fruits in 2002

State	Mango	Banana	Date	Lime	Grapefruit	Orange	Guava	Others
North Sate	4916	40	54916	1942	2129	3706	100	-
River Nile State	900	-	20000	-	2620	3000	-	-
Gezira State	2700	-	-	5043	2806	1377	2105	-
Sennar	7000	30000	-	3500	1000	500	3000	-
Blue Nile State	4100	3400	-	550	450	350	93	-
S- Kordofan	23500	-	-	2000	-	-	1300	-
N- Darfur	-	-	4000	-	-	-	-	-
W- Darfur	15000	1000	-	4500	6000	5400	2000	3500
S- Darfur	2000	100	-	1500	1000	3000	2000	200
Gadarif	3000	1000	-	650	700	550	1100	-
Kassala	1000	2500	-	7--	2000	500	-	-
Red Sea	40	-	700	60	40	40	400	-
White Nile	400	150	-	450	100	70	270	-
Khartoum	870	3150	-	5330	155	1068	2049	-
Total	**65426**	**41340**	**79616**	**26225**	**190000**	**19561**	**14417**	**3700**

Source: Department of Horticulture, Ministry of Agriculture and Forests

Table 3.2: Sudan: Fruit production (tonnes) in 2002

State	Mango	Banana	Date	Lime	Grapefruit	Orange	Guava	Others*
North Sate	30000	240	219784	8000	15300	22236	350	-
River Nile State	9000	-	90000	-	15720	18000	-	-
Gezira State	24300	-	-	3530	19642	6885	147454	-
Sennar	42000	36000	-	17500	6000	2000	31200	-
Blue Nile State	36900	40800	-	3850	2760	1400	372	-
South Kordofan	211500	-	-	8000	-	-	5200	-
N- Darfur	-	-	16000	-	-	-	-	-
W- Darfur	18000	7000	-	22500	42000	43200	20000	17500
S- Darfur	20000	1500	-	18000	10000	23000	20000	1600
Gadarif	21000	12000	-	4550	4200	3300	4400	-
Kassala	16000	30000	-	4200	12000	2500	-	-
Red Sea	200	-	2450	420	160	120	1600	-
White Nile	3600	1800	-	3150	600	350	1890	-
Khartoum	7830	37800	-	34112	682	4052	12294	-
Total	**602330**	**491140**	**328234**	**159583**	**129004**	**127047**	**112055**	**19100**

* Includes papaya, mandarin

Source: Department of Horticulture, Ministry of Agriculture and Forests

Table 3.3: Sudan: Cultivated area (feddan) of vegetable in 2002

State	Onion	Tomato	Okra	Egg plant	Potato	Cucumber	Spices	Leafy Veg.	Sweet Pot.	Others*
North Sate	2523	795	-	-	225	-	13290	3346	-	-
River Nile State	30000	3526	3100	-	5000	6626	17000	-	-	-
Gezira State	20849	17178	5132	4419	-	10264	2495	3350	2851	4277
Sennar	6500	5000	2000	750	200	4050	1150	550	1000	310
Blue Nile State	-	1820	2640	600	-	7200	-	-	-	-
North Kordofan	3770	4310	1152	-	-	2200	-	-	-	-
S- Kordofan	-	1200	10000	-	-	2500	1200	1600	-	-
N- Darfur	15100	7475	6000	-	7000	5366	1000	-	-	-
W- Darfur	13500	11600	3500	15000	4800	29000	-	10000	-	-
S- Darfur	4000	10000	6000	8000	15000	3000	-	1000	-	-
Gadanif	950	3775	2717	-	-	3000	419	-	-	-
Kassala	4000	5000	300	-	-	13500	1800	-	4000	-
Red Sea	-	400	300	200	-	1000	100	400	300	-
White Nile	2500	2000	2500	200	-	4350	450	550	50	-
Khartoum	13744	3994	12673	665	8728	9416	1908	1629	709	69112
Total	117436	78073	58014	6834	44153	89272	72812	11425	19910	11499

- cauliflower, lettuce, cabbage, peas, green beans, peas, carrots.

