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Impact of EurepGAP on small-scale fruit and vegetable growers in Uganda

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Hot pepper being graded for export at NAMI Farm, Mukono (picture by U. Kleih).

Contents

List of Abbreviations

AMA	Agri-business Management Associates Uganda Ltd
APEP	Agricultural Productivity Enhancement Programme
AT (U)	Appropriate Technology (Uganda)
CB	Certifying Body
DANIDA	Danish International Development Agency
DFID	United Kingdom Department for International Development
DTIS	Diagnostic Trade Integration Study
EU	European Union
EurepGAP	European Retailer Protocol for Good Agricultural Practice
FAO	Food and Agriculture Organization of the United Nations
FHL	Fresh Handling Limited
GoU	Government of Uganda
HACCP	Hazard Analysis Critical Control Point
HORTEXA	Horticultural Exporters Association
HPOU	Horticulture Promotion Organisation of Uganda
ICT	Information and Communication Technology
IDEA	Investment in Developing Export Agriculture, USAID Funded
IGA	Income Generating Activities
IIED	International Institute for Environment and Development
IITA	International Institute for Tropical Agriculture
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MIS	Market Information Service
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organisation
NGOs	Non-governmental Organisations
NRI	Natural Resources Institute, University of Greenwich
PEAP	Poverty Eradication Action Plan
PIP	Pesticide Initiative Programme
PMA	Plan for Modernization of Agriculture
PMO	Primary Marketing Organisation
PRA	Participatory Rural Appraisal
QMS	Quality Management System
SSG	Small-scale Growers
SWOT	Strengths, Weaknesses, Opportunities and Threats
UBOS	Uganda Bureau of Statistics
UEPB	Uganda Export Promotion Board
UFEA	Uganda Flower Exporters Association
UNBS	Uganda National Bureau of Standards
UNFFE	Uganda National Farmers Federation
UNHS	Uganda National Household Survey
UK	United Kingdom
USAID	United States Agency for International Development
WFP	World Food Programme

Exchange Rates (February 2007)
£1 = USh3,400; $1 = USh1,750

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Picture Credits: Hot pepper being graded for export at NAMI Farm, Mukono by U. Kleih. All other pictures by F. Ssango (AMA) and U. Kleih (NRI).

SUMMARY

The DFID-funded project "Small-scale Producers and Standards in Agrifood Supply Chains" runs from 2005 to 2008, and is undertaken by the International Institute for Environment and Development (IIED) in partnership with the Natural Resources Institute (NRI) of the University of Greenwich. Its purpose is to create opportunities for small-scale producers in developing countries to participate in international horticultural supply chains given increasing concentration in the food retail sector and the rise of private voluntary standards (PVS). Key to the information gathering and knowledge creation for this project is an analysis of the impact of PVS and specifically EurepGAP on small-scale growers (SSG) of fruits and vegetables. This is the last of three country case studies – following Kenya and Zambia – with survey and analysis undertaken during February and March 2007 in partnership with the Kampala-based consultancy firm Agribusiness Management Associates Uganda Ltd (AMA).

The European Retailers Protocol for Good Agricultural Practice (EurepGAP) code for production of fresh fruits and vegetables was started in 1996 by a group of eleven British and Dutch retailers, with the objective of creating a single private sector standard for ensuring food safety and quality of fruits and vegetables from seed through to the farm gate. EurepGAP has expanded in scope and membership. By 2007, the thirty retailer members of EurepGAP controlled 85 per cent of fresh produce sales to consumers in the EU and the specific PVS exceed the legal minimum specified under EU regulations for food of non-animal origin.

Ugandan exports have a different profile to Kenya and Zambia, and our analysis prompts different solutions. The entire horticultural sector has many SSG and export is typified by SSG outgrowers supplying exporters, with little medium or large-scale horticulture for export. Research by NRI (2006) indicates that while 97 per cent of Uganda's export horticulture trade to the UK is by airfreight, less than 10 per cent is sold in supermarkets; with the majority sold in wholesale markets and through the food service sector. This indicates a high potential for *upgrading* the Ugandan export horticulture sector into products, qualities or quantities that are required to enter these growing supermarket supply chains. Traditionally, it is the supermarkets that demand PVS or other requirements for trade that exceed legal requirements. Hence, any upgrading for EU supermarket supply by Ugandan producers will require attention to PVS requirements. An important *a priori* concern for this project is 'standards drift' into the wholesale markets which might impact Ugandan exports without any of the attendant benefits of supplying supermarkets.

Ugandan horticultural exports have shown steady growth from the 1990s until 2005, when an estimated 5,600 tonnes (worth approximately US$5.6 million) was exported by 23 companies to non-African (herein "overseas") markets. In addition, about 6,000 tonnes of produce (worth about US$ 1 million) was traded regionally. The chief horticultural products exported include: hot pepper (Scotch Bonnet), matooke (East-Africa Highland banana), okra, chillies, avocado, pineapples (in dried and fresh form) and apple banana.

Unexpectedly, exports growth to overseas markets fell by 16 per cent in 2006 to 4,700 tonnes and our research indicates that the number of SSG supplying the export sector has fallen by 40 per cent in one year, from 2,145 to 1,260. The factors causing this fall are myriad, interlinked and difficult to discern with any precision. Exporters surveyed identify two chief culprits: rising fuel costs (leading to even higher airfreight charges), and the emergence of

increasingly stringent food standards in export markets (i.e. in particular EurepGAP; the EU General Food Law is perceived as less stringent). Other constraints are probably important including weak infrastructure, coordination issues amongst SSG, and inconsistent production owing to poor supply of inputs (e.g. seeds, chemicals, fertilisers, irrigation).

Although two export companies had acquired EurepGAP certification (Option 1) during 2004, there remains weak commitment from both the exporters and growers to make the system work. Significantly, these two companies have failed to renew their EurepGAP certificates, one of them stating that they now entirely focus on floriculture due to higher margins in that sector. The failure of these pioneers to make a success of EurepGAP is probably well known by other industry participants. Our analysis seeks to uncover the reasons for the lack of EurepGAP, to identify the potential for future EurepGAP compliance or other PVS, and to determine a plausible path for sustainable expansion of Uganda's export horticulture system.

Concurrently, our surveys reveal that other export companies are starting to recognise the danger of losing market share in the European wholesale markets, if they do not comply with EurepGAP. Some producers who specifically focus on organic produce exports appear more relaxed about future prospects, preferring to obtain organic certification.

Given the nature of the supply system whereby the majority of exporters tend to rely on groups of small-scale outgrowers, EurepGAP (Option 2) appears to be the most appropriate option for the time being. At the same time, one must bear in mind that EurepGAP is often criticised for being apparently geared towards the large-scale sector whilst many small-scale growers are likely to face considerable implementation difficulties (financial and technical).

On the financial aspects, this research has collected information and data on exporter costs and benefits from future EurepGAP compliance. Our calculations show that better-established export companies and SSG could meet the costs related to EurepGAP certification if they increased production:

- Based on average profit margins an export company would have to sell an additional 53 tonnes to break even (18 per cent more for a company exporting 300 tonnes p.a.).
- Farmers would have to increase their production (i.e. by about 0.1 to 0.3 acres) to be able to compensate for additional costs through higher net income.

It is likely that not all exporters and growers will be able or willing to meet the certification costs. This would result in the consolidation of the industry with fewer players remaining.

As for future growth potential, it appears that EurepGAP would first and foremost serve to *secure* market share in European markets and even recapture markets that have recently been lost. However, this requires that exporters commit themselves to undergo certification within the coming year. Ideally, HPOU should coordinate this process and ensure that several companies can be certified at the same time thus avoiding delays and extra-costs. It is assumed that the EU funded PIP programme could cover part of the certification costs.

Although exporters may prefer the overseas market due to its higher profit margins, those surveyed here suggested that there are also opportunities in cross-border trade, the domestic market and small-scale processing. Indeed, securing these markets in the short-term might prove more lucrative and sustainable than a riskier focus on overseas markets.

Stakeholders interviewed from the horticultural sector indicate that with appropriate support from government and donors, there is scope to upgrade both production and marketing in the face of emerging market opportunities. Key to a successful and sustainable strategy would be upgrading of infrastructure, widening of credit availability, and supporting the organisation of SSG groups in order to ensure that the latter form the backbone of the export industry in the foreseeable future.

1. INTRODUCTION

1.1 Background to the Study

The DFID funded project "Small-scale Producers and Standards in Agrifood Supply Chains" runs from 2005 to 2008, and is being undertaken by the International Institute for Environment and Development (IIED) in partnership with the Natural Resources Institute (NRI) of the University of Greenwich. Its purpose is to create opportunities for small-scale producers in developing countries to participate in international horticultural supply chains given the increasing concentration in the food retail sector and the rise of private standards. Independent commentators have suggested that many of the smallest farmers have been excluded from EU retail markets due to high compliance costs and insufficient capacity for standards compliance. In this study we sought to investigate the reality behind smallholder involvement with EurepGAP.

One of the project activities consists of an analysis of the impact of EurepGAP on small-scale growers of fruits and vegetables. Similar studies have already been undertaken in Kenya and Zambia. The aim of the case studies is to improve the understanding of the viability of small-scale growers in export horticulture chains that include EurepGAP compliance criteria. In addition to the costs and benefits of EurepGAP compliance, options open to horticultural producers and exporters that do not succeed in obtaining EurepGAP certification are being examined.

To some extent, the Ugandan study differs from the previous case studies owing to the lower significance of EurepGAP and other importing-country-imposed private voluntary standards. As a consequence, the impact of public standards and the trends in requests from importers (e.g. on packaging) are equally important in comprehending the incentives facing producers in Uganda.

The Uganda case study has been undertaken in partnership between NRI, IIED, and the Kampala based consultancy firm AMA (Agribusiness Management Associates Uganda Ltd). In particular, Mr Fred Ssango (Managing Director of AMA) and Dr Florence Kyazze (AMA Associate based at Makerere University) are the main in-country collaborators for the case study.

1.2 Methodology

The methodology employed was a tailored version of the approaches used in previous studies in this series in Kenya and Zambia. Learning from the fieldwork in these studies has informed the approach used here. In addition, the profile of Uganda's export horticulture and the absence of functioning EurepGAP systems has forced changes to our methodology to ensure that meaningful comparisons can be made across these three countries.

The methodology consisted of a literature review and fieldwork based on semi-structured interviews with key informants and focus groups, as well as direct observations of mainly farm infrastructure. The main objective of the survey was to identify potential costs and benefits of EurepGAP certification for small-scale growers of horticultural produce and exporters. Interviews were conducted with managers and other staff of the following horticultural export companies: AMFRI, COSEDA, ICEMARK, JAKSONS, MAIRYE,

NAMI, SERA, SULMA FOODS, and MUBUKU GROWERS. This represents a selection of nine out of twenty-three horticultural export companies. It should be mentioned here that Mairye Estates stopped exports of fruits and vegetables in early 2006.

Visits to the following districts were undertaken in order to hold discussions (semi-formal interviews and focus group discussions) with horticultural producers and farmer groups in the following districts: Mpigi, Mukono, Luweero, Wakiso. The main production areas are within 100km of Kampala. Production areas for East Africa Highland cooking banana "Matooke" and the sweet type "Apple banana" are concentrated in Rakai, Masaka, Mbarara, and Bushenyi Districts, whilst Mobuku Growers manage a horticultural irrigation scheme in Kasese District.

Other stakeholders consulted belong to the following organisations: Horticulture Promotion Organisation of Uganda (HPOU); Department of Crop Protection of the Ministry of Agriculture, Animal Industries and Fisheries (MAIFF); Fresh Handling Limited (FHL); Bank of Uganda Research Department; DFID; and the World Bank.

Less data on the costs and benefits of EurepGAP certification was generated compared to the other two country case studies (i.e. Kenya and Zambia). This is due to the fact that numerous companies of the latter are already certified whilst Uganda currently has no EurepGAP certified horticultural export company. Nevertheless, the research team is confident that the data in this case study reflect the reality given that figures provided by traders and farmers were cross-checked and triangulated by the team.

In light of the confidentiality of the information given, the identity of individual companies has been protected in the case study as much as possible.

2. EUREPGAP AND THE FOOD INDUSTRY

2.1 EurepGAP

In order to tell a coherent story of the impact of EurepGAP on small-scale growers it is necessary first to have an understanding of the current version (version 2.1-January 2004) of the EurepGAP protocol for fresh fruits and vegetables.

