

United Nations Conference on Trade and Development

***Linking African Small Producers to Large
Distribution Networks:***

***Enhancing Capacity of Mozambican Producers to
Supply the South African Market***

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Executive summary

Mozambique has a small export horticultural industry that in recent years has more than doubled in size to almost \$4.5 million in 2005. Compared to some other countries in the region, this may be small, but Mozambique has excellent comparative advantages – e.g. climate and good communication links with South Africa – so it is anticipated that exports will continue to expand. Its climate brings very specific advantages to Mozambique in terms of seasonality and crop choices. South Africa is an important and significant market that is growing rapidly. The market is becoming increasingly dominated by the supermarkets and therefore it is more discerning in terms of quality standards. The opportunity for Mozambique is to take advantage of this opportunity and to help small farmers become suppliers.

There have been a number of reports that have highlighted the horticultural export opportunities in South Africa – mainly tropical fruit, some out-of-season vegetables, as well as paprika. This report endorses these observations and has identified further crop opportunities, i.e. cocoyams and coconut juice. This report also stresses that, if Mozambican exporters can meet the standards demanded by the South African supermarkets, then for very little extra investment it should be possible to exploit market opportunities beyond South Africa, e.g. yams and butternut squashes in Europe.

Currently, the export horticultural drive in Mozambique is driven by no more than 10 exporters. Most of these are large-scale commercial farmers, the exceptions being a vegetable export operation based in Chimoio, which is still in its infancy, and the paprika export, both of which are targeting small farmers for most of their product. However, it should be noted that when the large-scale commercial farmers have established export links, it will open up opportunities for smaller farmers to use the infrastructure, market links and administrative procedures that will have been established. One of the key findings of this study is that it is imperative for the existing export trade to develop and grow, because it will open up the opportunities for a much wider productive base.

There are, however, some issues that need to be addressed to help Mozambique realize its export horticultural potential, in particular, sanitary and phytosanitary (SPS) issues. This report also addresses the issues associated with meeting these standards in respect of family sector farms and recommends a strategy to gain access to South African markets, which will then open up other markets.

It is important to understand why the SPS hurdle in South Africa appears to be so severe. The scale of the South Africa's horticultural exports to Europe and the Americas is very large (\$4.5 billion in 2004), and this produce has been grown to meet the very high standards demanded by these markets. Thus, there is a very strong base of farmers who already meet the international standards. Also, retailers within South Africa now understand the concept of the "due diligence" approach to food safety and quality and, as there is a large base of farmers that can meet the standards, the supermarkets demand it, knowing that it can be delivered. It is not just the supermarkets, but some wholesale markets in South Africa that are also demanding it. For example, even though the largest grower of tomatoes in the world, ZZ2, targets

the wholesale market, it has full EUREPGAP¹ certification. It is apparently not appreciated by some growers that quality and safety are strong selling points, even in wholesale markets. Lower quality is often dumped unless there is a severe shortage.

The second issue that could impact on Mozambican exports is as a result of South Africa's citrus sales to the United States. It is necessary for pest risk assessments (PRAs) to be performed in the next few months on a range of fruit fly pests as well as citrus canker and American Foul Brood. If this is not completed satisfactorily, it could potentially lead to South African authorities stopping horticultural imports. This issue is so urgent that a discussion of a PRA on the most important pest, the fruit fly, is included in the annexes.

There are two initiatives in Mozambique to address some of the SPS issues. The first is the Food and Agricultural Organization of the United Nations (FAO) project to build capacity in the Departamento de Sanidade Vegetal within the Ministry of Agriculture to undertake PRA. This project is a good start and should contribute to enhancing the long-term capacity of the ministry's ability to carry out PRAs. However, it does not address the short-term need to undertake PRAs currently demanded by the South African authorities.

The second initiative is the grant application by the Ministry of Industry and Commerce to establish a certifying body for EUREPGAP. The application is, again, laudable, but needs to be developed further. For example, in Europe and the United States, certifying bodies are a private sector activity, while Government's role is to provide oversight in the form of legislation. The application is to introduce EUREPGAP, but it is important that it also cover other standards that are being demanded by the markets, e.g. British Retail Consortium (BRC) for pack houses and British Agrochemical Standards Inspection Scheme (BASIS) for pesticide advisors and operatives. It is recommended that the grant application consider allocating some funds for a "bottom-up" approach, where a relatively small amount of money is used to help small farmers meet the international standards. This is particularly important because, as has been noted in other reports, the development of small-farmer horticulture is constrained by lack of finance. Therefore, assistance to help the small farmer meet the SPS and other standards demanded by the retailer would be a valuable service. Provided that it is carefully targeted, it would not be excessively expensive.