Source: Department of Horticulture, Ministry of Agriculture and Forests

Table 3.4: Sudan: Vegetable production (tonnes) in 2002

State	Onion	Tomato	Okra	Egg plant	Potato	Cucumber	Spices	Leafy Veg.	Sweet Pot.	Others
North Sate	25230	3975	-	-	1358	-	14000	15057	-	-
River Nile State	240000	25682	15500	-	50000	53008	21000	-	-	-
Gezira State	1666792	120264	25660	32352	-	82112	7485	18425	12830	21385
Sennar	65000	20000	10000	3750	1400	30700	646	3750	10000	620
Blue Nile State	-	12740	13200	4800	-	57600	-	-	-	-
North Kordofan	22620	21550	5760	-	-	2200	-	-	-	-
S- Kordofan	-	4800	40000	-	-	17500	1200	9600	-	-
N- Darfur	90600	37375	30000	-	28000	42828	1500	-	-	-
W- Darfur	148500	6900	14000	-	105000	2880	59600	-	70000	-
S- Darfur	40000	70000	36000	-	56000	75000	8000	-	15000	-
Gadarif	5700	26425	10868	-	-	30000	210	-	-	-
Kassala	36000	35000	900	-	-	102000	9210	-	24000	-
Red Sea	-	2400	1200	1600	-	6800	100	1600	1200	-
White Nile	25000	12000	11258	1600	-	38858	515	2200	200	-
Khartoum	105829	24363	27029	3424	59350	199774	13356	3258	3261	27648
Total	971271	423474	241375	47826	301108	607080	136822	53890	136491	49653

Source: Department of Horticulture, Ministry of Agriculture and Forests

Table 3.5: Sudan: Selected exports by 2001

HS rev. 0	Product	Value 2001 in US$ thousand	Annual growth in value between 1997-2001, %	Annual growth in value between 2000-2001	Annual growth of world exports between 1997-2001, %	Ranking in country exports	Share in world exports, %	Ranking in world exports
02	Meat and edible meat offal	14,013	-20	-43	0	6	0.0	50
7	Edible vegetables and certain roots and tubers	184	-67	-22	1	30	0	141
8	Edible fruit, nuts, peel of citrus fruit, melons	3,562	-8	-31	-2	11	0	118
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	105,424	-5	-28	-2	2	0.5	21
13	Lac, gums, resins, vegetable saps and extracts nes	30,638	1	9	0	4	1.5	19
27	Mineral fuels, oils, distillation products, etc	1,407,537		19	13	1	0.2	54
41	Raw hides and skins (other than furskins) and leather	26,707	14	74	2	5	0.1	66
52	Cotton	33,996	-23	-13	-2	3	0.1	63

Source ITC

Table 3.6: Sudan: European Imports of Beans (70820) from 1993-97: value and volume in '000 (Source: Marketag)

Importing country	1993		1994		1995		1996		1997	
	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes
Belgium										
	0	0	0	0	2	1	2	2	22	15
France	0	0	0	0	0	0	5	n.a.	0	0
Germany	7	5	0	0	1	1	0	0	0	0
Netherlands	241	136	2	1	40	31	69	32	46	32
United Kingdom	5	2	0	0	3	2	0	0	13	12
Total beans	**253**	**143**	**2**	**1**	**46**	**35**	**76**	**34**	**81**	**59**

Table 3.7: Imports of Guava, Mangoes, Mangosteens (80850) from Sudan 1993-97: value and volume in '000 (Source: Marketag)

Importing country	1993		1994		1995		1996		1997	
	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes
France	0	0	0	0	4	6	0	0	0	0
Germany	0	0	0	0	1	2	2	2	0	0
United Kingdom	100	89	1	2	23	19	15	11	0	0
total guava, mango, mangosteens	**100**	**89**	**1**	**2**	**28**	**27**	**17**	**13**	**0**	**0**

Table 3.8: Imports of Melons (incl. watermelons) (80710) from Sudan 1993-97: value and volume in '000 (Source: Marketag)

Importing country	1993		1994		1995		1996		1997	
	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes	ECU	Tonnes
Belgium	16	13	24	22	20	16	33	32	105	80
France	0	0	0	0	2	2	2	4	0	0
Germany	5	4	7	4	2	2	3	4	8	7
United Kingdom	24	25	2	1	40	31	69	32	46	32
Netherlands	7	9	3	4	21	14	38	39	152	138
Total melon	52	51	36	31	85	65	145	111	311	257

Table 3.9: Quarterly exports, January to September 2002

	Jan to March 2002		April to June 2002		July to Sept 2002		Total	
	Tonnes	US $ 000	Tonnes	US $ 000	Tonnes	US $ 000	Tonnes	US $ 000
Edible vegetables	13	3	175	69	834	217	1022	289
Edible fruits	1477	476	2990	961	293	292	4730	1729
Total	1490	479	3165	1030	1127	509	5752	2018