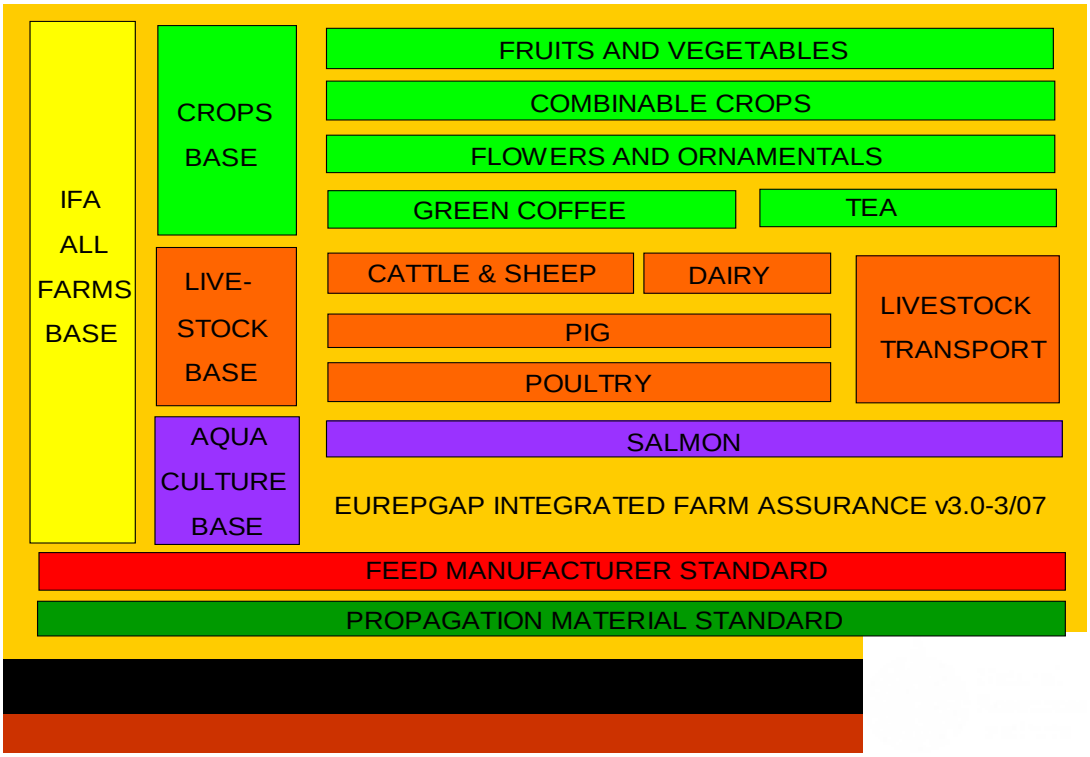
The European Retailers Protocol for Good Agricultural Practice (EurepGAP) code for production of fresh fruits and vegetables was started in 1996 by a group of eleven British and Dutch retailers, with the objective of creating a single private sector standard for ensuring food safety and quality of fruits and vegetables from seed through to the farm gate. From the retailers' perspective, getting suppliers to prove compliance with EurepGAP would provide all parties with a due diligence defence under EU food safety regulations. Major growers in Europe were also interested in EurepGAP as it offered a way of reducing the number of private sector standards in the market place and thus reducing problems with incompatibility of standards when trying to supply several retailers with the same product.

The EurepGAP standard has evolved with time and by September 2006 the number of retailer members had increased from 11 to 31 countries (including one Japanese retailer). In its first decade, EurepGAP has developed into a global standard with over 40,000 certificates in 85 countries around the world. National standards (Kenya-GAP, Chile-GAP, Mexico-GAP, China-GAP) have been developed, modelled on the original EurepGAP protocol and benchmarked against the EurepGAP standard to ensure system equivalence (N.B. benchmarking is still in process for some of the national GAPs mentioned above).

All respondents in Kenya and Zambia stressed the importance of EurepGAP for food safety assurance, and smallholders especially were highly positive about the many advantages and benefits of EurepGAP compliance, but all believed that the costs of compliance were too high.

At the time of writing, EurepGAP is being re-designed with the intention of launching version 3 in March 2007. For the new version it is intended to have a single standard for a wide range of food commodities rather than the current scenario of several different mutually incompatible EurepGAP protocols to cover different products. The layout of the new integrated farm standard is shown in figure 2.1. Under the new system a fruit or vegetable grower will need to comply with the all farms base module, the crops base module and the fruits and vegetables protocol. The new standard will offer many advantages for EurepGAP-compliant farms practicing mixed agriculture with, for example, dairy, pigs, barley and a horticultural crop on one farm. For most of the growers overseas and all of the small-scale operations the layout of the new standard is unlikely to have any real impact as they only produce fruits or vegetables for export to EurepGAP-compliant markets in the EU.

Figure 2.1 Layout of the EurepGAP integrated farm assurance standard v3.0-3/07



At the EurepGAP meeting in Prague in September 2006 many changes to the content of the standard were discussed. However, it remains to be seen what the final content of the new standard will be.

2.2 EurepGAP for small-scale growers (SSGs)

In order to understand why the smaller farms face such a challenge in meeting the requirements of EurepGAP, it is essential to understand the workings of the EurepGAP standard. In this report EurepGAP is taken to mean the fresh fruits and vegetables protocol 2.1-Jan 2004 that was introduced in September 2003 and became mandatory from January 2004. This version of EurepGAP is divided into fourteen chapters with sub-divisions into a large number of control points that cover all aspects of agricultural production from seed through to delivery of the product at the farm gate. Each control point has specific criteria for measuring compliance, and the system for measurement is via independent audits of the application of EurepGAP on the farm. To make the verification process easy the most important control points are highlighted in red and known as “major musts”. For a farm to pass the certification audit there must be 100 per cent compliance on major musts. The second category of control points are highlighted in yellow and known as “minor musts”, the farm must demonstrate compliance with 95 per cent of these control points at the time of the audit and 100 per cent within one month of completion of the audit. The final category of control points are highlighted in green and known as “recommended controls”. Failure to comply with the recommended points cannot be used as grounds for withholding a certificate, but a few of the recommended points are linked to minor and major musts. EurepGAP offers four optional routes for achieving certification but only two of these are applicable to most developing country suppliers. Their key features are as follows:

Option 1: Individual grower certification

- Individual grower demonstrates compliance with protocol
- Grower accepts management responsibility for compliance
- Apply EurepGAP approved certifying body (CB)
- Initial audit by CB
- Internal audit – minimum one per annum
- External audit – minimum one per annum

Option 2: Primary marketing organisation (PMO) / grower certification

- PMO = group with legal structure, 100 per cent control
- PMO has ultimate management responsibility for compliance
- PMO central procedures, all farm sites under central system
- All farms initial internal inspection, CB for PMO
- Internal audit one per annum all sites
- PMO annual system check by CB
- CB audit square root of farm sites e.g. 100 farms, audit ten per annum

Most large-scale commercial growers go for option 1 of EurepGAP, but most small-scale growers are unable to meet the requirements for certification under option 1, due to an inability to demonstrate compliance with all of the control points specified, resulting from inadequate technical and financial resources. The favoured option for SSGs is option 2 whereby groups of small-scale growers are certified as operating under a common management system.

Option 2 uses the same set of control points as option 1 but farmers must be grouped under a primary marketing organisation (PMO). The PMO takes legal responsibility for overall management of the scheme and compliance with EurepGAP, and each individual grower must sign a legally binding contract agreeing to comply with all of the requirements specified under the EurepGAP protocol. Annual audits are made of the PMO system and a number of randomly selected farm sites chosen by the auditor. For audits of schemes involving large numbers of growers the number of farm sites chosen for audit is often the square root of the total number of sites (the auditor may choose to evaluate more or less sites). If the chosen sites pass then the whole scheme is deemed to have passed. If one or more sites fail the whole scheme may be deemed to have failed depending on the seriousness of the non-compliance. If the auditor is satisfied that the scheme is compliant but one grower has failed on audit, that grower will be suspended from the EurepGAP scheme until the time of the next audit.

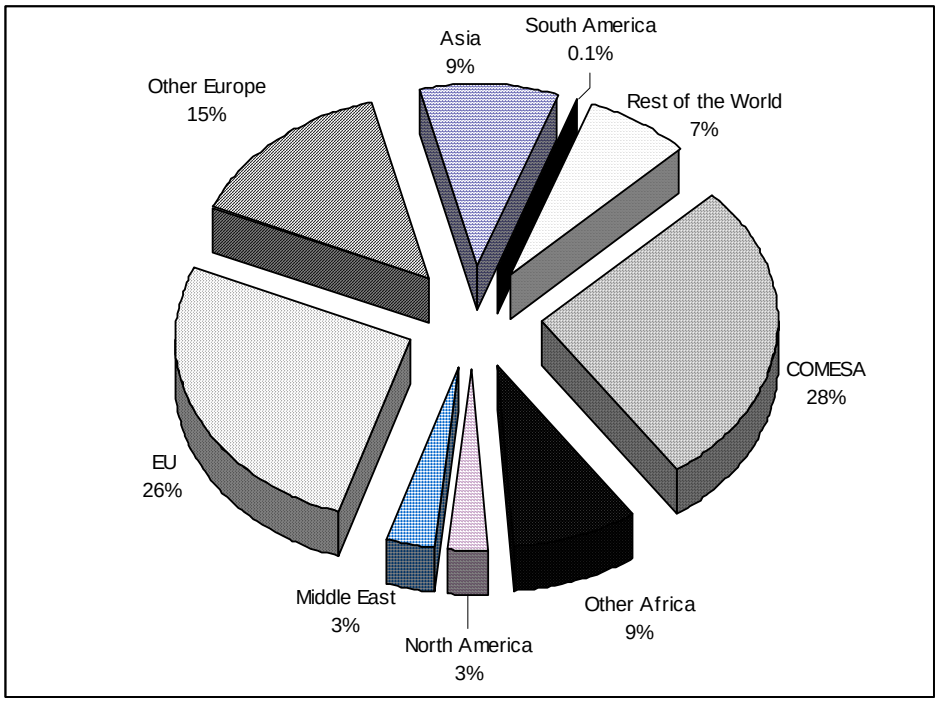
In September 2005, EurepGAP introduced a new feature for option 2 of the protocol in the form of a quality management system (QMS) checklist (Annex II of EurepGAP) and checklist of requirements for internal farmer group inspectors. To pass the certification audit the farmer group must demonstrate 100 per cent compliance with 85 control points in the QMS checklist and 9 control points pertaining to the farm inspector. The QMS covers issues such as legality of the farmer group and contractual documentation, and introduces the concept of an ISO compatible document control system and specifies the need for a Quality Manual, HACCP manual and Quality Management System manual. Development of these manuals and provision of suitably qualified farm inspectors is a major challenge for smallholder groups lacking access to external support from a large exporter or local service provider with experience in this area.

Auditing of the QMS involves the management of the PMO being able to understand and explain the interrelationships between a large number of documents.

3. AN OVERVIEW OF THE HORTICULTURAL EXPORT INDUSTRY IN UGANDA

As for the country's overall exports, Figure 3.1 shows the share of Uganda's exports by destination according to UBOS Statistics of 2003. COMESA superseded the EU by growing from 24 per cent to 28 per cent (worth US$151 million) whilst the EU declined from 35 per cent to 26 per cent between 2002 and 2003. The Middle East market also grew from 2 per cent to 3 per cent in 2003. Leading importers in the COMESA region were Kenya, Rwanda, Sudan and Tanzania. The EU is Uganda's second largest export market after COMESA, accounting for 26 per cent of export earnings. The EU provides duty and quota-free market access to Uganda under the "Everything But Arms" (EBA) initiative. Leading importers in the EU were Netherlands, UK, Belgium and Spain, with fastest increases coming from Poland and Switzerland.