The approach to helping reduce rural poverty through developing exports must be focused first on ensuring a healthy commercial export horticultural sector, which can then lead the way for the small farmer to access South African markets. If this does not happen, small-farmer exports will, at best, only be opportunistic and small. Therefore, help given to ensuring the success of large-farm exports will be the catalyst for smaller farmers to become established. Then a programme can be established to help the small farmers meet the SPS standards demanded by the South African

¹ In responding to the demands of consumers, retailers and their global suppliers have created and implemented a series of sector-specific farm certification standards called "Euro Retailer Produce Working Group Adopting Standards of Good Agricultural Practices (EUREPGAP)". The aim is to ensure integrity, transparency and harmonization of global agricultural standards. It includes the requirements for safe food that is produced respecting worker health, safety and welfare, environmental and animal welfare issues.

retailers. If sufficient flexibility is built into the Ministry of Industry and Commerce grant application, it should be possible to ensure that SPS problems do not limit small-farmer involvement in export horticulture in the short to medium term.

Acronyms and abbreviations

AgriBEE	Agricultural Black Economic Empowerment
BACCS	BASIS Advanced Amenity Contractor Certification Scheme
BASIS	British Agrochemical Standards Inspection Scheme
BBBEE	Broad Based Black Economic Empowerment
BRC	British Retail Consortium (accreditation standard)
DEFRA	Department for Environment Food and Rural Affairs
EC	European Community
EU	European Union
EUREPGAP	European Good Agricultural Practices (certification standard)
FAO	Food and Agricultural Organization of the United Nations
FAPAS	Food Analysis Performance Assessment Scheme
FDI	foreign direct investment
FPC	Fresh Produce Consortium
GDP	gross domestic product
GLP	good laboratory practices
HACCP	Hazard Analysis and Critical Control Points
ILAC	International Laboratory Accreditation Cooperation
ISO	International Organization for Standardization
PM	Pimenta de Mocambique
PRA	pest risk assessment
SANAS	South African National Accreditation Scheme
SPS	sanitary and phytosanitary
UKAS	United Kingdom Accreditation Scheme
UKROFS	United Kingdom Register of Organic Food Standards
USAID	United States Agency for International Development

Exchange rates

(March 2006)

Currency	To 1 USD	To 1 ZAR
Mozambican meticaïs (Mt)	24,000	3,999
United States dollar (USD)	-	0.17
South African rand (ZAR)	6.20	-

Introduction

The export of non-traditional agricultural products from Africa has the potential to contribute to economic growth and poverty reduction. This study is based on interviews with various government departments and agencies, small and large growers, input suppliers, exporters, processors and donor agencies, as well as on a covering of the relevant literature. It gives an overview of the changes taking place in the Mozambican horticulture subsector and how opportunities to trade with the larger markets within South Africa can be exploited. It explores the potential for strengthening exports of horticultural products from one African country, Mozambique, and possible measures in support of this sector. Within this context, the opportunities for small farmers to supply South African importers are evaluated. Meetings with South African supermarkets and importers as well as standards and sanitary and phytosanitary (SPS) bodies were also held to determine constraints facing Mozambican exporters. Some recent reports were also reviewed.² The fieldwork and literature review confirmed market opportunities and identified a number of technical issues that constrained farmers in Mozambique, particularly those from the family sector, from being able to supply South African supermarkets.

Countries of sub-Saharan Africa need assistance with the implementation of solutions to overcome the technical barriers to trade in order to realize their trading opportunities. South Africa is an obvious market for Mozambique but required technical standards are not always fully understood. In addition, the Mozambican horticultural sector operates under severe financial constraints and the cost of compliance constitutes a significant barrier.

Under a project on costs of compliance with sanitary and phytosanitary standards (and with partial funding from Finland), three national Workshops on Agri-food Safety and SPS for Tropical Fruits were held in 2005 in the United Republic of Tanzania (14–15 April), Mozambique (26–27 May) and Guinea (28–30 July). These national workshops presented a framework that facilitated quantification of the costs of compliance associated with agricultural safety and SPS standards.³ The follow-up project for Mozambique was launched in March 2006.

In addition to the national workshops mentioned above, earlier studies had also been commissioned by United States Agency for International Development (USAID), which identified the main obstacles to the economic growth of exports. In the case of agricultural exports, a number of specific recommendations to resolve a number of SPS issues were made (table 1).

This study sets out to explore trade opportunities existing in the South African market for Mozambican producers/exporters. The report reviews the recent history and current situation for horticultural production, exports and standards in

² In particular, two reports by TechnoServe – “Assessing the Competitiveness of the Horticultural Sector in the Beira Corridor – November 2003” and “Assessing the Competitiveness of the Horticultural Sector in Manica Province October 2003”. Also, the World Bank-commissioned Mozambique Horticulture Sector Development Study by G. Dixie, B. Bjerg, A. Sergeant (August 2005) provided considerable background information.

³ UNCTAD/ Division on International Trade in Goods and Services, and Commodities Activity Report 2005: Major outputs and lessons learned.