Source: Bank of Sudan

Table 3.10: Quantity and value of fruits exported by Sudan in 2001

Product	Value 2001 US$ thousand	Quantity 2001 (tons)	Annual growth in value between 1997-2001, %	Annual growth in quantity between 1997-2001, %	Annual growth in value between 2000-2001, %	World market share, %	Ranking in world market	Annual growth in value of world imports between 1997-2001, %
Dates, figs, pineapples, mangoes, avocadoes, guavas	2,717	5,018	-6	6	-25	0	45	6
Citrus fruit, fresh or dried	314	557			-44	0	70	-2
Melons (including watermelons) & papayas, fresh	440	663	-11	-4	-45	0	56	1
Fruits not elsewhere specified	61	208			-50	0	96	0
Total	**3532**	**6,446**						

Source: ITC

Table 3.11: Imports of mango by Sudanese trading partners in 2001 (080450). Source: ITC

Importers	Exported value 2001 in US$ thousand	Share in Sudan's exports, %	Volume (tonnes)	Unit value (US$/unit)	Value trend 1997-2001, %, p.a.	Quantity trend 1997-2001, %, p.a.	Growth in value 2000-2001, %, p.a.
Saudi Arabia	1,877	70	3,928	478	-	-	-13
Lebanon	705	26	750	940	-6	7	-44
Qatar	74	3	282	262			
Jordan	27	1	32	844	-9	-1	0
Greece	11	0	7	1,571			-15
Total	**2,697**	**100**	**5,006**	**539**	**-6**	**6**	**-25**

Table 3.12: Imports of melons by Sudanese trading partners in 2001 (080719). Source: ITC.

Market	Value $thousand	% Sudan exports	Volume tonnes	Unit value (US$/unit)	Value trend 1997-2001, %, p.a.	Trend in quantity 1997-2001	Growth in value 2000-01
Saudi Arabia	170	43	379	449			21
Lebanon	88	22	53	1,660	87	53	418
Germany	52	13	64	813	20	30	117
Netherlands	39	10	36	1,083	-33	-29	-83
Belgium-Luxembourg	26	7	37	703	-14	9	-88
United Kingdom	17	4	15	1,133	-21	-23	-90
Total	**392**	**100**	**584**	**671**	**-13**	**-6**	**-51**

Table C3.13: Sudan: Export of vegetables in 2001

	Product	value 2001 in US$ thousand	Quantity 2001	Annual growth in value between 1997-2001, %	Annual growth in quantity between 1997-2001, %	Annual growth in value between 2000-2001, %	World market share, %	Ranking in world market	Annual growth in value of world imports between 1997-2001, %
703	Onions, garlic and leeks, fresh or chilled	15	120			650	0	111	-4
708	Leguminous vegetables, shelled or unshelled, fresh or chilled	92	119	12	67	-45	0	65	2
709	Vegetables nes, fresh or chilled	33	15				0	122	4
712	Dried vegetables	26	13				0	90	-3
713	Dried vegetables, shelled	12	51				0	124	-4
	Total	178	318						

Source ITC

ANNEX 7 INTERNATIONAL TRADE STATISTICS

Table 4.1 - Total Value of World Exports of Fruit and Vegetables 1992-2001 (mn US$)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fruit	10 673	10 446	11 542	12 989	13 793	13 953	13 364	13 269	13 628	13 826
Vegetables	3 867	4 545	5 226	6 105	5 988	6 303	6 932	6 625	7 050	7 563
World Total	14 541	14 991	16 768	19 094	19 781	20 256	20 295	19 894	20 678	21 389
of which:	8 183	8 418	9 098	10 736	11 238	11 453	11 827	11 728	12 028	12 684
Developing Countries	**56.2%**	**56.1%**	**54.2%**	**56.2%**	**56.8%**	**56.5%**	**58.2%**	**58.9%**	**58.1%**	**59.3%**
Developed Countries	6 358	6 573	7 670	8 358	8 543	8 803	8 468	8 166	8 650	8 705

Source: FAOSTAT

Table 4. 2: Total Volume of World Exports of Fruit and Vegetables Exports 1992-2001 ('000 metric tonnes)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fruit	23 774	25 074	27 073	27 837	29 278	30 752	30 261	30 645	32 337	33 104
Vegetables	7 557	8 836	10 028	10 671	11 223	11 627	12 860	13 254	13 089	13 942
World Total	31 332	33 911	37 101	38 508	40 500	42 379	43 121	43 899	45 426	47 046
Of which:	21 047	22 769	24 184	25 817	27 680	28 293	29 687	30 067	30 423	32 283
Developing Countries	**67.14%**	**67.1%**	**65.0%**	**72.7%**	**68.3%**	**66.7%**	**68.8%**	**68.4%**	**66.9%**	**68.6%**
Developed Countries	10 285	11 142	12 917	12 691	12 821	14 086	13 434	13 832	15 003	14 763