Figure 3.1: Market Share of Trading Partners of Uganda, 2003



Source: UBOS Statistics & UEPB, 2003

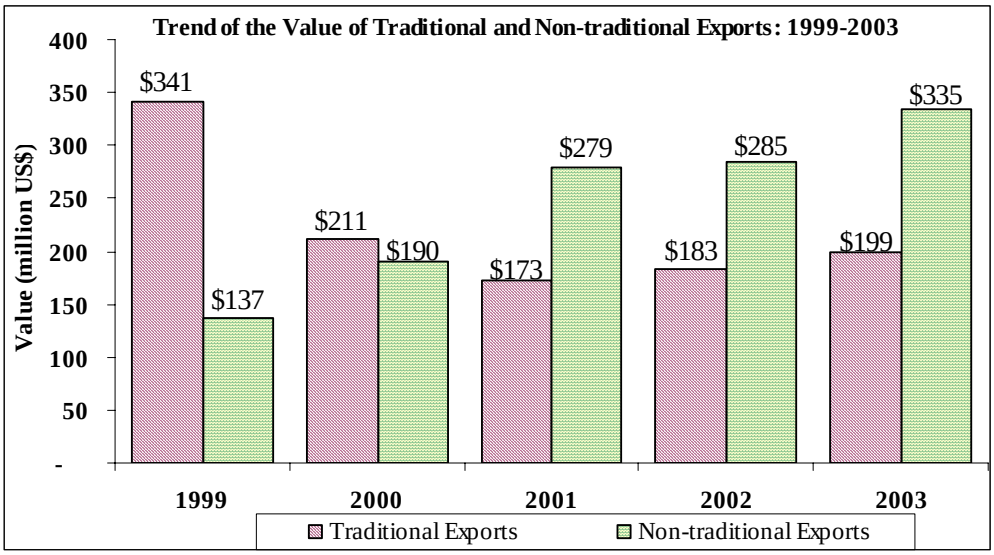
Uganda is endowed with abundant natural resources including good soils, fairly reliable rainfall as well as moderate climatic conditions that are conducive to the horticultural industry. The good climatic environment supports a good number of tropical and sub-tropical fruits and vegetables under organic and conventional production. Temperate crops can be grown in higher altitudes; however the experience with growing crops such as fresh beans for export has been mixed.

The area under cultivation for fruits and vegetables is estimated to be less than 1 per cent of the total agricultural land. Further hectare yields for both fruits and vegetables are estimated at 11.8 and 6.9 metric tones respectively (Uganda Investment Authority).

Production of fresh fruits and vegetables for export is carried out by smallholder farmers as well as a few small to medium-scale horticultural export companies. Currently, there are about twenty export companies supplied by about 1,300 smallholder farmers participating in the production of fresh fruits and vegetables for overseas exports.

The fruits and vegetables industry, which forms part of the non-traditional export sector, grew substantially between 1996 and 2005, with the overall expansion of non-traditional exports in the same period. Figure 3.2 shows the export value of traditional exports (coffee, tea, cotton and tobacco) in comparison to non-traditional exports (fish, flowers, fruits and vegetables, cereals and other commodities).

Figure 3.2: Export Value of Traditional versus Non-Traditional Exports, 1999-2003



Source: UBOS Statistical Abstract, 2004 and consultants' analysis

The contribution of traditional exports to the Ugandan economy has declined over the years. The decline in world market prices of commodities such as coffee led to less foreign exchange earnings for the country. On the other hand, export value of non-traditional exports continued to increase over the years. The main contribution in this sector was from fish and fish products, roses and cuttings, vanilla, cocoa, beans, maize and fresh fruits and vegetables.

For example, Uganda exported 2,168 tonnes of bananas, apple bananas and pineapples with a total value of US$1.29 million in 2001 compared to 884 tonnes worth US$903,000 in 2000 within the COMESA region (Uganda Investment Authority). Currently, Uganda exports a variety of fruit and vegetable products to Europe (Tables 3.1 and 3.2). The major fruits and vegetables include bananas, hot pepper (Scotch Bonnet), apple bananas, green chillies, okra, pineapples (fresh and dry), passion fruit and sugarcane. Bananas and hot pepper accounted for approximately 65 per cent of the volume of fruits and vegetables exported in 2001. It is important to note that Uganda is one of the biggest exporters of hot pepper in Europe. The major importers of fruits and vegetables from Uganda are British Asians who supply ethnic markets based in the UK. However, there are also European buyers in the UK and other EU countries that buy fresh or processed (e.g. dried fruit) products. Most of the Ugandan

vegetable exports were destined for the UK market (US$1.3 million), followed by Kenya (US$189,000), Belgium, Netherlands and Rwanda.

Table 3.1: Major Destinations for Ugandan Fruit Exports, 2004

Destination	Type of Product	Export Value (US$)
Kenya	Bananas	470,000
	Pineapples	31,0000
	Watermelon	24,000
	Other melons	20,000
United Kingdom	Bananas	326,000
	Other fruits	106,000
Germany	Other fruits	48,000
Belgium	Bananas	35,000
United Arab Emirates	Pineapples	28,000

Source: Accord Associates, based on UEPB data

Table 3.2: Main Destinations for Ugandan Vegetable Exports, 2004

Destination	Export value (USD)
United Kingdom	1,329,000
Kenya	189,000
Belgium	181,000
Netherlands	162,000
Rwanda	116,000
DRC	60,000
Oman	57,000
Others	206,000

Source: Accord Associates, based on UEPB data

Figure 3.3: Preparation of Vegetables for Export: NAMI Farm, Mukono District

Figure 3.4: Local Transport of Pineapples, Luweero District

Table 3.3: Horticultural exports to the EU and cross-border trade, 2001 to 2005

	Exports to the EU			Cross-border trade		
Year	Value '000 US$	Volumes tonnes	Av. Price US$/kg	Value '000 US$	Volumes Tonnes	Av. Price US$/kg
1991		345				
1995	630	792	0.80			
1996	1,420	1,518	0.94			
1997	2,050	2,153	0.95			
1998	2,300	2,874	0.80			
1999	3,280	3,280	1.00			
2000	3,650	3,500	1.04			
2001	2,961	3,028	0.98	600	1,500	0.40
2002	3,507	3,544	0.99	930	2,539	0.37
2003	4,553	4,227	1.08	774	5,816	0.13
2005	5,000	5,000	1.00	1,000	6,000	0.17

Source: IDEA and Accord Associates, quoted in Accord Associates (2006); NB: 2005 data were estimated

Table 3.3 demonstrates the importance of the EU market for horticultural exports from Uganda as it offers significantly higher unit prices (about US$1 per kg) compared to the regional cross-border trade (about US$0.13–0.17 per kg). As a result, the value of cross-border trade is estimated to be substantially lower than the value of exports destined for the EU market.

More details of the value and quantity of horticultural exports from Uganda are contained in Appendix 2. For example, the average export price of produce such as hot pepper, chilli, and passion fruit (about US$1.20 – 2.00), is higher than other fruits and vegetables.

Following steady growth since the mid-1990s, Ugandan horticultural exports to overseas markets have not increased as expected in 2006. The SWOT analysis in Table 3.4 explains some of the factors behind the observed scenario of stagnation, or even reduced export volumes over the last 12 – 18 months. Amongst others, the rise of fuel costs (leading to even higher airfreight charges and reduced margins), and the emergence of increasingly stringent food standards in export markets (in particular EurepGAP) have been identified by exporters as the main reasons behind the recent slow-down. (Also see section below on survey findings).

Given that the climate is not conducive to the production of many high-value crops demanded by the European market, Ugandan horticultural exporters mainly focus on niche markets including ethnic wholesale markets (e.g. hot pepper and matooke) and buyers of organic produce (e.g. fresh or dried pineapple and other fruits).

Table 3.4: SWOT Analysis of Uganda's Export Horticulture Sector

Strengths	Weaknesses
• Year round climate for production of specific products such as sweetheart roses, cuttings, pot plants, hot pepper, chillies, okra, pineapple, banana • Low cost of labour • Access to water • Access to international airport • Many of the horticultural crops are suitable for smallholder production	• Lack of effective coordination among growers • Unsuitable climate for off-season temperate crops (e.g. green beans, mangetout) • Limited cold chain facilities • Lack of national cargo carrier • Lack of infrastructure at alternative sites • Lack of competitiveness • Lack of incentives to attract FDI • Local under-investment / poor financial infrastructure • Poor road infrastructure and means of transportation • Air transportation more expensive than well established air hub in Nairobi
Opportunities	**Threats**
• Diversification, e.g. into organic fruit production; or processing (drying or pickling) • Shifting to new high altitude areas • Increased collective action for purchase of inputs • Increased bulking of produce to negotiate more favourable airfreight charges	• High cost of fuel • Lack of volume produce such as fish and horticultural goods to reduce freight costs • Rising airfreight costs • Increasingly stringent food standards in export markets • Unpredictable weather conditions
Shocks	
• Local energy crisis • Rising costs of fuel related inputs • Competition from neighbouring countries	

Source: Ferris and Laker-Ojok (2006) with adaptations by AMA/NRI

3.1 Key Stakeholder Groups in the Horticultural Export Industry

The following section outlines the key stakeholders and their roles in the horticultural export industry.

- Horticultural Producers: Currently, in early 2007, fresh fruits and vegetables for overseas exports are being produced by about 1,260 small-scale growers plus a few small farms attached to export companies. Though small-scale producers are one of the principal players in the horticultural industry, they are regarded as opportunistic producers who depend heavily on weather conditions and market demand for their existence. Due to lack of statistics it proved difficult to estimate the domestic market and the number of producers supplying this market segment. Nevertheless, it is estimated that over 90 per cent of Uganda's horticultural production is for the domestic market.

- Marketing agents/brokers: In the context of horticultural exports, marketing intermediaries connect the horticultural producers and their groups to the export traders. They perform a range of tasks ranging from; transport provision, harvesting, distribution and actual selling of horticultural produce. Intermediaries are prominent participants in the horticultural industry and are usually paid a fee (i.e. commission) to undertake all the marketing activities on behalf of the producers or exporters.

- Transporters: Transportation still remains a major problem in Uganda due to poor roads and poor means of transport. For example, wheelbarrows or bicycles are usually used for local transport from the farm to collection centres.

- Airfreight sector: Entebbe Airport is currently served by a freight company (MK Icemark) and about four passenger airlines that also transport horticultural produce (i.e. Emirates, British Airways, KLM, SN Brussels). Other airlines, which are less used for the air transport of produce, include Kenya Airways, Egypt Air, Ethiopian Airlines and Zimbabwe Air.

- Freight handlers: These include Enhanse, Fresh Handling Ltd. (FHL) and Anova.

- Processors: Agricultural processing is still in its infancy for the Ugandan horticultural sector. However, a South African company has recently started processing horticultural produce in Kampala for export to Europe and South Africa.

- Input suppliers: These are individuals that supply pesticides, seeds, and fertilizers to horticultural producers. Although local stockists are the major suppliers of these inputs, some exporters also provide the inputs to their outgrowers.

- Exporters: There are about twenty-three small to medium–scale companies that purchase horticultural products in bulk from farmers or intermediaries, have it airlifted to Europe, and sell it primarily to wholesale traders. European supermarkets are currently not supplied by Ugandan exporters.

- Associations: There are several producer and exporter associations bringing together key stakeholders in the sector, namely: Horticulture Exporters Association (HORTEXA), Association of Fresh Produce Exporters Companies and Horticultural Promotion

Organization of Uganda (HPOU). The latter is a newly formed umbrella organization that also accommodates all other associations.

- Government bodies: The Ugandan government has in place the Uganda National Bureau of Standards (UNBS), which is charged with the responsibility of developing, promoting and enforcing standards, quality assurance, metrology and testing practices. As such, UNBS is expected to ensure customer' interests and equity in the market place, and maintenance of an international tracking system. Other government bodies include the Ministry of Agriculture, Animal Industries and Fisheries, Department of Crop Protection; and Ministry of Health, Environmental Health Division. In addition, the Crop Development Board also plays an important role in ensuring food safety and quality assurance.

3.2 Government and Donor Support to the Horticultural Industry

As for government support, the Ministry of Agriculture Animal Industry and Fisheries (MAIFF) initiated a EurepGAP taskforce to sensitise growers about this market standard and its importance. In January 2004, a meeting took place to discuss a National Task Force for the Uganda Horticultural Export Sector. 24 participants from government, private sector and projects attended the meeting.

This was followed by the production of four documents related to quality assurance for horticultural products to comply with the EurepGAP (August 2004), namely:

- Manual of Standard Operating Procedures for Horticultural Commodity Inspection and Quality Assurance.
- Procedure for the Inspection of Horticultural Commodities for Export.
- Statutory Instruments to Guide the Production, Handling and Export of Fruits and Vegetables.
- Code of Practice for the Production, Handling and Processing of Fruits and Vegetables in Uganda.

It is not clear to what extent these documents have been finalised and are being used by stakeholders in the sector. Nonetheless, in 2005 MAAIF conducted training sessions to sensitise farmers and traders on EurepGAP. Growers and exporters interviewed during the survey expressed that the training was useful in that it raised awareness but that it lacked continuity.

As stipulated by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the majority of exporting companies in Uganda have registered with the Department of Crop Protection and obtained export numbers to ensure their products can be traced back to farm level.