Mozambique. The ability of Mozambican producers/exporters to access the market competitively *and* comply with official and commercial standards imposed by South African supermarkets was evaluated. Currently, Mozambican exporters are finding it extremely difficult to access the South African supermarkets due their increasingly stringent technical requirements. Evaluating and understanding these problems will help identify follow-up activities that can be undertaken to enhance the capacity of the small-farmer sector and emergent producers to comply with the standards expected in South Africa. This report is written to support the grant application “Strategy to increase capacity to comply with retailers’ agri-food protocols to facilitate exports”. It is hoped that by addressing the issues constraining trade, it will facilitate small farmers in accessing the large distribution networks. An analysis of the governance strategies of fresh fruit and vegetable producers’ organizations in Mozambique necessary to turn them into efficient South African supermarket suppliers is included. Benefits for Mozambican producers to participate in the South African supermarket supply chain (remuneration, stability and security of transactions, volumes, insurance, assistance packages, credit, extension services, and even loan guarantees to upgrade the suppliers’ capacities) are possible.

The objectives of this report are the following:

- (a) Evaluate the opportunities for horticultural exports to South Africa – with special emphasis on the ability of the small farmer being able to supply supermarkets. However, consideration is also given to supplying informal (traditional) market channels.
- (b) Identify the support needed to allow the Mozambican farmers and exporters to comply with the requirements of the South African markets. The constraints, requirements, challenges and opportunities are highlighted.
- (c) Describe a strategy and develop an action plan to allow technical compliance to be undertaken within Mozambique. This must be appropriate and sustainable in the longer term. The responsibility for the steps in the action plan will be allocated between the public and private sector.

The focus of the study is on tropical fruit, including mangoes, papaya, bananas and citrus, with particular focus on grapefruit, air and road-freighted vegetables, and coconuts. These are products where Mozambique has a distinct comparative advantage.

The main market researched was for South Africa, but consideration is also given to other markets. For example, given the relatively high standards now being demanded in South Africa, targeting the European Union is also a distinct possibility, because standards in that market can also be achieved for relatively little extra effort.

Mozambican exports to South Africa will be most competitive in the areas near to their joint borders – but the study also looked at other areas where there were distinct climate advantages. The field tour started in Maputo – it is interesting to note that about half the existing export farms are clustered around one large dam in the Maputo corridor, but there are significant opportunities elsewhere. The capital costs of new start-ups are high because of the need to create on-farm infrastructure (e.g. dams,

roads and electricity connections). Besides the Maputo corridor, the Beira area – Quelimane and Chimoio – were also visited to evaluate their comparative advantages and assess export opportunities.

This report reviews technical constraints in the Mozambican horticultural export industry and identifies the best methods of addressing them. It is aimed at access to the South African produce market, in particular the supermarket chain, highlighting the supply process and how to target investment in Mozambique. This will detail the next steps that the Government and donors can take to help the country reach its potential.

Chapter one will briefly discuss the background and context of this study. Chapter two provides an overview of the current competitive position of horticultural exports to South Africa. In Chapter three, the current status of horticultural exports to South Africa and the potential for expansion are discussed. The issues that need to be addressed by small farmers to meet South African supermarkets' requirements are covered in chapter four. The last chapter includes a summary and conclusions.

Finally, some of the annexes cover the main SPS issues facing Mozambique, together with recommendations and programmes to achieve compliance. A number of family sector farmers were visited during the field research and a flavour of the challenges they face is given.

1 Background and context

1.1 Context

The standards that South African supermarkets expect to be met are continuously updated to reflect those set in the European Union and the United States. The significant horticultural trade from South Africa to these markets has established “world-class” standards in its farming community – and these are increasingly being adopted by the South African supermarkets. Having to comply with European Union and United States import requirements has had a profound impact on South African domestic horticultural standards, and these standards are now commonplace among the top food retail chains in the country. The overall objective is to provide the Mozambique Government and horticultural exporters with the technical and financial tools to take full advantage of horticultural export opportunities in South Africa.

Table 1. Recommendations on resolution of SPS issues in Mozambique

Objective	Recommended actions	Technical assistance needs	Local agencies/existing external support
Comply with SPS standards, to guarantee access to the international market.	Reorganize and strengthen Public Institutions responsible for SPS certification and hygiene standards (agri-business), publish and make available measures and help private sector comply with international hygiene and SPS standards.	Financial/technical assistance to: <ul style="list-style-type: none"> • Update national legislation to align with international accords; • Mount control systems for animal and plant diseases; • Train technical officers on SPS standards (e.g. IPPC, IOE⁴) and international quality requirements (e.g. CODEX⁵) and other current standards in major export markets (e.g. European Union, United States); and • Assist private sector in achieving quality standards (good agricultural practice) required by distributors in major world markets. 	MADER (DSV, DINAP, GPSCA, INNOQ, IPEX ⁶ , Ministry of Health)

Source: USAID (2004). *Removing Obstacles to Economic Growth in Mozambique, Volume 1, Executive Summary and Action Matrix*. December.

1.2 Market opportunities

The World Bank report by Dixie *et al.*⁷ noted that Mozambique has some good opportunities to expand its horticultural exports. This report estimated that if

⁴ International Plant Protection Convention, International Office of Epizootics.

⁵ Codex Alimentarius Commission.