Source: FAOSTAT

Diagram 4.1

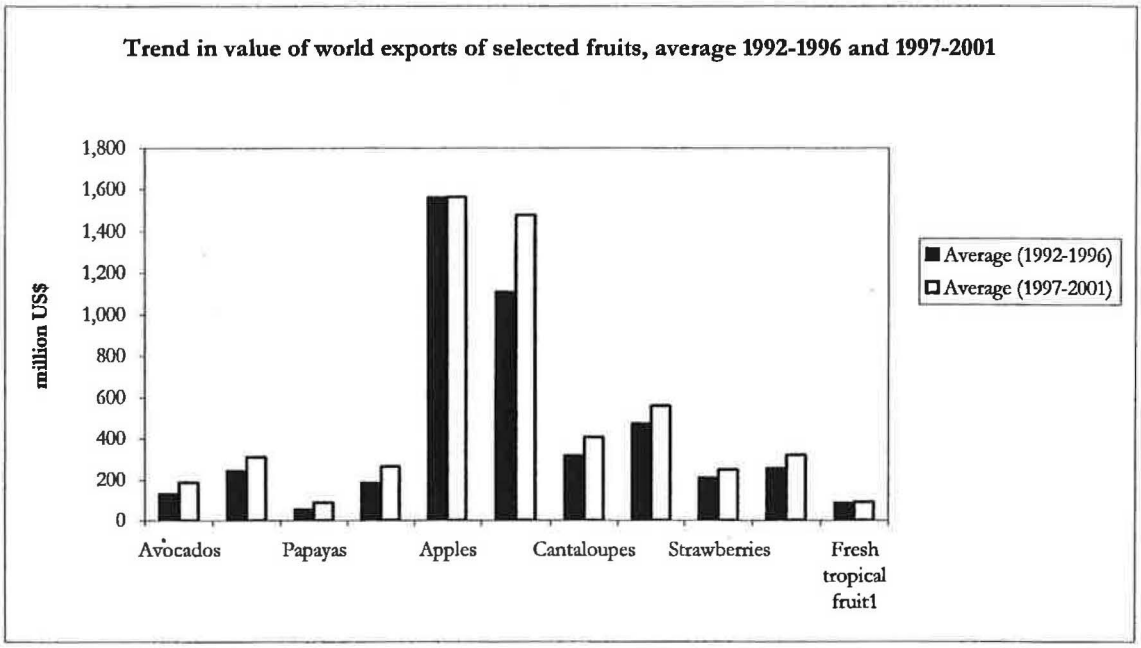

Diagram 4.2

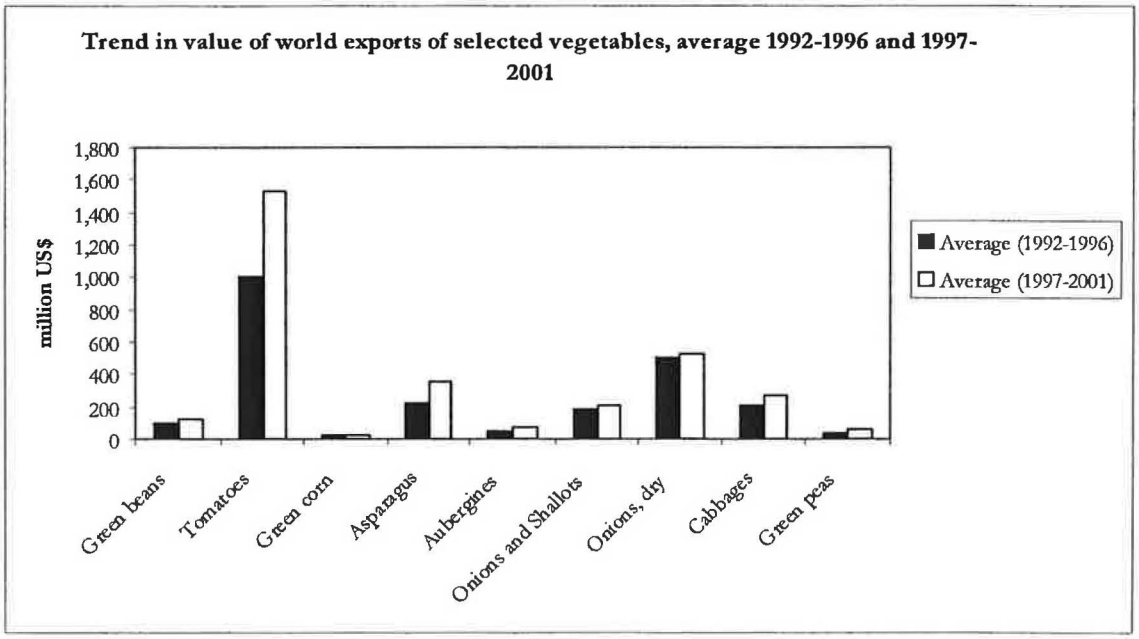

Table 4.3: World exports of selected processed and partially transformed fruit and vegetable products by value 1992-2001 (million US$)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fruit prepared[1]	2 206	2 121	2 436	2 662	2 799	2 809	2 859	2 818	2 838	2 863
Vegetables prepared[1]	1 072	1 182	1 391	1 502	1 514	1 481	1 636	1 676	1 651	1 649
Tomato Paste	539	561	595	739	749	797	816	781	701	724
Apple juice conc.	453	360	397	567	584	487	336	398	463	503
Pineapples canned	645	571	537	521	623	470	440	615	469	459
Apple juice	165	153	187	243	313	295	271	279	381	374
Mushrooms canned	369	318	400	481	378	291	271	310	370	359
Sweet Corn processed	163	176	198	217	262	288	285	268	272	269
Mushrooms dried	267	240	382	485	284	289	255	244	260	234
Fruit dried[1]	153	153	187	201	246	270	189	194	271	232
Tomatoes peeled	147	180	188	206	213	204	208	230	193	185
Pineapple juice	132	98	127	155	181	140	141	174	161	155
Tomato juice	13	14	27	52	46	50	48	24	24	20
Pineapple juice conc.	31	29	33	45	59	49	43	50	16	17
Mango Pulp	29	24	33	33	7	6	5	6	6	6
Tropical fruit dried[1]	6	8	8	6	8	29	3	12	7	6