The Ugandan government is also proposing the implementation of UGAGAP (Uganda Good Agricultural Practices) to support the improvement in food quality and safety of Ugandan exports to the EU markets. Though UGAGAP serves to improve the quality of Ugandan horticultural products, it may currently not be top priority given the significant expenses involved in the implementation of the programme. Another challenge is the failure by importing markets to accept the involvement and commitment of national programmes to monitor food safety and quality standards.

To clarify the situation and requirements, the DTIS study – Standards Chapter (May 2006) suggests that "*Rather than implement a stifling system of command and control—which is not being requested by Uganda's external trading partners and buyers—the medium-term objective should be to promote a 'quality culture' in Uganda's fresh produce industry and to facilitate the broader adoption of better agricultural, post-harvest, and packing practices, and associated systems for supply chain management, record-keeping, traceability, etc. For the foreseeable future, adoption of these practices should be voluntary rather than mandatory; supported by incentives and support services rather than imposed by inspectors and sanctioned by fines or other penalties. The medium-term strategy should be to define and achieve implementation of a UGANDAGAP, a more modest and less stringent version of EurepGAP. Industry, government, academe, NGOs and others could participate in developing and applying such a UGANDAGAP. In the future, should the external buyers of Uganda's fresh produce require compliance with more stringent technical standards or management systems, then the movement toward UGANDAGAP compliance will serve as an effective stepping stone plus elements in that protocol can themselves be refined to maintain its relevance to the evolving marketplace*".

Donor-funded projects have played a significant role in developing the horticultural export sector (Table 3.5). In particular, the USAID funded IDEA (Investment in Developing Export Agriculture) project which ran in two phases from the mid-1990s until 2004, was instrumental in stimulating the growth of non-traditional export crops such as fruits, vegetables and flowers. The successor project APEP (Agricultural Productivity Enhancement Project) places little emphasis on fruit and vegetable production and export, a fact lamented by the industry.

Export companies and outgrowers have also had a series of training sessions and capacity building measures through assistance of the EU funded PIP Programme. The PIP support is ongoing, although there appears to be an impasse between private and public sectors over issues such as task and resource allocation, which require resolving.

A DANIDA-funded initiative provides support to different types of agricultural marketing and processing. One of them is for exporters of organic produce, in the form of consultants' advice, support for testing new packaging materials appropriate for sea freight (e.g. containers for pulped fruit) and assistance to establish market linkages with European buyers.

Stakeholders in the industry feel that the success of horticultural exports and their ability to compete in international markets continues to depend on donor support. This includes the ability to meet food safety standards. Table 3.5 provides more details on the different donor initiatives supporting the sector.

Appendix 3 outlines the key government strategies and policies (e.g. PMA) that affect the agricultural production and marketing sector.

Table 3.5: Donor Support to the Horticultural and Floricultural Export Industry

Donor Agency	Type of Support Service
USAID (IDEA)	Agricultural Development Centre encouraging export of high and low-value agricultural crops (stopped in 2004)
Dutch Aid (PSOM)	Support diversification of new crops and new market opportunities
USAID (APEP)	Increase the number and quality of Ugandan middle managers; Collect floricultural export data
Dutch Government	Increase the number and quality of farm managers
UFEA/EU-BUDS/Private Sector	Increase the number and quality of Ugandan technical operators on floricultural farms
Private Sector/Development Banks (e.g. FMO/IFC)	Finance some capital costs associated with expansion of production
EU/PIP/Private Sector	Assist farmers to achieve food safety EU regulatory compliance
DANIDA	Agricultural marketing and processing project
UNIDO	Improve the efficiency of solar driers and the quality of the output
Rockefeller Foundation	Improve the competitiveness of small business adding value to fruit
TechnoServe (using funds provided by East African Development Bank)	Assist small organisations with business planning and strategic market development
UFEA and GOU	Improve the business environment for exporters
World Bank	Diagnostic Trade Integration Study, including a chapter on sanitary, phytosanitary and other standards, and an analysis of horticultural and floricultural exports – constraints, potential and an agenda for support.
Private Sector Foundation of Uganda (PSFU), Business Uganda Development Services (BUDS)	Supports private business development and supports programmes like capacity building on a 50 per cent cost share

Source: Accord Associates (2006), with adaptations by AMA/NRI

4. LESSONS LEARNED FROM UGANDA FLOWERS EXPORTERS ASSOCIATION

The Uganda Flowers Exporters Association (UFEA) was created over ten years ago as an umbrella organization bringing together over fifteen flower farms, mainly growing roses but also cuttings. The industry has had an evolution and several changes have taken place, including the task to organize all UFEA members to produce flowers following a Ugandan code of practice. Although this was voluntary, its application raised the profile and reputation of the industry in the market.

Currently over 75 per cent of all flower farms are MPS-ABC certified and several of these farms are now working towards MPS-GAP certification, whose standards are stricter compared to the former. The MPS-ABC and GAP all require full commitment by the farm owners and reasonable amounts of investment in infrastructure, human resource development and protection of the environment. UFEA employed a full time consultant who works with the growers to provide technical back stopping in the implementation of MPS-ABC and GAP. The arrangement not only assists individual members to do internal auditing but also helps them to quickly check their weak points and work on them. Annually, UFEA invites auditors from Holland to come and certify member farms. Thus, lessons learned from UFEA's experience include:

- Institutional motivation and taking a lead is very important;
- UFEA employs a full time internal auditor to assist members in preparing for external auditing;
- Members' commitment in implementing the recommendations of both internal and external auditors;
- Willingness and ability to invest in infrastructure as required to meet the standards;
- Members meet their financial obligations to the association and empower the association to carry out the entire necessary advocacy for the industry.

Figure 4.1 Field Survey near Kampala

Figure 4.2 Pickled Peppers, COSEDA, Mpigi District

5. SURVEY FINDINGS

5.1 Horticultural Export Development and Smallholder Involvement

Whilst in 2005 there were about seventeen Ugandan companies exporting horticultural produce overseas (pers. comm.: A Graffham), there were more than twenty at the time of the survey (February 2007). Although according to the Crop Protection Department of MAAIF there are a total of 26 companies, 21 active companies were identified during the survey. Table 5.1 shows how these companies have developed in terms of weekly quantities exported and the number of small-scale outgrowers supplying them. Two companies that have recently stopped exporting fruits and vegetables are included in this list.

Table 5.1: Horticultural exporters in Uganda – average weekly quantities exported and number of outgrowers

Company	Horticultural exports (tonnes / week)			Small-scale outgrowers	
#	2005	2006	Early 2007	2005	2006
1	4.00	2.50	2.5	120	40
2	2.00	2.00		56	30
3	15.00	17.50	17.5	205	300
4	0.00	0.00	Not active	0	0
5	17.50	0.00	Not active	200	0
6	2.96	5.73		20	40
7	3.00	3.00		70	30
8	3.00	2.19	0.65	126	53
9	7.00	7.00	4.5	30	30
10	3.00	2.50		16	16
11	3.50	0.00		75	0
12	1.50	3.00		26	28
13	5.00	6.25	6.25	306	115
14	6.00	1.00	0.5	34	15
15	0.40	0.40		35	25
16	15.90	16.70	8	602	260
17	0.80	1.20	1	25	25
18	0.00	1.00		0	10
19	7.50	12.50		80	120
20	8.00	3.20	2	94	94
21	1.50	2.00		25	25
22	0.70	1.00		0	0
23	0.00	0.40		0	5
Total SSG				**2,145**	**1,261**
Total t/wk	**108.26**	**91.07**			
Total t/yr	**5,630**	**4,736**			

Overall, it is estimated that the quantities of fruits and vegetables exported by these companies have dropped between 2005 and 2006 by approximately 16 per cent from 5,630 tonnes to 4,736 tonnes. It was noted that some of the exporters sent weekly consignments in February 2007 that were smaller than the average quantities shipped in 2006. In some cases this was due to lost contracts whilst supply factors (e.g. low production in February) have played a role in other cases. Most notably, in early 2006, Mairye Estates stopped exporting horticultural produce, preferring to focus their enterprise on flower exports.

The number of outgrowers has declined significantly between 2005 and 2006 from about 2,145 to 1,261. While Mairye no longer uses outgrowers, some of the other exporters have reduced their number of small-scale outgrowers.

Table 5.2 shows the prices obtained by exporters for their produce on the EU market between 2005 and early 2007. Overall, it transpires that despite some fluctuations, price levels have remained more or less the same over the last two years.

Table 5.2: Prices (C&F) obtained by exporters in Europe (in pound sterling)

Produce	2005	2006	Early 2007
Hot pepper (4-kg box)	8	7.5	7
Chillies (4-kg box)	7	8	7.5
Okra (6-kg box)	7 - 8	6 - 10	8.4
Matooke (10-kg box)	10 - 14	10 - 14	12 – 13
Pineapples (per kg)		2.45	2.50

Source: Kampala based exporters

When asked for the main challenges in their business, horticultural exporters stated the following:

- High freight costs. High costs of airfreight are frequently stated by Ugandan exporters as a key constraint, in particular when compared to neighbouring Kenya. Nevertheless, it appears that exporters have been able to negotiate relatively advantageous terms (about US$1.50/kg) with some passenger airlines when buying freight space for regular shipments to Europe (e.g. 10 tonnes per week). Without a contract an airline might charge about US$2/kg in early 2007 (compared with about $2.30/kg in mid-2006 when fuel prices were high). As a result, in early 2007 some exporters who do not have contracts with airlines are sending their produce as part of consignments sent by those who do have contracts at a cost of US$1.70 – 1.80/kg. The fact that horticultural exporters increasingly use passenger airlines seems to go at the expense of freight handling agencies such as FHL (Fresh Handling Limited).

- Standards. Exporters increasingly see standards required in their overseas export markets as a major challenge. In particular, EurepGAP is increasingly perceived as a barrier whilst the implementation of the EU General Food Law is perceived as less stringent (also see below in the section on survey findings).

- Inconsistent production. Limited access to good quality inputs (e.g. pesticides, fertilisers, irrigation) is one cause of inconsistent produce supply throughout the year.

- Lack of regulation. Established exporters complain about so-called “brief-case exporters” who, according to them, are not sufficiently regulated. Apparently they can easily enter the market but may also pose a threat if they bring the industry into disrepute (e.g. through cargos sent to Europe containing pesticide residues).

- Pests and diseases. In particular, vegetable production appears to be more prone to this problem than fruit production. For example, Mubuku farmers in Kasese have experienced significant losses over the last year or two as a result of bacterial wilt disease affecting their hot pepper crop. They use chemicals for other diseases (e.g. pesticides and

fungicides) but chemicals against wilt are either not available or too expensive, according to farmers.

- Drought. Changing weather patterns are affecting growers as well as exporters, in that it becomes more difficult to ensure a consistent supply of good quality produce. For example, longer periods without rainfall have recently affected the supply of more water dependent crops such as hot pepper.

- Seeds. According to exporters it is difficult to find good quality seeds required for export production. (More in section on constraints faced by farmers).

5.2 Exporters' Perception of EurepGAP

The majority of the nine companies visited perceive EurepGAP certification as important for their companies' future. Several exporters mentioned that they have missed contracts due to lack of EurepGAP certification. For example, it was reported that some UK, French, Dutch or Italian wholesale buyers had declined to buy produce unless it was certified. At the same time it was not revealed if these buyers were purely wholesalers or also intermediaries (e.g. category managers) that sell produce to supermarkets. Other buyers apparently continue to buy from non-certified Ugandan exporters in the expectation that certification will take place in the near future.

Nevertheless, exporters are concerned that buyers are becoming increasingly demanding and those who may not ask for certification now may do so in the near future. The awareness that an increasing number of companies are being certified worldwide is likely to play a role in this. For example, European buyers were reported to have put pressure on Ugandan exporters by saying that other countries such as Kenya, Tanzania and Zambia already have EurepGAP.

Some traders reported that supermarket retailers ask for not just one type of certification but several of them for the same consignment (e.g. EurepGAP plus organic). Also, it was stated that some Middle Eastern buyers have started to ask for certifications similar to the ones requested in the EU (so an exporter with EurepGAP would find it easier to enter that market).

Exporters mentioned labelling as a key requirement that is currently being stipulated in Europe. For example, it was stated that unlabelled boxes would be pulled out by the inspection services in Entebbe. This seems in accordance with the current traceability requirements of the European Food Law. Reflecting this, exporters have codes for each of their farmers so that potential problems with pesticide residues or diseases can be traced back to their origin.