⁶ Ministry of Agriculture and Rural Development (MADER), Department of Plant Health (DSV), Department of Livestock (DINAP), Office of Commercial Agricultural Sector Promotion (GPSCA), National Standards Organization of Mozambique (INNOQ), Export Promotion Institute (IPEX).

⁷ Dixie G, Bjerg B and Sergeant A (2005). *Mozambique Horticulture Sector Development*. The World Bank, August, Washington.

Government and donors make some significant commitment in resources, then Mozambique has the market opportunity to earn about \$27 million per year in the medium term mainly by exploiting opportunities in South Africa (\$20 million per year). In the longer term, export market opportunities are much larger and could exceed \$100 million per year, of which most will be in the Middle East (40 per cent), South Africa (30 per cent), Japan and India (20 per cent), and Europe (10 per cent). To achieve these levels of exports, a number of initiatives would need to be put in place and a range of issues would have to be addressed.

The South African market is showing strong growth and diversification in marketing channels. Road access, particularly from southern Mozambique, is good. There are distinct early-season opportunities for specific tropical and subtropical fruits. Banana exports will be in direct competition with South African growers, but the market has been growing (by 6 per cent per year) and production in South Africa is expected to decline. There are opportunities for crops such as squashes and melons, during the southern African winter and early summer (June to December).

Financial analysis and benchmarking of costs were undertaken by Dixie *et al.* for banana and mango exports to South Africa. These revealed that:

- These products would generate positive gross margins;
- The higher prices for early mangoes would give Mozambican farmers significantly more profit than South African growers; and
- The margins for grapefruit and bananas are broadly similar for both countries.

Currently, there are about 10 significant investments in horticultural exports, of which four are in production and exporting and six are in the establishment phase. A further four investments are being planned. The majority of these ventures are producing tropical fruit. A family sector honey-producing project was reviewed as part of this study but the SPS problems for access to the South African market are unique and require specific attention. Given the long lead time between investment and full-scale commercial production, it is doubtful if any of these investments are yet generating significant profits. Exports of horticultural produce from Mozambique were estimated at \$2 million in 2004, but increased significantly in 2005.

1.3 *The institutional and policy context*

In general, Mozambique has some good basic infrastructure for horticultural exports. There is excellent road access to South Africa and the ports have fresh produce-handling facilities. In addition, the future road development programme is likely to improve access from other key production areas. As mentioned above, half the existing export farms are clustered around one large dam in the Maputo corridor to take advantage of existing infrastructure in the form of water, roads, electricity connections and market access.

In recent years, bureaucratic delays and constraints have declined – it has become easier to set up businesses and trade in Mozambique. However, further improvements are still needed if Mozambique is to compete successfully with other countries. Other bureaucratic difficulties are the cost of registration of agrochemicals

given the modest existing market, which in the short term hinders the importation of urgently needed inputs (e.g. to control specific pests and diseases). A further issue is that the existing registrations and permitted uses in Mozambique do not necessarily ensure compliance with the permitted Maximum Residue Levels (MRL) set by the European Union.

Even though it has become easier to set up businesses and trade in Mozambique in recent years, it still lags behind most other countries in the World Bank's "Survey of Doing Business". This survey ranks 155 countries and is calculated as an average of 10 topics associated with doing business. In this survey,⁸ Mozambique comes in 110th, which is lower than Malawi (94th), Zambia (67th), Kenya (68th) and South Africa (28th) – but it is better than Zimbabwe (126th), Angola (135th) and the United Republic of Tanzania (140th).

The constraint that is specifically addressed within this report is the SPS requirements of the South African market. Within this context, compliance with SPS standards is regarded as problematic because of the lack of technical knowledge about them. International SPS standards and especially those required by the European legislation often appear to be quite complex. However, this is because of lack of experience in how to implement certain requirements. In addition to these requirements, large European buyers (i.e. the main European Union supermarkets) have developed their own protocols which they now impose on their suppliers. These standards are, in fact, often a strict interpretation of the SPS requirements of national and international legislation, including CODEX. They embody the requirements of good agriculture and manufacturing practice and also of Hazard Analysis and Critical Control Point (HACCP) principles, but often set much higher standards.

Given that trade to the European Union in agricultural goods is dominated by these large supermarket buyers, producers wishing to access foreign markets have to be able comply with the standards defined or accepted by them – or simply become suppliers to small, low-value niche markets. For these reasons, it is necessary to improve compliance with the private commercial standard EUREPGAP and with the European Union Organic standard.

There is considerable misunderstanding about EUREPGAP and organic standards and requirements in both the public and some private authorities in Mozambique. It is widely believed that these are very complicated and costly standards to meet. In fact, it is not as difficult or costly to attain these standards as many people believe. Therefore, it is necessary to equip the appropriate officials and technicians (both public and private) with the knowledge and skills necessary to assist producers seeking compliance with international standards and to increase the country's long-term certification capability by training.

⁸ <http://www.doingbusiness.org>.