Mango juice	6	6	5	7	10	10	7	9	5	3
Tomato juice conc.	0	0	0	0	0	0	0	1	1	1

Notes:
1. Not specified elsewhere.
Source: FAOSTAT.

Table 4.4 EU: Imports of lychee and passion fruit by country of origin (mt)

Country	1997	1998	1999	2000
LYCHEE				
Madagascar	7 677	10 380	12 439	18 677
South Africa	1 703	1 644	4 233	1 983
Thailand	455	279	1 067	1 051
Israel	186	303	695	547
Mauritius	75	116	92	49
Saint Lucia	221	52	16	11
Others	177	249	305	287
Total	**10 494**	**13 023**	**18 847**	**22 605**
PASSION FRUIT				
Malaysia	2 976	3 210	3 602	3 411
Zimbabwe	681	887	1 001	958
Kenya	559	375	604	663
Colombia	317	405	469	393
South Africa	78	161	162	153
Vietnam	105	110	106	125
Others	96	172	229	384
Total	**4 812**	**5 320**	**6 173**	**6 087**

Table 4.5: Indicators of Fruit and Vegetable Imports into Middle East Markets

Country	GDP (US$bn) 1999	Population (mn) 1999	GDP per capita	Fruit and Vegetable imports (000t)	Fruit and Vegetable imports (US$mn)
Saudi Arabia	129	21	Medium	1200	503
UAE		2.8	High	c. 1300	600
Kuwait	30	2	High		
Bahrain		0.7	Medium		
Oman		2.3	Medium		
Qatar		0.8	High		
Djibouti		0.6	Medium		
Yemen	7	17	Low		
EU-15	**8,501**	**375**	**High**	**26,059**	**20,300**

Note: Fruit and vegetable data for Middle East is for 1996.