5.3 Cost of Certification

Despite some awareness of EurepGAP and the requirements involved, the majority of traders do not seem to have calculated the costs in detail. As a result, cost estimates vary considerably depending on the extent to which new infrastructure (e.g. depot, CPP store, and other required facilities such as an incinerator) would be required. Whist some exporters have recently invested in the construction of depots that cost US$20,000–30,000[1], it is

[1] It was not possible to clarify whether or not the two exporters encountered who own these depots received subsidies for their construction or whether they were built as part of the companies' expansion strategy. It ought

estimated that US$8,000–10,000 (about USh15 million) is sufficient to construct a EurepGAP-compliant depot. In addition, water-related infrastructure is likely to be required and this may be equally expensive (e.g. boreholes, water storage tanks and pipes).

Staff costs of the Central Management Unit are the main element of EurepGAP-related recurrent costs, since it is estimated that several new staff members need to be employed by an export company relying on small-scale outgrowers (e.g. quality controller, farmer coordinator, extension officer, pesticide sprayers and depot clerk). In addition, a better-qualified production manager who is familiar with EurepGAP requirements, is likely to be needed, and staff need to be facilitated to ensure that they can do their work effectively. However, investment in the management team remains a challenge for almost all horticultural export companies.

Equipment includes items such as protective gear for spraying, means of transport (e.g. motorbike, bicycles), crates and scales. The running costs of this equipment can be significant, for example, if it is decided that a motorbike is required for the extension and supervisory staff.

Other EurepGAP-related costs for exporters include miscellaneous items (e.g. stationary and disinfectants) and documentation (e.g. approved pesticide list, emergency procedures, risk assessment and training and extension material).

The final steps required for certification consist of a pre-audit (to be carried out by a Ugandan company) and the final certification exercise (for the time being, to be carried out by an external company). It is assumed that both these costs will be covered by PIP. Whilst the pre-audit costs are of the order of US$3,000 (approximately USh5 million), it is estimated that the actual certification costs (i.e. fees and travel expenses of auditors) are of the order of US$7,000 for the first time and about US$4,000 for subsequent renewals.

As for laboratory analyses, it is assumed that PIP would cover pesticide residue analyses in Europe, whilst those analyses that can be undertaken in Uganda (e.g. soil and water analysis) will be covered by the exporting company.

According to the Manager of Mairye Estates, their EurepGAP certification (Option1) cost about US$22,000 (including $4,000 for the actual certification) in 2004. He estimates that the total cost would have been around US$30,000 had staff time been included in the cost calculations. According to him, EurepGAP did not present a major challenge – perhaps with the exception of paperwork - especially at the beginning. Nonetheless, the company decided not to renew their certificate in 2006. However, it was stated that this decision was independent of EurepGAP and other standards required in importing countries. The decision to abandon exports of fruits and vegetables and focus on floriculture was based on higher margins achievable in the flower sector, according to the company. It was reported that there was a second export company (with strong links to the flower industry) that had acquired EurepGAP (Option 1) a few years ago but had also not renewed their certificate.

Table 5.3 summarises the costs of EurepGAP certification (Option 2) based on an exporter who is supplied by two farmer groups of twenty members each (i.e. 40 farmers in total). It

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to be mentioned that the majority of exporters currently use depots that are significantly less expensive and in most cases unlikely to meet EurepGAP requirements.

ought to be borne in mind that this case is based on estimates and assumptions in that no Ugandan company has obtained EurepGAP (Option 2) certification, as yet.

Table 5.3: Total estimated cost of EurepGAP Certification in Uganda – Case of one exporter and 40 outgrowers

Item	Investment	Annualised investment costs, paid by			Recurrent costs (annual), paid by		
	(USh '000)	Exporter USh '000	Farmers USh '000	PIP USh '000	Exporter USh '000	Farmers USh '000	PIP USh '000
Farmers (40)	8,640		5,776		400	800	
Collection sheds (2)	60		25		100	40	
Central Mgt. Unit							
Salaries					10,800		
Infrastructure	33,470	7,333			2,050		
Equipment	4,750	1,590			907		
Miscellaneous					212		
Training					800		5,500
Documentation					1,230		
Laboratory analyses					2,000		7,000
Pre-audit							5,000
Certification							12,250
Total (U Shill. '000)	**46,920**	**8,923**	**5,801**		**18,499**	**840**	**29,750**
Total (US Dollars)	**26,811**	**5,099**	**3,315**		**10,571**	**480**	**17,000**

NB: The costs and cost allocations are based on estimates and assumptions.
It is assumed that the exporter will send by air about 300 tonnes of produce p.a. mainly to the EU. The produce is supplied by 2 groups of 20 farmers each.
A real interest rate of 12% has been used to calculate the annualised capital costs.[2]
Exchange rate: One US Dollar = Ugandan Shillings 1,750 (February 2007)
Details of the costs are contained in Appendix 4.

The figures demonstrate that exporters would be expected to pay for the bulk of EurepGAP compliance expenditures. Plus, exporters are likely to face both significant investment costs and bills for recurrent expenditures such as salaries. For example, the investment costs faced by exporters would be of the order of US$22,000 whilst annualised capital costs amount to US$5,100. EurepGAP-related recurrent costs, on the other hand, are expected to be of the order of US$10,600 with salaries being the main item followed by infrastructure maintenance and laboratory analyses.

[2] According to the Bank of Uganda, the average lending rate for Shilling transactions was 18.9 per cent in December 2006, whilst the average lending rate in foreign denominations was 9.2 per cent. The annual inflation rates for December 2006 and January 2007 were 11.3 per cent and 8.9 per cent respectively. (Source: Bank of Uganda, Monthly Economic and Financial Indicators, January 2007). Based on these figures and given that some exporters and growers have to pay interest rates on loans that are above average, a real interest rate of 12 per cent has been used for the calculation of annualised capital costs.

Figure 5.1: Field toilet, Jaksons' Outgrowers, Mpigi District

Figure 5.2: Plot markers in Pineapple Field, Luweero District

Farmers are expected to face very low running costs (i.e. US$480 per group), coupled with annualised capital costs of US$3,315. Given that these amounts would be incurred by groups of 40 farmers, the annualised capital costs per individual farmer would come to $83, and the recurrent costs to $12 (i.e. $95 p.a. in total).

These costs need to be compared to the overall turnover and net income of export companies and producers. It is estimated that a company exporting annually 300 tonnes of horticultural produce will ship a mix of high-value and low-value produce to Europe. Assuming that half of the produce is a high-value crop such as hot pepper (profit margin of $0.51/kg) and the remainder a low-value crop such as matooke (profit margin of $0.08/kg), this would result in annual company profits of US$88,500 before tax. Compared to these figures EurepGAP related investment costs of US$20,000 – US$30,000 appear affordable, in particular when these translate into annualised capital costs of the order US$5,100. Annual running costs of around US$10,600, the main elements of which are going to be increased salaries, infrastructure maintenance and soil and water laboratory analyses, also appear to be affordable but companies would expect to compensate for this extra-cost through increased benefits (also see below).

Nevertheless, it can be envisaged that not all companies are willing or able to pay for EurepGAP. In particular, smaller companies with an annual turnover of less than 100 tonnes or those companies only exporting relatively low-value produce (e.g. matooke) to markets which do not require EurepGAP (e.g. ethnic wholesale markets) are likely to avoid the certification process and related costs. In the longer-term, the horticultural export sector of Uganda is likely to undergo a consolidation process, resulting in fewer companies competing in an increasingly demanding market. It remains to be seen to what extent they will be able to increase their long-term share in European mainstream and niche markets. For the time being, they are concerned to recapture the share that they have recently lost and to get back to the quantities and values exported in 2005.

As for small-scale farmers, it has been calculated that their net income from growing horticultural produce for export would be of the order of USh0.7 million to USh2 million (US$400 – US$1,140) per annum. In view of this, annual EurepGAP-related costs of US$95 significantly dent farmers' income if they cannot compensate for the costs through increased direct income. Some efficiency savings are to be expected, which will indirectly enhance margins by reducing total costs. At the same time, growers are aware that they may lose their market without EurepGAP certification and many of them are prepared to undergo the certification process.

Regarding PIP contributions to the certification exercise, it is assumed that they will fund exercises related to capacity building (e.g. training), laboratory analyses in Europe, pre-audit, and the actual certification (i.e. US$17,000 in total). Given that auditors have to come from Europe, it would be cost saving if several export companies could agree on a date when they and their outgrower groups could undergo EurepGAP certification (Option 2) exercise.

5.4 Exporters' Benefits of EurepGAP Certification

Ugandan horticultural exporters expressed mixed views about the potential benefits of EurepGAP certification. Whilst all expect to attract more buyers and be able to export larger quantities of produce, there is less unanimity about potential price gains. Some exporters seem to think that substantial price gains will be possible once they have obtained certification, however this may be based on only a limited amount of research on their part. For example, some traders expect (or rather, hope) that UK supermarkets will buy their hot pepper at prices of £14 – £15 per 4kg-box (i.e. double the current price). Other traders would accept that prices may not be much higher given the competition from other companies and countries, but hope to access new markets. This reflects the fact that some traders have lost market shares over the last one to two years, and part of them would simply be content if they could achieve export quantities similar to the ones of the previous years.

In view of this, it seems realistic to envisage only relatively limited export increases in terms of quantity and value (i.e. about 10 per cent of the current total); or approximately 500 tonnes, corresponding to an estimated US$0.5 million over the first twelve months following EurepGAP certification of a group of leading exporters. A similar increase can be envisaged over the second year, bringing Uganda's horticultural export industry back to 2005 levels.

As for individual export companies, they are likely to compensate the extra costs through increased turnover. Based on annual EurepGAP-related costs of US$15,670 (i.e. annualised capital plus recurrent costs) a company would have to expand its annual overseas shipments by about 53 tonnes to break even. This is based on an average profit margin of US Cents 29.5 per kilogram of produce exported[3]. The additional quantity required corresponds to about 18 per cent for a company currently exporting 300 tonnes. Lower extra quantities would have to be achieved if the company could focus its business on higher value exports such as hot pepper.

In summary, a well-established export company should be in a position to recover the extra EurepGAP-related costs through increased turnover. On the other hand, small companies exporting about 100 tonnes per annum or less are likely to face financial difficulties if they attempt to meet EurepGAP requirements. This points to a forthcoming consolidation process, with fewer horticultural export companies remaining (i.e. about twelve).

5.5 Organic Certification

By comparison, the costs for organic certification were quoted to be of the order of €6,000 - €8,000 (US$7,800 – US$10,400) for export companies. These costs only reflect the actual certification as such and do not take into account other additional costs (e.g. infrastructure, additional salary costs). At the same time, a DANIDA funded agricultural marketing and processing project is sponsoring inputs related to capacity building (e.g. funding of organic production and processing specialist) and applied research into new types of containers that would allow sea-freighting of semi-processed products such as fruit pulp.

Nonetheless, overall costs of organic certification appear to be lower compared to EurepGAP certification. In addition, the organic certification process seems less complex for the companies involved who demonstrate better understanding.

[3] Detailed calculations of profit margins are contained in Appendix 5.

One of the two exporters of organic produce that participated in the survey stated that EurepGAP certification was not a priority for him given that the company preferred to focus on organic produce, trying to obtain the highest organic certification (i.e. Demeter) in the near future. A second exporter interviewed is certified by UGOCERT for the Uganda organic standard and CERES (Certification of Environmental Standards) for the EU regulation 2092/91. In addition, the company is preparing for EurepGAP certification.

As for farm level costs related to organic certification, these appear to vary significantly depending on production conditions. For example, in some areas with relatively flat fields no major extra costs were stated, whilst contouring of fields may be required in hilly terrain for environmental reasons (i.e. to avoid soil erosion). Contour making was stated as quite cost intensive due to the extra labour required.

By and large, production of fruit crops such as pineapple, apple bananas and mangoes seems to be better suited for organic production in Uganda. Vegetables, on the other hand, are more prone to pests and diseases and are therefore more difficult to produce without chemicals. At the same time, it has been reported that chemicals for organic production are being imported into Uganda. For example, a neem-based pesticide is being imported but is difficult to find in Kampala due to high demand in areas where organic cotton is grown.

Exporters of organic produce encountered during the course of the survey claim to pay farm-gate prices that are significantly higher than those for conventional produce (i.e. about 50 per cent price premium). For example, a large size pineapple would be bought for USh1,500 whilst local prices would be of the order of USh1,000. Similarly, organic mangoes might be bought for USh2,000 per kg at farm gate while conventional fruits would fetch USh1,000 to 1,500. At the same time, according to other sources, the premium for organic produce is reported to be only 10 per cent and falling.

The existence of a local organic certification body in the form of UGOCERT appears to play a positive role in preparing local traders and producers for international certification audits by bodies such as CERES and Demeter.