2 Competitive position of Mozambique for horticultural exports

This chapter reviews and updates earlier studies on the role, both potential and actual, that the market for horticultural produce in South Africa can play in developing this sector in Mozambique. The following chapter focuses on the current status of the South African horticultural market and also provides an analysis of some current and future opportunities for exports.

Previous studies have covered some of the disadvantages and problems experienced by Mozambican horticulture in some detail, together with suggested strategies to resolve some of them. A summary of the horticultural export opportunities for Mozambique in the South African market are summarized in table 2. All of them would be enhanced by addressing SPS issues. The second half of this chapter reviews export opportunities as identified in previous studies on Mozambican horticulture. Newer opportunities are discussed in chapter 4.

Mozambique's key comparative advantage revolves around its tropical climate – it is the most important factor that determines the potential for horticultural crops. Much of Mozambique is defined as having a tropical climate with summer rainfall. Therefore, large areas of the coastal belt of Mozambique are very well suited to the production of tropical crops, e.g. bananas, pineapples, melons and certain citrus. Mozambique's tropical climate confers distinct comparative advantages in the South African market. The nearest tropical climate to South Africa is Mozambique. The provinces of Maputo, Gaza, Inhambane, Beira and Manica are sufficiently close to facilitate logistical supply to the main South African markets. Compared to South Africa, Mozambique's climate should give yield advantages with crops such as bananas and it will enable production of good quality pineapples throughout the year. In addition, the warmer winters in Mozambique will give an opportunity to grow some annual crops that cannot be produced at the same time in South Africa, e.g. peppers, butternut and other squashes. Tropical fruits that have distinct production seasons, e.g. mangoes and litchi, could also have distinct market opportunities in South Africa and, indeed, further afield. Both mangoes and litchi mature earlier in Mozambique than in South Africa.

Because even the most northerly and warmest parts of South Africa are still only subtropical, seasonality of supply of most produce is a significant factor in South African horticultural marketing. The southern third of Mozambique, though technically a tropical climate, is somewhat transitional in terms of night temperatures, so that there are problems with mid-winter vegetable production. This, coupled with reduced dry matter accumulation due to short days and high relative humidity, especially along the coast, means that the advantage is not as great as it might be. However, it is still significant and there are a number of good opportunities that are worth exploring.

Table 2. Summary of Mozambique's comparative position for a range of products in different markets

Crop	Market	Competition	Advantages	Disadvantages	Comments
Banana	South Africa	South Africa – farmers	Climate – good yields	Higher transport and packaging costs	Some foreign direct investment in place, volumes will expand
Mango	South Africa	South Africa – farmers	Climate – seasonality	Higher transport and packaging costs	Climate creates niche opportunity
	Middle East	Brazil/Australia	Counter to main supply season	Long-term programme needed to test varieties	Real opportunity is to grow preferred varieties and therefore create competitive advantage
Pineapple	South Africa	South Africa – farmers	Climate – in South Africa winter	Higher transport costs	If improved varieties grown, should have good opportunity for year-round production
Litchi	South Africa		Climate – seasonality		Good, but limited niche opportunity
	European Union	Madagascar	Climate – seasonality		Good niche opportunity
	Asia		Climate – seasonality	Higher transport costs	Good niche opportunity – but need Asian varieties
Citrus	European Union	South Africa farmers	Grapefruit quality	Higher cost structure	South Africa has economies of scale advantage
	Middle East	South Africa farmers	Fruit quality	Higher cost structure	Good opportunity for lemons, limes, oranges and easy-peelers, but careful marketing support needed
Off-season vegetables, especially yams, sweet potatoes, cucurbits	South Africa	South Africa	Climate – warmer winters	Transport/packaging costs – maybe quality	Need good marketing chain, but represents an interesting opportunity
Coconuts	South Africa	None	Poor quality currently in South Africa	Transport/packaging costs – maybe quality	Needs to be developed carefully
Processed coconuts	UK	None	Never done before – could be a huge market	Never done before – high chance of failure	Have to be processed in South Africa

2.1 *Infrastructure*

Road access to the South African markets and to Harare airport is satisfactory. The planned road improvement programme will benefit the Chimoio–Beira road. However, the flooding on this road is an intractable problem and likely to be hugely expensive to solve. Flooding is an occasional problem; in only two to three weeks over the last 150 weeks has the road been impassable. During these times, it would be possible for horticultural export managers to re-route their product using the railway. Mozambique's key comparative advantage over many other African countries trying to develop horticultural exports is that it has access to the sea, and at least two of its ports (Beira and Maputo) have the facilities to hold and handle fresh produce, both for refrigerated vessels and in containers. During the citrus season (May to September) some 25–30 refrigerated vessels stop at Maputo on their way to Europe, the Middle East or South-East Asia. Mozambique is following a process of privatizing its ports. Both Beira and Maputo ports already have in place the basic facilities for handling fresh produce by sea (e.g. cool storage), and plug-in points for refrigerated containers.