Table 4.6: United Arab Emirates (UAE) – Trends in Fruit Imports 1997-2001

Product	Value 2001 in US$ 000	Qty (tonne) 2001	Growth in value between 1997-2001, %	Growth Qty between 1997-2001, %	Growth in value p.a.2000 -2001, %	World market share, %	Rank ing in world market	Growth in value of world exports between 1997-2001, %
Bananas and plantains, fresh or dried	26,555	129,739	10	31	39	0	30	-5
Dates, figs, pineapples, mangoes, avocadoes, guavas	18,301	54,945	6	30	-8	0	17	5
Citrus fruit, fresh or dried	20,113	82,621	-6	-4	5	0	33	-3
Grapes, fresh or dried	27,665	38,287	18	12	23	0	22	2
Melons (including watermelons) & papayas, fresh	12,739	79,011	22	-1	3	0	18	-1
Apples, pears and quinces, fresh	31,765	76,670	1	-4	-9	0	28	-3
Apricots, cherries, peaches, nectarines, plums & sloes, fresh	4,250	7,433	18	21	18	0	35	0
Dried fruit	2,594	3,939	2	11	-40	0	37	2
Citrus fruit and melon peel	388	181	47	-7	28	1	14	3

Source: ITC Comtrade Data

Table 4.7 United Arab Emirates: Trends in Vegetable Imports 1997-2001

Product	Value 2001 in US$ 000	Qty (ton) 2001	Annual growth in value between 1997-2001, %	Annual growth in quantity between 1997-2001, %	Annual growth in value between 2000-2001, %	World market share, %	Ranking in world market	Annual growth in value of world exports between 1997-2001, %
Potatoes	12,879	67,637	5	9	46	0	24	-1
Tomatoes	19,618	75,976	41	20	45	0	19	1
Onions, garlic and leeks, fresh or chilled	24,513	53,323	-5	-3	68	1	17	-1
Cabbages & cauliflowers, fresh or chilled	9,542	36,227	26	12	35	0	20	0
Lettuce and chicory, fresh or chilled	5,198	23,047	15	13	1	0	22	2
Carrots, turnips and salad beetroot, fresh or chilled	5,288	20,099	13	14	6	0	25	3
Cucumbers and gherkins, fresh or chilled	5,865	12,649	32	35	56	0	17	3
Leguminous vegetables, shelled or unshelled, fresh or chilled	1,328	2,554	55	68	8	0	28	4
Vegetables nes, fresh or chilled	14,321	28,962	19	10	20	0	26	4
Frozen vegetables	8,153	10,002	11	10	30	0	29	2
Dried vegetables	626	318	5	-13	44	0	67	-3
Dried vegetables, shelled	31,338	71,340	-9	-12	-10	1	26	-1
Manioc, arrowroot salem (yams) etc	710	1,114	23		-7	0	26	0

ANNEX 8 MATERIALS CONSULTED

Abdalla Ahmed Abdalla and Hassan Osman Abdel Nour (2001). The Agricultural Potential of Sudan. *Executive Intelligence Review* February 23, 2001, pp. 37-45. http://www.aboutsudan.com/conferences/khartoum/abdalla.htm

Agonfir, Yohannes (2003) *Ethiopian Diagnostic Trade Integration Study: Horticulture sub sector* Prepared for the World Bank/EU

Amhara Investment Office (2002) *Profile on Opportunities and Challenges of Horticulture Export in Amhara*, Bahir Dar (mimeo)

Anon. (2003). *Special report FAO/WFP crop and food supply assessment mission to Sudan.* 24 December 2002. http://www.reliefweb.int/library/documents/2002/fao-sud-24dec.html

Arab Communication Consult. (2001) *Sudan Investment Report 2001*, available from, http://www.arabcomconsult.com/sudan/ma in.htm accessed September 2003

Bank of Sudan. (2002). *Foreign Trade Statistical Digest* July to September 2002, Number 3, volume 39. Issued by the Statistics Department Bank of Sudan, Khartoum.

Barrett, H. et al (1997) *Prospects for horticultural exports under trade liberalisation in adjusting African economies*. Report for DFID. Coventry University.

Carloni, A. (2001). *Global Farming Systems Study: Challenges and Priorities to 2030. Regional Analysis: Sub-Saharan Africa*. Consultation Document, FAO, Rome, Italy.

Christian Aid (1996) *The global supermarket*. London. Christian Aid

Co-operative Business Today Volume 1, Issue 1 (2001) *Building Ethiopia's Future.*

Coulter, Jonathan, Millns, John and Tallontire, Anne (2000) *Increasing smallholders' involvement in high-value horticulture – lessons from Zimbabwe.* Small Enterprise Development 11 (3), pp36-46

Dearden P., Greenhalgh P.and Havis E. (2002) *Horticulture Exports from Ethiopia and EU Supermarket Sourcing* DFID

Dijkstra, T (1997) Commercial horticulture by African smallholders: A success story from the Highlands of Kenya. *Scandinavian Journal of Development Alternatives* 16(1), 49-74.

Dolan, Catherine, Humphrey, John and Carla Harris-Pascal, (1999), '*Horticulture Commodity Chains: The Impact of the UK Market on the African Fresh Vegetable Industry*', IDS Working Paper 96, Brighton: Institute of Development Studies.