5.6 Growers and Farming System

As indicated above, it is estimated that in 2006 there were about 1,260 small-scale outgrowers compared to 2,140 in 2005 (Table 5.1). To some extent this reflects farmers going out of export production but it also indicates a trend for exporters to prefer to procure from fewer but larger producers.

Table 5.4 shows the principal horticultural products produced by small-scale growers for export to Europe and other overseas markets, indicating the extent to which there is a local market.

Table 5.4: Main products exported to Europe and other overseas markets

Vegetables	Fruits
Hot pepper (no local market)	Pineapples (local market)
Chillies (small but growing local market)	Matooke (plantain) (local market)
Okra (small but growing local market)	Apple banana (local market)
Sweet potatoes (local market)	Passion fruit (local market)
Ginger (local market)	Avocados (local market)
Pickled sweet peppers (no local market)	Mangoes (local market)

Farmers grow horticultural produce for export on fields that are on average between a quarter of an acre and one acre in size. In addition, most farmers have other fields on which they produce local food crops such as maize, matooke, beans and other cash crops, such as coffee. Total farm sizes are of the order of 2 – 6 acres in the areas encountered during the survey. Nevertheless, there are also farms that are considerably larger than that (e.g. a farm with eight acres of pineapple alone).

Net income from horticultural export production is estimated to be of the order of USh0.7 million to USh 2 million (US$400 – US$1,140) per annum per farmer. However, this tends to vary considerably depending on the crops grown and the intensity of production. Details of the calculations are contained in Appendix 5. Given the labour intensive nature of horticultural production, labour costs tend to represent the most important cost element. It is estimated that a farmer's family can spend up to 200 person-days per annum on horticultural production. Based on local wage rates of USh2,500 per day this would correspond to USh0.5 million ($285) in terms of opportunity costs.

Although some farmers also use their own means to purchase inputs, often farmer groups tend to make agreements with their exporters to provide them with inputs, especially pesticides and spray pumps, and the money will be deducted as they sell their produce. Exporters do not charge interest.

Issues and challenges that were brought up by farmers during the course of group discussions include the following:

- Seed supply. Apparently there is a lack of good quality horticultural seeds on the market. Although there are companies that sell seed, the type and quality sold may not be appropriate for export production. It was reported that some exporters have supplied or are supplying farmers with seeds; however it was also reported that in a few instances the seed was of low quality or the wrong type. Some farmers use discarded produce for seed for the following season, which is one of the reasons why the seed material loses its vigour.

- Chemicals. Many horticultural growers find it difficult to buy appropriate chemicals to combat pest and diseases on their plants. This may be due to drug shops that sell poor quality chemicals or shops being far away. As a consequence, farmers use a range of products, the exact application of which they may not know. In order to tackle this problem, organisations such as AMA and the NGO VEDCO have been training farmers in pesticide use and also how to identify good quality products. Table 5.5 shows the names of chemicals that are being used by farmers according to the survey.

Table 5.5: Chemicals used by horticultural producers and active ingredients

Chemical – brand name	Active ingredient
Fenkil	Fenvalerate
Tafgor	Dimethoate
Cyperenza	Cypermethrine
Malathion	Malathion
Thionex	Endosulfan
Thiovit	Sulphur 80%
Rocket	Cypermethrine
Diathane	Mancozeb
Neem pesticide	Neem extract

The potential use of DDT in Uganda to combat malaria is a concern for horticultural exporters in that the chemical is on a list of banned chemicals in the EU. As a consequence, exporters fear that use of the chemical around homesteads will bring it into contact with horticultural produce destined for export.

- Drought. According to farmers, rain patterns have become more erratic in Uganda, in that dry spells may last longer than usual thereby threatening the production of agricultural produce. In particular, horticultural crops depend on sufficient supplies of water. As a result, increased use of irrigation equipment is being considered by both farmers and exporters. At the same, it appears that equipment has only been acquired in a few horticultural areas and much more remains to be done in this respect.

- Prices. In some areas farmers have complained that exporters pay them low prices for their produce. In particular, prices can become very low when there is over-supply in the market. For example, it was observed that farmers received between USh1,000 and USh10,000 per 4.5kg box of hot pepper in Mpigi during the first half of 2006. In other areas, farmers complained about the low producer price of chillies (USh500 per kg) or okra (USh3,000 per 6kg box). To some extent this may reflect market conditions in that some exporters have lost contracts to supply the EU market, which in turn can lead to temporal gluts in production areas. Nevertheless, exporters are also aware that farmers require incentives in the form of prices that stimulate a sufficiently large production in the long-term.

5.7 Farmers' Benefits of EurepGAP

Farmers that have well established links with exporters seem to be well aware of the need for EurepGAP certification and stated that they are prepared to undergo the audit process. When asked for the time required to get ready, they stated periods between one month and one year to get everything in place.

Farmers that are better aware and have already put in place some of the requirements, have stated the following advantages of EurepGAP certification for them:

- Production of quality produce,
- Improved field hygiene,
- Better knowledge of pesticide use, and

- Some farmers feel they have benefited from record keeping.

As for EurepGAP-related extra costs, it has been shown above that these are of the order of US$95 per annum per farmer (i.e. USh166,250). Depending on the crop it can be expected that farmers would have to reallocate resources to obtain higher output. Given that price increases are likely to be small their best bet will be to increase their horticultural plots by about 0.1 to 0.3 acres. Similar to export companies, given that not all farmers will be able to make this expansion, this points to a consolidation process at village level in that in future larger quantities are likely to be produced by fewer farmers.

5.8 Alternatives to Horticultural Export Production

When asked for options in case their usual buyer would stop purchasing horticultural produce from them, farmers replied that they would then attempt to sell to other exporters. Cultivation of produce for the local markets is the most likely outcome if an export market disappears altogether. This may well include traditional food crops such as maize, matooke and beans, as well as livestock. A few female farmers in Mpigi said they would sell handicraft (e.g. local mats).

Farmers in the vicinity of Mairye Estates represent an interesting case in that they were faced with exactly this problem when the estate stopped purchasing horticultural produce for export in late 2005 / early 2006. It was estimated, that subsequently about half of the two hundred outgrowers had stopped growing horticultural produce for sale whilst the remaining ones had reduced production by about 50 per cent. Those who remained would have tried to sell to other export companies, albeit at a lower scale, or produce for the local market.

Overall, it is estimated that horticultural production by small-scale farmers declined by about 75 per cent when Mairye stopped buying from their outgrowers. It was only in 2006/2007 that a South African company encouraged 24 farmers to produce peppers (for pickling) on 0.25 acres each. In February 2007, the crop was almost mature for harvesting and processing in Kampala prior to export. No EurepGAP certificate is required for this export.

The question was raised as to whether or not the local market would be able to absorb surplus production. Growers indicated that there is already substantial cultivation of produce that is traditionally consumed by the local population, including the inhabitants of Kampala. Crops that are not traditionally consumed (in particular, hot pepper) would be very difficult to sell. When asked about the option to sell to the two recently established supermarkets in Kampala, it was revealed that this had already been attempted and the quantities required by supermarkets are quite small.

Regional markets (e.g. Congo, Rwanda, Southern Sudan) also represent potential outlets for Ugandan horticultural produce. Nevertheless, farmers and local traders revealed that this market is limited and sporadic. For example, it was stated that local traders may sometimes be contacted to supply to areas where UN Peace Keepers are based, given that there are relatively large numbers of UN personnel in some parts of the region. This may lead to sporadic price increases of products such as hot peppers or chillies on the local market.

In sum, it appears that farmers would prefer to sell to overseas export markets given that they offer higher prices and a more stable income.

6. CONCLUSIONS

Ugandan fruit and vegetable exports had seen steady growth from the 1990s up until 2006, when they started to stagnate or even decline (from about 5,630 tonnes in 2005 down to 4,735 tonnes in 2006). According to exporters the decline was largely due to high airfreight charges and increasingly stringent standard requirements in overseas markets (e.g. EurepGAP). The number of small-scale growers supplying the industry has declined from about 2,150 to 1,260 over this period.

Other apparent competitive disadvantages faced by Uganda's horticultural sector are related to factors such as:

- Production constraints such as lack of improved varieties, poor agronomic practices, lack of appropriate and relevant extension services and limited access to inputs
- Uganda is a recent entrant in the export market of horticultural products and therefore faces stiff competition from countries like Kenya which has over 40 years of experience in horticultural exports and has key value chain players in several market segments
- The Ugandan system produces and exports fresh produce using SSGs working with relatively small exporters – there are no large companies with the productive or marketing might to competitively break into the European market
- For most parts of the country, the Ugandan climate is not conducive to the production of temperate vegetables for which there is the highest demand in European countries
- Due to the nature of production, the Ugandan horticultural sector is characterized as fragmented, lacks an organizational body for collective action and has featured on-going entry and exit over time.

The introduction of EurepGAP and the potential consequences for the horticultural sector of Uganda needs to be seen in light of the following issues:

- EurepGAP appears to be more geared towards the large-scale sector whilst Uganda's horticultural industry is characterised by many small-scale growers who are likely to face implementation difficulties
- The majority of Ugandan horticultural exporters are small-scale traders and there is a likelihood that many will be unable to comply with EurepGAP requirements, resulting in consolidation to leave an estimated dozen exporters.
- The enabling environment in rural Uganda remains incomplete. Compliance in the long-term is not simply a question of raising standards and practice at farm level. It is also essential to make other elements of the agricultural system efficient. Without an enabling environment, compliance is rendered difficult for even the strongest firms. Missing markets exist for finance, trade credit, information and business service provision. Crucially for SSGs, this means poor access to quality farm inputs at market prices.
- Currently, there is a lack of commitment from both the exporters and growers to make the EurepGAP system work. Concurrently, export companies are starting to recognise the danger of losing market shares in the European wholesale markets (which they traditionally supply) if they do not comply with EurepGAP as 'standards drift' is evidenced. Only some producers who specifically focus on organic produce are more relaxed, preferring to obtain organic certification.

Securing market share is the most important outcome from EurepGAP compliance within the Ugandan export sector. Compliance would first and foremost serve to avoid further loss of market shares in Europe and recapture markets that have recently been lost. However, this requires that exporters commit themselves to undergo certification within the coming year. Ideally, HPOU should coordinate this process and ensure that several companies can be certified at the same time thus avoiding delays and extra costs.

Upgrading to comply with EurepGAP appears possible for some industry participants along the supply chain. Cost calculations have shown that the better-established export companies ought to be able to meet the costs related to EurepGAP certification. Based on average profit margins an export company would have to sell an additional 53 tonnes per year to break even (i.e. about 18 per cent for a company exporting 300 tonnes per annum). Farmers would have to increase their production (by about 0.1 to 0.3 acres) to be able to compensate for additional costs through higher net income.

Yet, overseas markets are typified by risk and currently all of the initial exporters are seeking market opportunities elsewhere. Although exporters may prefer the overseas market due to its higher profit margins, it has been suggested that there are also opportunities in the following areas:

- Cross-border trade in horticultural products in which Uganda has a comparative advantage. For example, matooke, pineapple and apple bananas are already being exported to Kenya
- Uganda's domestic market is growing due to population growth and changing consumer preferences (e.g. increasing demand for healthier foods)
- Processing of fruits and vegetables for the domestic and international markets takes place, albeit at a small-scale. This includes drying of fruits such as pineapples and mangoes and the production of juices.

Stakeholders in the horticultural sector express that with sufficient support from government and donors, there is scope to take better advantage of the horticultural production potential in Uganda and market opportunities. This would involve: upgrading infrastructure; making financing available on favourable terms; and giving support to the organisation of groups of small-scale outgrowers given that the latter are likely to form the backbone of the export industry in the foreseeable future. It has been suggested that NAADS could play a stronger role in this respect.