Beira Port has a problem in that the Government is not maintaining the dredging of the channels needed to allow large ships, such as full-scale container vessels, to access the port. Consequently, refrigerated containers have to be trans-shipped, adding significantly to costs and transport times. If horticultural exports via containers are to expand from Beira, the Government has to fulfil its commitment to the dredging of the access channels. Refrigerated containers have to be trans-shipped to Durban or Dar es Salaam, thereby extending shipping times. Freight rates for refrigerated containers are highly dependent on the critical mass moved and the placement of refrigerated containers. Benchmark figures for refrigerated containers are \$4,500 to \$5,000 per 40-foot container, which will in general carry 20 pallets of produce, each with a net weight of some 750 kg, i.e. \$0.33 per kg.

Most horticultural export crops require irrigation. The majority of investments in Maputo area are built around existing dams (i.e. exploiting water resources developed through previous government investment programmes). Investment infrastructure is a major cost for new commercial farmers. There are, however, a number of defunct or underutilized irrigation schemes, which could be well suited for family sector farmers. In addition, some grant funding is being considered for providing irrigation facilities for smaller-scale producers, most notably in Manica Province. Currently, water for irrigation is charged at a fixed tariff of 40 Meticaís per cubic metre. New legislation is being considered to establish two tariffs, one for the provision of water without existing infrastructure and a higher rate for when water is accessed from an existing infrastructure, e.g. a dam. Diesel systems are a very temporary solution and are not viable except in the very short term.

2.2 *Labour*

The cost of labour is only a small part of the carriage and freight costs of most potential horticultural exports from Mozambique. One exception is paprika, where it is estimated that labour accounts for between 33 per cent and 66 per cent of the FOB value. It is often reported that Mozambique is a low-labour cost country. The TechnoServe report notes that its labour rates are similar to Zambia (\$1 per day), less than Kenya (\$1.50 per day) and much less than South Africa (at just over \$3 per day).

These data oversimplify the issues. Most exporters in Kenya and South Africa pay higher daily wage rates and remain competitive because their labour is much more experienced and productive.

The key issue is not the actual daily wage rates, but the productivity. Productivity is improved through experience and some of the countries Mozambique competes with have many more years of commercial horticultural production. It is reported that workers on Mozambique horticultural farms were about half as productive as counterparts in Zimbabwe and South Africa, although they became much more efficient as they accumulated experience and benefited from internal training programmes. Therefore, Mozambique's labour cost advantage is eroded by the combination of lower outputs, increasing minimum wages (now reaching about USD 1.5/day) and highly protective labour laws.

2.3 *Land issues*

Compared to South Africa, Mozambique appears to be an increasingly attractive location for foreign direct investment (FDI) in agriculture, especially for tropical fruit production. Leasing land in Mozambique is appreciably cheaper than buying land, especially land with access to irrigation. In addition, land claims and the likely impact of the Agri BEE and BBBEE⁹ legislation creates uncertainty and is pushing some growers to consider shifting production to Mozambique.

2.4 *The family farming sector*

The European Union's demand for traceability and strict control over agro-chemical usage has restricted the role of family sector vegetable producers as export growers. Many crops can only be grown by the most skilled managers coupled with high capital investment (e.g. cut flowers, most citrus crops). The family farming sector has an advantage with the less perishable and labour-intensive crops (e.g. paprika, chilies and cashew nuts).

The family farming sector will be only slightly less disadvantaged when supplying markets that are less demanding with respect to quality and food safety (e.g. local, South African out-of-season production). Efforts should be made to reduce the risks for small-scale producers, especially when new crops or markets are being developed. This can be achieved if commercial farmers and export businesses are the primary risk-takers and create the critical mass, develop the technology and establish marketing chains. Involvement of the family farming sector will be enhanced if support is given to those exporters/agribusinesses intending to source product from out-growers.

With some support, particularly in terms of market linkages, crop development could lead to crops such as paprika, chilies, pineapples, squashes, mangoes, litchi, limes and easy-peeling citrus being produced by the family farming sector. The family farm sector's involvement in the horticultural export industry needs to be actively

⁹ Agricultural Black Economic Empowerment (Agri BEE) and draft proposals on Broad Based Black Economic Empowerment (BBBEE) are currently being debated in South Africa. The aim of the proposed legislation is to increase ownership and participation of blacks in the South African agricultural sector.

promoted, with special emphasis on the more easily accessible markets, agronomic research of suitable smaller scale farmer crops and support for the development of agribusiness–family farmer linkages. In particular, those crops with less critical post-harvest requirements could be targeted for development.

2.5 *Market opportunities*¹⁰

South Africa represents an accessible market within the same Customs Union and is a major economy in itself. Within South Africa, the market opportunities can be conveniently divided into two – supplying the internal South African market and supplying the major South African-based export companies.