Ethiopia Chamber of Commerce (1998) *Exporters Guide Ethiopia.* ACP-EU Trade Development Project, by Shawel Consult International

Ethiopian Export Promotion Agency (2002), *Export Development Strategy* (mimeo)

Ethiopian Export Promotion Agency (May 2003), *Project proposal for product and market development of vegetables, flowers, spices, civic musk, oilseeds and pulses*

Ethiopian Export Promotion Agency, *Potentials for Export Development in Ethiopia*
Ethiopian Investment Authority *The Gateway to Africa The Vast land of Opportunities*

Ethiopian Investment Authority (no date) *Investing in Ethiopia*

EUREPGAP Protocol for Fresh Fruit and Vegetables (2003)

Eurofruit Magazine – various issues

FAO (2001a) Committee on Commodity Problems 63rd Session: *New and Emerging Issues Affecting Commodity Markets* Rome

FAO (2001b) *World Markets for Organic Fruit and Vegetables; Opportunities for Developing Countries in the Production and Export of Organic Horticultural Products*. Rome

Fresh Produce Journal – various issues

Fresh Produce Journal (2000-2003) *Fresh Produce Desk Book*

Glover, D. and Kusterer, K., 1990. *Small Farmers, Big Business.* Contract Farming and Rural Development. Macmillan.

Herath E. & Dessalegne L. eds. (in co-operation with the Institute of Agricultural Research and FAO (1992) *Research and Development in Ethiopia* Proceedings of the Second National Horticultural Workshop of Ethiopia

Hoben A. (1996) *Land Tenure Policy in Ethiopia: Issues for Smallholder Sustainable Agricultural Growth* Report prepared for the World Bank, Addis Ababa.

Hoben A. (2001) *Ethiopian Land Tenure Policy Revisited* Paper given at the Symposium for Reviewing Ethiopia's Socio-economic Performance 1991-99. Addis Ababa.

Horticulture and Floriculture Export Industry with Special Emphasis to the Private Sector, SWOT Analysis mimeo

International Federation of Organic Agriculture Movements (2002) *IFOAM Conference on Organic Guarantee Systems (Reader)* in co-operation with FAO, UNCTAD.

International Monetary Fund. (2000). Staff Report for the 2000 Article IV Consultation and Fourth Review of the First Annual Program Under the Medium-

Term Staff-Monitored Program, IMF Staff Country Report No. 00/70 June 9, 2000, http://www.imf.org/external/pubs/ft/scr/2000/cr0070.pdf

International Monetary Fund. (2002). Sudan: Final Review Under the Medium-Term Staff-Monitored Program and the 2002 Program-Staff Report; and Staff Supplement, Country Report No. 02/245, http://www.imf.org/external/pubs/ft/scr/2002/cr02245.pdf

International Monetary Fund. (2003). The IMF and the Middle East and North Africa, available from http://www.imf.org/external/np/exr/ib/2003/081503.htm
International Trade Centre (1999) *Organic Food and Beverages: World Supply and Major European Markets* Geneva

International Trade Centre (weekly publication) Market News Service (MNS) Fresh Tropical and Off-Season Fruit & Vegetables. Geneva

ITC (2001) *Ethiopia's Export Strategy: Key Features and Major Influencing Factors*, ITC Executive Forum, Nairobi

Jaffee, S.M. (1994) *Contract Farming in the Shadow of competitive markets: The experience of Kenyan Horticulture, in* Living Under Contract. Contract Farming in Sub-Saharan Africa,
Little, P.D. and Watts, M J. (Eds). Madison, University of Wisconsin Press.

Jaffee, Steven, 1993, *'Exporting High-Value Food Commodities: Success Stories from Developing Countries'*, World Bank Discussion Paper #198, Washington, D.C.: World Bank.

Jaffee, Steven, 2003, From Challenge to Opportunity: The Transformation of the Fresh Vegetable Trade in the Context of Emerging Food Safety and Other Standards. World Bank PREM Trade Unit (draft)

Little, P D, and Dolan, C S (1998). What it means to be restructured: Non-traditional Commodities and Structural Adjustment in Sub-Saharan Africa, in Rethinking Commodities: Anthropological Views of the Global Market Place, Stone, P, Haugerud, A and Little, P D (eds.). Boulder, CO: Rowman and Littlefield.

Little, P.D. and Watts, M. J. (eds.) 1994. Contract Farming in Sub-Saharan Africa, Madison: University of Wisconsin Press.