Figure 6.1 Packaged and Processed Peppers, SULMA Foods, Kampala

7. APPENDICES

Appendix 1: References

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Appendix 2: Horticultural Exports from Uganda

Table 7.1: Value and volume of horticultural exports, 2003

Product	Value US$ '000	Volume Tonnes	Average price US$/kg
Matooke (banana)	883	982	0.90
Apple banana	178	182	0.98
Hot pepper	1,332	904	1.47
Green chilli	205	170	1.20
Beans	10	17	0.60
Okra	456	477	0.96
Passion fruit	28	14	1.98
Pineapple	113	143	0.79
Others	1,380	1,339	1.03
Sub-total	4,585	4,228	1.08
Cross border	774	5,816	0.13
Total	5,359	10,044	0.53

Source: IDEA (2004), quoted in Ferris and Laker-Ojok (2006)

Table 7.2: Value of horticultural exports 1996 – 2004 (US$ '000)

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Roses	6,110	8,650	7,705	9,950	11,070	10,932	14,095	18,668	23,470
Cuttings	120	1,120	2,340	3,510	3,540	4,974	7,031	7,863	9,000
Horticulture	1,420	2,050	2,300	3,280	3,650	3,561	4,437	5,327	8,617
Vanilla	475	637	750	1,860	2,020	6,594	9,426	11,948	6,120
Totals	10,121	14,454	15,093	20,599	22,280	28,062	36,991	45,809	49,211

Source: IDEA (2004) and UBOS (2005) quoted in Ferris and Laker-Ojok (2006)

Appendix 3: Trends in Ugandan Agriculture and Policies

This section provides policy context but does not evaluate the precise impact of these policies on agricultural development. Over the last two decades Uganda has realized phenomenal progress that has been facilitated by its pursuance of policy reforms designed to create a proactive and more liberal market-oriented economy. During this period the country realized average annual growth rate of six per cent and this is projected to remain more stable in the foreseeable future. The major policy and legislative measures that were taken to develop effective agricultural commodity marketing include the disbanding of the state-owned commodity marketing boards, deliberate policy to promote agricultural exports, liberalization of foreign exchange and the recent enactment of the warehouse receipt law. In addition, the elaborate government strategies that are enshrined in the PEAP (PMA, NAADS) and the Marketing and Agro-processing Strategy (MAPS) and are augmented by some improved road and telecommunication infrastructure, are aimed at stimulating a private sector-led agricultural transformation into farming for a profit. Further, the increasing relief efforts for the volatile region, the conducive investment climate and the increased donor intervention efforts have propelled the growth in agricultural production and marketing. The government policies and strategies, with support from donor projects, are paying off as reflected in the steady growth in total agricultural exports and agro-processing operations and the increase in the commercial agricultural crops being introduced and marketed.

The Government of Uganda (GoU) has put in place policies that have stimulated growth of various sectors including trade. The policy programs that have been initiated by the government for promoting trade, and thus bearing relevance to this study, are summarized below.

(i) The Poverty Eradication Action Plan

Poverty Eradication Action Plan (PEAP) is the guiding framework for reducing mass poverty in Uganda. It is a comprehensive development framework, drawn up for the country by the national government, for a population that is largely rural, engaged in subsistence agriculture and living below poverty levels. Therefore, the interventions seeking to increase the productivity of factors of production in agriculture, to ensure food security and to create gainful employment through commercial agriculture are an important aspect of increasing household incomes. The agriculture sector remains the largest contributor to the national GDP and employs the majority of Ugandan citizens (Table 7.3).

Table 7.3: Sector contributions to GDP and GDP growth (at basic prices)

Contribution to GDP	**2001/02**	**2002/03**	**2003/04**	**2004/05**	**2005/06**
Agriculture	39.9%	39.1%	37.4%	35.6%	34.0%
Industry	18.9%	19.3%	19.8%	20.6%	20.5%
Services	41.2%	41.7%	42.8%	43.8%	45.5%
Total GDP	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Contribution to GDP growth	**2001/02**	**2002/03**	**2003/04**	**2004/05**	**2005/06**
Agriculture	1.6%	0.9%	0.3%	0.6%	0.1%
Industry	1.5%	1.3%	1.6%	2.1%	0.9%
Services	3.3%	2.3%	3.5%	3.7%	4.0%
Total GDP growth	**6.4%**	**4.5%**	**5.4%**	**6.4%**	**5.1%**

Source: Uganda Bureau of Statistics

PEAP adopts a multi-sectoral approach to poverty eradication, recognizing the multi-dimensional nature of poverty and the inter linkages between influencing factors. This is in an effort to promote rapid economic growth, structural transformation, good governance and security to ensure that the poor improve their incomes as well as their quality of life. PEAP is composed of five pillars and pillar number two embraces production, competitiveness and incomes in an effort to promote private sector's skills and business development. The revised PEAP however has four main goals, including: creation of a framework for rapid economic growth; structural transformation; ensuring good governance; and security. The aforementioned goals aim directly at increasing the ability of the poor to raise incomes and consequently improve the quality of their livelihood.

(ii) The Plan for Modernization of Agriculture (PMA)

The Plan for the Modernization of Agriculture (PMA) is a framework that sets out the strategic vision and principles by which interventions should address poverty eradication through transformation of the agricultural sector. The Plan for Modernization of Agriculture is therefore a holistic strategic framework for eradicating poverty through multi-sectoral intervention to improve people's livelihoods sustainably. In addition, the Plan for Modernization of Agriculture (PMA) is part of the Ugandan government strategy to eradicate poverty through the transformation of subsistence agriculture to commercial agriculture. PMA supports smallholder farmers by improving their agricultural productivity through increased agricultural education. The private sector is also a large stakeholder in the PMA and the Ugandan government urges this stakeholder group to invest in agricultural education in order to deliver services that are of high priority to the business world. The PMA therefore provides for:

- A conducive macro-economic policy framework that provides an enabling environment for private sector investment. In this, regard private investors may invest into the horticultural sector with confidence in the economy, as well as ensuring public confidence in the currency, resulting in financial stability, balance of payments viability and steady growth with low and stable inflation.

- An economic recovery programme where trade and structural reforms embrace a liberalized system for input and output markets, and trade, investment and tax regimes. The reforms - including liberalization of agricultural input trade, liberalization of domestic and export produce, marketing and processing, removal of restrictive tariff and non tariff barriers, abolition of taxes on agricultural export - are aimed at promoting the growth of the private sector. The trade liberalization policy facilitated open trade for horticultural crops in Uganda, leading to the expansion of market opportunities for the horticultural industry. Liberalization trade policies also served as an outlet for Uganda's horticultural products to the larger international markets that offered more competitive prices.

- Recognition that gender has an influence on division of labour and power relations within households. A comprehensive gender policy formulated in 1997 emphasizes the need to promote all gender groups at all institutional levels. Equal access and control over production resources and the recognition of women's roles and contribution to economic developed has increased female participation in the production and marketing of horticulture produce.

- The focus on research and technology development as stipulated in the agricultural research policy ensures that more relevant and responsive research geared towards the needs of the farmers is carried out. There has been heavy investment to promote productivity enhancing technologies within the fruit and vegetable sectors. Since a variety of tropical fruit and vegetable products can be grown in Uganda, a number of improved varieties of fruits such as avocado, pineapples, passion fruits and apples have been developed and made available to the farming communities. Vegetable seeds for okra and hot pepper are imported, though local multiplication is also practised for hot pepper.

(iii) The National Agricultural Advisory Services (NAADS)

The National Agricultural Advisory Services (NAADS) is one of the government programmes under the PMA in the Ministry of Agricultural, Animal Industries and Fisheries conceived under PMA. NAADS has a mission to increase farmers' access to information, knowledge and technology for profitable agricultural production and one of its principles focuses on building farmers' capacity to demand appropriate technologies and agricultural advisory services. NAADS provides a platform for smallholder farmers to access information, knowledge and technology for profitable agricultural production. The NAADS programme will therefore be fundamental in the horticultural sector since NAADS offers a demand-driven extension service through a decentralized farmer-owned and private sector extension delivery system.

(iv) The Marketing and Agro-Processing Strategy (MAPS)

The government of Uganda has also developed a Marketing and Agro-Processing Strategy (MAP) that links producers to consumers both in the domestic and foreign markets. This is an effort to reduce bulk and add value to Uganda's agricultural products. In order to add value to products, MAP is investing in the agro-processing sub sector to enhance the competitiveness of Ugandan products in the local, regional and international markets. MAP further promotes the use of farmer groups, associations and co-operatives to strengthen the capacity for the production of high value crops that meet the required quality standards at

both domestic and foreign markets as well as reliable volumes all year round. MAP also fosters the development of market infrastructure, including the establishment of an Agricultural Commodity Exchange (ACE) and a Warehouse Receipt System (WRS). Furthermore, MAP serves to provide market information and price risk instruments to strengthen the bargaining power of smallholder farmers.

(v) The Medium Term Competitiveness Strategy (MTCS)

The government of Uganda has also introduced the Medium Term Competitiveness Strategy (MTCS) under the Ministry of Finance, Policy and Economic Development to remove all bottlenecks to private sector investment. The name was then changed to the Competitive Investment Climate strategy. CICS fosters a conducive business environment for the private sector to enhance the competitiveness of Uganda's exports at the world market. CICS also undertakes reform and interventions in infrastructure and utilities, the financial sector, commercial justice, trade investment and export development. The Strategic Export Program (SEP) under the CICS is charged with implementing selected interventions that promote export growth and competitiveness in the horticultural sector. In addition, the horticulture export sector strategy provides a framework to expand the horticultural sector through technology to grow and process horticultural products, which in return calls for intensive education of technicians and training of growers to increase production.

Appendix 4: Exporters' Budgets for Selected Crops

Hot pepper budget – Exporters (Example of high value export crop)		
	$/kg	**Notes**
London C&F price	3.43	£7 per 4kg box
Air freight costs	1.80	Average (Variation from 1.5 - 2.03 $/kg); Feb. 2007
Packaging	0.25	US$1 per box
Local transport	0.10	USh300,000 per 2 tonnes
Other expenses	0.20	Company fixed & variable costs (approx. US$30,000 p.a.)
Price for farmers	0.57	USh4,000 per 4kg box
Exporter's profit	0.51	
Matooke budget – Exporters (Example of low value export crop)		
	$/kg	**Notes**
London C&F price	2.55	£13 per 10kg box
Air freight costs	1.80	
Packaging	0.20	
Local transport	0.10	
Other expenses	0.20	
Price for farmers	0.17	USh3,000 per 10kg box (or USh6,000 per bunch)
Exporter's profit	0.08	

Appendix 5: Farmers' Budgets for Selected Crops

Hot pepper, Mpigi - Outgrowers

(on 1 acre)

	Units	Price /box (USh)	Weeks	Total per annum (USh)	Notes
Gross income	20 box/wk	4,000	36	2,880,000	Yield 3,240 kg/acre
Costs					
Seeds				30,000	
Pesticides				40,000	
Boxes				-	
Fertiliser				50,000	Dung
Labour:					
Land preparation				60,000	
Planting (sowing & transplanting)				40,000	
Weeding				270,000	Includes USh240,000 family labour (96 days)
Fertiliser applic.				16,000	
Harvesting				300,000	USh8,000 @ 36 (120 days)
Pesticide applic.				12,000	
Transport				64,800	USh1,000 per 50kg
Total cost				882,800	Includes USh400,000 family labour
Net income				1,997,200	

Hot pepper (Mukono District) – Outgrowers

(0.5 acres - intensive production)

	Units	Price/unit (USh)	Weeks	Total per annum (USh)
Gross income	25 box/wk	4,000	36	3,600,000
Costs				
Pesticides: Rocket Diathane		12,000 6,000	42 42	504,000 252,000
Fertiliser		-		-
Labour:				
Land preparation				50,000
Planting (family)	14	2,500		35,000
Weeding family labour	1 8	15,000 2,500	9 9	135,000 180,000
Harvesting		16,000	36	576,000
Transport		10,000	36	360,000
Total cost				2,092,000
Net income				1,508,000

Chilli (Wakiso, near Mairye) (per acre basis, p.a.)			
	Units	**Price/unit (USh)**	**Total per annum (USh)**
Gross income	3,500kg	500	1,750,000
Costs			
Pesticides & fertilisers			150,000
Seed			50,000
Labour:			
Land preparation			90,000
Planting			30,000
Weeding			300,000
Harvesting			350,000
Transport			70,000
Total cost			1,040,000
Net income			710,000

Okra (Wakiso, near Mairye) (1 acre, per year)					
	Units	**Price (USh)**	**Times/ year**	**Total per annum (USh)**	**Notes**
Gross income	4,500kg	500	1	2,250,000	
Costs					
Seeds	4	9,000		36,000	
Pesticides				120,000	
Fertiliser	3	50,000	2	300,000	
Labour:					
Land preparation				50,000	
Planting				30,000	
Weeding				150,000	5 times at USh30,000
Harvesting				270,000	900 boxes at USh300
Transport		90	1,000	90,000	
Total cost				1,010,000	Includes USh500,000 family labour
Net income				1,240,000	

Pineapples (Luweero) (1 acre; 2-year crop)				
	Units	**Price (USh)**	**Total per annum (USh)**	**Notes**
Gross income	12,000kg	500	4,800,000	(80% of total is good quality fruit)
Costs				
Manure			240,000	2 x USh120,000
Planting material	20	12,000	240,000	
Labour:				
Land preparation			80,000	
Planting			60,000	
Weeding			540,000	9 times USh60,000
Harvesting			200,000	900 boxes at USh300
Transport			100,000	
Total cost			1,460,000	Includes USh1,000,000 family labour
Net income			3,340,000	Over two years