The South African market for agricultural products is growing at rates of between 0.24 and 0.37 per cent.¹¹ However, the gross figures hide what is a dynamic market for fresh produce, which is growing at over 20 per cent annually at the top end retail sector and showing healthy annual growth among “low-end” retailers of 7 per cent. In common with many developing countries, there is an increased demand for “all-year-round” supply, a more exotic range of produce; the supermarkets are becoming more powerful, with evidence to suggest that they are encroaching on the informal trading sector.¹²

While supermarkets set very high standards for both quality and traceability, they represent a relatively stable market opportunity with much less fluctuation in prices than observed in the traditional markets. In particular, there are some products, e.g. bananas, where Mozambique could supply both market channels, where South Africa is a major and expanding market, but already with some significant supply shortages in late winter or early spring. This is one of the biggest opportunities for Mozambican exporters.

Examples of supplying South African-based export operations include fresh produce exporters looking to Mozambique to extend their season or product portfolio, and within the expanding fresh cut sector (e.g. fresh fruit salads, semi-prepared vegetables) companies have to contend with South Africa’s seasonal supply patterns and look to Mozambique to be able to extend and/or enhance existing seasonal supply patterns.

¹⁰ The subject is covered in some detail in chapters 3 and 4.

¹¹ *Source:* STATS-SA Quarterly GDP by industry at constant 1995 prices (R million) by year quarter and industry.

¹² *Source:* “Fastmoving” website on data and trends in the South African retail sector.

3 The current status of the South African horticultural market

3.1 Introduction

South Africa is a net exporter of agricultural products. The country is more than self-sufficient in the food production industry, with the exceptions of wheat, oilseeds and rice.¹³ Net exports of agricultural products constitute some 22 per cent of the 2004 sector's contribution to gross domestic product (GDP), compared to 15.5 per cent in 1994.¹⁴ Horticultural fresh produce accounts for approximately 3.7 per cent of South African GDP and has a current export value of R8 billion. In support of these exports, a range of food-related standards, including ISO 9000:2000, South African National Standard (SANS) 10330:1999, HACCP and European Good Agricultural Practices (EUREPGAP), are offered to companies wishing to export fruit and vegetables to Europe.

EUREPGAP certification has shown a year-on-year growth of 52 per cent as South African food exporters have started to realize the importance of certification in accessing European and, increasingly, domestic markets. The scope of certification was also extended to include certifications such as that of the BRC to ensure continued horticultural exports to South Africa's greatest trading partner, the United Kingdom.¹⁵

South African farmers and manufacturers are becoming increasingly responsive to food safety issues. As South African supermarkets and food distributors continue to integrate their food supply chains, they are able to better provide traceability/accountability services for consumers. This is especially important in order to satisfy export market demands. However, food safety has a much lower profile in South Africa than in the United States or Europe, perhaps due to fewer incidents or due to problems in identifying food safety problems. In 2002, South Africa approved a set of food safety regulations that embrace the important principles of HACCP and follow the Codex Alimentarius model. Under this regulation, exports to South Africa must meet the same food safety standards as apply to South African food producers. The South Africa Consumer Goods Council also created a Unified Food Standards Body in April 2005 that is similar to that of the European Union. This has been established to unify the activities and actions related to food safety by the private sector, Government, academic institutions and consumers, and it is hoped that the new governing body will clarify food regulations and standards.¹⁶

Multinational supermarket chains often have a single set of quality and safety standards for fresh produce, based on the standards in their home market. For farmers who can make the grade, entering the supply chain can bring them a reliable and profitable market for their goods, and even a foothold in the global marketplace. The distinction between the export market and local market is disappearing, e.g. both major

¹³ Leister AM (2005). South Africa, Republic of, Exporter Guide Annual Report 2005. USDA Foreign Agricultural Service GAIN Report Global Agriculture Information Network.

¹⁴ Development Report 2005 – Overcoming Underdevelopment in South Africa's Second Economy. Chapter 7. Agriculture in South Africa's second economy.

¹⁵ SABS Home Page Accessed April 2006.

¹⁶ Ntloedibe M (2005). South Africa, Republic of, Retail Food Sector. Retail Food Sector Report 2005. USDA Foreign Agricultural Service GAIN Report Global Agriculture Information Network.

supermarket chains in South Africa require certification by the same laboratories that certify for export.¹⁷

3.2 *South African trade with agricultural products*

South Africa's agricultural exports for 2004 reached a total of \$4.5 billion,¹⁸ up from \$4.0 billion in 2003. South Africa's five largest export destinations were the United Kingdom (\$562 million), Japan (\$487 million), the Netherlands (\$437 million), Italy (\$222 million) and the United States (\$202 million). South Africa's most important exports to the United States are fresh citrus, wine, tree nuts, fruit juice, lobster, non-coniferous wood chips and value added wood products.

South Africa's total agricultural imports for 2004 rose to \$2.9 billion from \$2.1 billion in 2003. The leading suppliers were Argentina (\$455 million), Brazil (\$284 million), the United States (\$240 million), Thailand (\$197 million), and Malaysia (\$162 million). South Africa's major imported agricultural commodities from the United States in 2004 were wheat, coarse grains, other prepared foods such as frozen and canned vegetables, other intermediate agricultural products, hardwood lumber, and hides and skins.