Malins A., Blowfield M. & Dolan C. (1998) *Kenya Flower Council, Support to Enhancement of Social and Environmental Practices* (mimeo)

Marketag (no date) Marketag. http://www.marketag.com/ Designed by Fintrac Inc., under the auspices of the Asia Regional Agribusiness Project and through the sponsorship of the U.S. Agency for International Development and the U.S. Department of Agriculture.

Ministry of Agriculture Crop Protection and Protection Technology and Regulatory Department (1999) *List of Registered Pesticides in Ethiopia as of July 2, 1999.*

Netherlands Embassy (2003) *Newsletters 1,2 and 3 – Dutch Horticulture Trade Mission to Ethiopia* Addis Ababa

NRET (1999) Working Paper on Horticulture, NRI Chatham, UK

NRI (2003) Small Producers in Export Horticulture, A Guide to Best Practice, Chatham: Natural Resources Institute.

NRI and CREM (1998) *Comparison of the codes of practice for the horticulture sector*, Report compiled for COLEACP by NRI, UK and CREM, the Netherlands

NRI and IDS (1999) Enhancing the Development Impact of Export Horticulture in Sub-Sahara Africa. Report compiled for the DFID by NRI, UK and IDS, UK

Orchard, J. and Greenhalgh, P. (2003) Export Market Potential For Uganda's High Value Horticulture Crops: An Overview Of Strategies And Needs, Chatham: Natural Resources Institute.

Oromia Investment Office (2002) *Investment in Oromia* Addis Ababa

Overseas Development Administration and NRI (1996) *Renewable Natural resources Profile*
Ethiopia.

Parkin, Suzanne and Havis Ed., 2003 *DFID Export Horticulture Visit 3-8 June 2003, Back to Office Report*

Pedersen, P.O. (2001). Freight transport under globalisation and its impact on Africa. *The Journal of Transport Geography* 9, pp85-99

Pellakan, Jack van Holst. (2003) The Gezira Reform Program Overview of Recommendations of a Joint World Bank/Government Assessment, and the Way Forward. http://www.worldbank.org/waterweek/Irrigation/Africa.htm

Schapiro, M.O. and Wainaina, S. (1991) Kenya's export of horticultural commodities. *Public Administration and Development* Vol. 11 257-261

SHEC (no date) Sudanese Horticulture Export Company. Bustania, promotional leaflet.

Tadesse F. (1997) Local Consultant *Report on the Field Observation of Private horticultural Farm and Export Promotion Workshop.*

Taha, Jamal Dafalla. (2003). Role of farmers in encouraging and adopting Abd Elhakam Pilot and shaping future of GS.
http://www.worldbank.org/waterweek/Irrigation/Africa.htm

The Henry Doubleday Research Association (1998) Organic agriculture in sub-Saharan Africa: *Farmer demand and potential for development* Harris, PJC, Lloyd, HD, Hofny-Collins, Ah, Barrett AR, Browne, AW Report compiled for DFID

Trade Development Institute of Ireland LTD (1995) *Horticultural & Cut Flower Export Sub-Project.*

UNCTAD/COLEACP (1997) *The logistics of fresh horticultural exports from Ethiopia* Report of a study mission carried out jointly by UNCTAD and COLEACP June 5-12 1997 Geneva.

UNCTAD/SGS Societe Generale de Surveillance S.A (1998) *International Market Access Information: Horticulture Sector* New York and Geneva.

United National Conference On trade and Development (2002), *An investment Guide to Ethiopia Opportunities and Conditions April 2002.*

Vinning, Grant and Moody Tony (1997) *A Market Compendium of Tropical Fruit* Prepared for Rural Industries Research and Development Corporation, Canberra

Weatherspoon, D and Reardon, T (2003) The rise of supermarkets in Africa: Implications for Agrifood Systems and the Rural Poor, *Development Policy Review*, 21 (3)

World Bank (1997) *Ethiopia: Export Development Strategy* Report No. 17098-ET, Washington D.C.

World Bank (2001) T*he Federal Democratic Republic of Ethiopia: Developing Exports to Promote Growth* Report No. 23294-ET, Washington D.C.

World Bank (2002) *Ethiopia: Developing Exports to Promote Growth*

World Bank Discussion Paper 198, Exporting High Value Food Commodities, Success Stories from Developing Countries, Jaffee, S Gordon, P

World Bank et al (2003) *Ethiopia:Trade and Transformation Challenges: Diagnostic Trade and Integration Study* 3 Volumes Draft Report, Addis Ababa