Chilli (Luweero District) – Outgrowers (per acre; annual)					
	Units	**Price /box (USh)**	**Months**	**Total per annum (USh)**	**Notes**
Gross income	200 box/mnth	2,000	6	2,400,000	200 x 4kg boxes over 6 months
Costs					
Pesticides	2	10,000	12	240,000	
Sowing				8,000	
Fertiliser	3	20,000		60,000	
Labour:					
Planting				30,000	
Weeding	2	10,000	12	240,000	
Watering	4	1,000	2	8,000	Seed bed
Harvesting	200	500	6	600,000	
Transport	96	1,000	1	96,000	USh1,000 per 50kg
Total cost				1,332,000	Includes USh450,000 family labour
Net income				1,068,200	

Appendix 6: Uganda – Costs associated with EurepGAP Certification

(Case study is based on a horticultural export company exporting about 300 tonnes of produce p.a., which is supplied by 2 farmer groups of 20 members each)

Real interest rate: 12% (This interest rate takes inflation into account)

Item	Investment costs (USh)	Life of invest. (years)	Annualised capital costs (USh)	Annual capital costs (USh) paid by:			Annual running costs (USh) paid by:		
				Exporter	Farmers	PIP	Exporter	Farmers	PIP
Farm level (per farmer):									
Plot markers	8,000	5	2,219		2,219				
Toilet and shower block	80,000	2	47,336		47,336			10,000	
Handwash	5,000	1	5,600		5,600				
CPP spray markers	50,000	1	56,000		56,000			10,000	
Chemical soakaway	10,000	2	5,917		5,917				
Scouting station markers	5,000	1	5,600		5,600				
Mixing drum	40,000	5	11,096		11,096		10,000		
Disposal pit	3,000	2	1,775		1,775				
Collection shed (for 20 farmers):									
Cooperative registration							100,000		
Construction of shed	30,000	3	12,490		12,490			10,000	
Rental charge for plot								10,000	
Harvesting containers	300,000	2	177,509		177,509				

Item	Investment costs (USh)	Life of invest. (years)	Annualised capital costs (USh)	Annual capital costs (USh) paid by:			Annual running costs (USh) paid by:		
				Exporter	Farmers	PIP	Exporter	Farmers	PIP
Central Management Unit:									
Salaries									
Production manager (50% of salary)							3,000,000		
Depot clerk							600,000		
Farmers' coordinator							600,000		
Spraying operators (2)							1,200,000		
Extension officer							2,400,000		
Quality controller							3,000,000		
Infrastructure									
Central store (depot)	15,000,000	15	2,202,364	2,202,364			300,000		
Toilet	1,000,000	5	277,410	277,410			50,000		
Handwash / crates washing facilities	200,000	5	55,482	55,482			20,000		
Charcoal cooler	1,500,000	6	364,839	364,839			100,000		
Water installation (inc. borehole, pipes)	10,000,000	5	2,774,097	2,774,097			1,000,000		
Reservoir tank	5,000,000	5	1,387,049	1,387,049			500,000		
Premise fencing	700,000	4	230,464	230,464			70,000		
Incinerator	70,000	2	41,419	41,419			10,000		
Equipment									
Office equipment and furniture	120,000	5	33,289	33,289			12,000		
Knapsack sprayers (2)	300,000	5	83,223	83,223			30,000		
Bicycles (4)	400,000	5	110,964	110,964			40,000		

Item	Investment costs (USh)	Life of invest. (years)	Annualised capital costs (USh)	Annual capital costs (USh) paid by:			Annual running costs (USh) paid by:		
				Exporter	Farmers	PIP	Exporter	Farmers	PIP
Motorbike (1)	2,000,000	5	554,819	554,819			500,000		
PPE (Gum boots, goggles, etc)	650,000	3	270,627	270,627			100,000		
First aid kit	30,000	1	33,600	33,600			10,000		
Chemical kit carrier	130,000	5	36,063	36,063			13,000		
Digital scale (for chemicals)	300,000	5	83,223	83,223			120,000		
Weighing scale (for produce)	40,000	5	11,096	11,096			4,000		
Grading scales (for produce)	30,000	5	8,322	8,322			3,000		
Crates	500,000	2	295,849	295,849			50,000		
Lamps (pressure and ordinary)	100,000	5	27,741	27,741			10,000		
Signage	150,000	5	41,611	41,611					
Miscellaneous									
Stationary							100,000		
Posters							10,000		
Disinfectant for cleaning toilet							60,000		
Soap for handwash stations							12,000		
Chlorinating solution for handwash							30,000		
Training									
Safe use and handling of CPP									2,000,000
Hygiene and food safety									1,000,000
HACCP									1,000,000
EurepGAP auditor training									1,500,000
Internal auditor training							800,000		

Item	Investment costs (USh)	Life of invest. (years)	Annualised capital costs (USh)	Annual capital costs (USh) paid by:			Annual running costs (USh) paid by:		
				Exporter	Farmers	PIP	Exporter	Farmers	PIP
Documentation									
Approved pesticide list							10,000		
Outgrower COP							10,000		
Emergency procedures							10,000		
Risk assessment							100,000		
GAP assessment							100,000		
Stationary (covered above)									
Training and extension material (e.g. posters on safe use of CPP, hygiene, first aid. Environmental issues)							1,000,000		
Laboratory analysis									
Pesticide residue analysis (Europe)									7,000,000
Soil analysis (local)							1,000,000		
Water analysis (local)							1,000,000		
Pre-audit									
External farm assessment (incl. reports) (5m USh for the first time, 3m USh thereafter, every two years)									5,000,000

Item	Investment costs (USh)	Life of invest. (years)	Annualised capital costs (USh)	Annual capital costs (USh) paid by:			Annual running costs (USh) paid by:		
				Exporter	Farmers	PIP	Exporter	Farmers	PIP
Certification									
External certification (incl. travel, accommodation, registration fee, external farm assessment, and report writing) ($7,000 for the first time; $4,000 thereafter, every 2 years)									12,250,000
Total (Ugandan Shillings)	**38,751,000**		**9,249,095**	**8,923,551**	**325,543**		**18,109,00**	**40,000**	**29,750,000**
Total (US Dollars)	**22,143**		**5,285**	**5,099**	**186**		**10,348**	**23**	**17,000**
Exchange rate: USh to the US$	1,750								
Total (Pound Sterling)	**11,397**		**2,720**	**2,625**	**96**		**5,326**	**12**	**8,750**
Exchange rate: USh to the GBP	3,400								

Appendix 7 - Checklist for Data Collection with Growers and Exporters

Impact of Food Standards on Growers and Exporters of Fruits and Vegetables in Uganda

Company name:_____ Date: _____

Company background information

Grower	
Exporter	
Location of company	
Founding year of company	
Number of full-time employees (male / female)	
Number of part-time employees (male / female)	
Number of outgrowers: 2005 2006 Location of outgrowers:	
Type of certification: for export No certification (standard produce) Organic (since when) EurepGAP (since when) Other (since when)	
Main produce exported – Vegetables (list)	
Main produce exported – Fruits (list)	
Quantities exported in 2006 – Vegetables (tonnes) Quantities exported in 2005 – Vegetables (tonnes)	
Quantities exported in 2006 – Fruits (tonnes) Quantities exported in 2005 – Fruits (tonnes)	
Values exported in 2006 – Vegetables (US$ or UgShillings) Values exported in 2005 – Vegetables (US$ or UgShillings)	
Values exported in 2006 – Fruits (US$ or UgShillings) Values exported in 2005 – Fruits (US$ UgShillings)	
Destination of produce – Vegetables: Countries Type of buyers	
Destination of produce – Fruits: Countries Type of buyers	
Other information:	

Information about Food Quality Standards

(i) What food quality standards are you aware of?

(ii) What government bodies in Uganda make sure that food quality standards are met?

(iii) Have you heard about EurepGAP as a food quality standard? If yes, what is EurepGAP?

(iv) Which markets do you currently supply: Supermarkets or Wholesale Markets?

(v) What are the major markets for your products (destinations)?

(vi) Please describe supply chains for your produce.

(vii) What are the quality standards that you have to meet for the market that you supply?

(viii) From the quality standards mentioned in (i) above, which ones have you complied with?

(ix) If there are some quality standards that you have not complied with, please give us reasons for your answer.

(x) What kind of strategies can you suggest that will enable more farmers to comply with the quality standards?

(xi) Why and how do buyers of your produce ensure that quality standards as mentioned under (i) above are followed?

(xii) How do you ensure that the quality standards in (iii) above are met?

(xiii) What precautions do the buyers undertake to ensure that the quality standards in (iii) above are met?

(xiv) What major challenges do you face in an effort to comply with the quality standards?

(xv) How have food standards changed the horticultural industry in Uganda?

(xvi) What are the major constraints facing the horticultural industry in Uganda?

(xvii) What opportunities do you think exist for the horticultural industry?

Small-scale production cost for typical export vegetable (per acre of produce)

Items	Cost (standard production)	Cost (certified production; EurepGAP)	Cost (organic production)
Land preparation			
Seeds			
Fertilizers			
Pesticides			
Irrigation			
Transport			
Labour costs – Sowing Weeding Fertiliser application Pesticide application Irrigation Harvesting Transport Other			
Other cost 1			
Other cost 2			
Total costs			
Gross income			
Net income			

Small-scale production cost for typical export fruit (per acre of produce)

Items	Cost (standard production)	Cost (certified production; EurepGAP)	Cost (organic production)
Land preparation			
Seeds; if trees specify number			
Fertilizers			
Pesticides			
Irrigation			
Transport			
Labour costs – Sowing Weeding Fertiliser application Pesticide application Irrigation Harvesting Transport Other			
Other cost 1			
Other cost 2			
Total costs			
Gross income			
Net income			

Certification costs (in addition to 'normal' production costs)

Item	Investment costs		Running costs	
	Ug Shill.	Who pays (e.g. farmers; exporters, PIP)	Ug Shill.	Who pays (e.g. farmers; exporters, PIP)
Farm-level				
Plot markers				
Toilet and shower block				
Handwash				
CPP spray markers				
Chemical soakaway				
Scouting station markers				
Mixing drum				
Disposal pit				
Other				
Central stores for X groups				
Rent for store (CPP, Fert)				
First aid kit				
Refill for first aid kit				
PPE (gum boots, goggles, etc)				
Signage				
Incinerator				
Transportation of cabinet				
Knapsack sprayers				
Bicycles				
Storekeeper salaries				
Sprayers salaries				
Security salaries				
Stationary				
Digital scale				
Stores furniture				
Chemical kit carrier				
Committee allowance				
Other				
Collecting Shed				
Cooperative registration				
Construction of sheds				
Rental charge for plots for shed construction				
Charcoal cooler				
Water installation				
Reservoir tank				
Premise fencing				
Signage				

Posters				
Weighing scales				
Grading scales				
Office equipment				
First aid kit				
Refill for first aid kit				
Toilet				
Handwash / crates washing facility				
Disinfectant for cleaning toilet				
Soap for handwash stations				
Chlorinating solution for handwash				
Record clerks and field supervisors				
Field supervisor bicycle				
Bicycle maintenance allowance				
Seed store				
Visitors waiting bay				
Harvesting containers and crates store				
Harvesting containers				
Crates				
Pressure lamp and ordinary lantern lamp				
Paraffin				
Loading				
Stationaries				
Record forms				
Cleaning detergent				
Monthly transport to bank and exporters office				
Committee allowances				
Sub-total Central Management Unit				
Exporter's Costs				
Personnel, e.g. outgrower management unit; traceability unit staff				
Operational costs, e.g. vehicles, fuel				
Training				
e.g. Safe use and handling of CPP				

Hygiene and food safety				
HACCP				
EurepGAP auditor training				
Internal auditor training				
Documentation				
Approved pesticide list				
Outgrower COP				
Emergency procedures				
Stationary for records				
Risk assessment				
Gap assessment				
Training and extension material, e.g. posters on safe use of CPP, hygiene, first aid, environmental issues				
Laboratory Analysis				
Pesticide residue analysis				
Soil analysis				
Water analysis: - Microbial-irrigation water - Microbial-handwashing - Irrigation suitability - Chemical analysis				
Pre-audit				
External farm assessment				
Report writing				
Certification				
Quality management system				
Registration fee				
External farm assessment				
Internal auditor assessments				
Report writing and certification				
Travel				
Accommodation				

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