3.3 *South African supermarkets*

3.3.1 *The situation in general*

South Africa has (a) highly sophisticated retail chain supermarkets such as Shoprite-Checkers, Pick and Pay, Spar and Woolworth's; (b) wholesale outlets such as Makro, Metro, Trade Center, and Cash & Carry; (c) independent stores such as the Biforce Group, Bargain Group and Shield Wholesalers; (d) convenience chain stores including forecourts (gas stations with convenience type stores); and (e) traditional stores, including independent stores such as general dealers, cafes, spaza shops, street vendors, hawkers, tuck shops and primitive little street corner stalls at the other end of the retail sector. The South African food and beverage market is becoming increasingly sophisticated and is supplied by both local and imported products. According to ACNielsen Research, currently 54 per cent of retail sales occur in the major supermarkets chains Shoprite, Pick and Pay, Spar and Woolworth's. It is predicted that this figure will reach 60 per cent in 2008, which is in line with global trends. The food retail sector continues to expand, while supermarkets, convenience stores and forecourts are rapidly becoming the dominant food retail outlets. A boom in the franchise sector, convenience stores and forecourts, which are good venues for imported products, provide better access and convenience for the consumers.

South Africa offers a range of outlets, agents and distributors. Changing consumer behaviour is reflected in the spectrum of business choices, such as emerging hypermarkets, which are being developed to meet changing consumer needs. The development of hypermarkets has been a recent phenomenon in South Africa. These hypermarkets are located in shopping centres and sell large quantities of many

¹⁷ Brown, Oil. 2005. Supermarket Buying Power, Global Commodity Chains and Smallholder Farmers in the Developing World. Human Development Report 2005.

¹⁸ Data on exports and imports are those of the Department of Trade and Industry of the Ministry of Trade and Industry of South Africa.

consumer goods on a self-serve basis. The traditional distribution method has been upset because the hypermarkets buy from manufacturers, bypassing wholesalers. They achieve high turnovers and put pressure on their competition.¹⁹

Market surveys have repeatedly shown that price sensitivity rules consumer behaviour. South African industry leaders concur with a current ACNielsen study that supports this conclusion, stating that price, above other factors such as quality or appearance, is the primary factor in selecting a product. However, an interesting idiosyncrasy of the South African market is that price may be less of a factor in townships, where consumers often show significant brand loyalty for certain branded items.

South Africa's major supermarket chains, for the most part, offer much the same range of products and brands. Gaining a competitive edge through image and service is their major preoccupation. The retailers work hard at establishing their own particular appeal. Some, such as Woolworth's and Spar, do this by targeting a particular shopping group, such as upper income groups. Others, such as Pick and Pay and Shoprite-Checkers, go head-to-head more on price and "shopping experience". One common characteristic among these retail groups is enormous bargaining power. They are all able to dictate their buying terms to suppliers who are expected to deliver products to central depots or warehouses, where the products are then distributed to supermarkets and retail outlet stores. Shoprite-Checkers and Spar, for example, are very strong in the black areas (townships) whereas Woolworth's is stronger in the smaller "up-market" segment. Most supermarkets sell their own-label products as well as manufacturers' brands.

3.3.2 Information about the main retailing companies

The Pick and Pay Group has been one of Africa's largest retailers of food, clothing and general merchandise for the past three decades. Pick and Pay has about 40 per cent of the South African retail food sector. The group operates through three divisions – the Retail Division, the Group Enterprises Division and Franklins Australia – each with its own managing director and management boards. The Retail Division manages Pick and Pay-branded businesses such as food, clothing and general merchandise in hypermarkets, supermarkets, family franchise stores, mini market franchise, clothing, butcheries, meat centres, home shopping, and gas centres. The Group Enterprises Division operates the group's other non-Pick and Pay-branded group activities, including Score Supermarkets, TM Supermarkets, property franchises, Go Banking, as well as finding new investment opportunities for the group worldwide. Pick and Pay has a total of 420 stores, including 15 hypermarkets, 115 supermarkets, 99 family stores, three ritevalu, 38 mini market franchise, 21 Boardmans, 116 Score Supermarkets, three Score Supermarkets Franchises, and 10 Pick and Pay Auto Centres. According to the research by M+M Planet Retail, in 2003 Pick and Pay was ranked number two of the top 10 retailers in Africa and the Middle East, with net sales of \$3.3 billion and a market share of 4.5 per cent. The net sales only reflect the retailer's shareholdings in the countries where they operate. The emphasis of the supermarket division is on total convenience and freshness, with stores aiming to add value through the fresh food supply chain. Traditionally, Pick

¹⁹ Canadian Government (2003). Market Information – Africa and the Middle East. South Africa – Agri-Food Country Profile.

and Pay Score supermarkets have had a presence in townships when other retailers have stayed away. Pick and Pay is the most modest of the high-end supermarket chains.

Shoprite Holdings has about 40 per cent of the market and is comprised of the following entities: the Shoprite Checkers supermarket group, which consists of 252 Shoprite supermarkets, 85 Checkers Supermarkets, 23 OK Foods, 36 OK Grocer, 132 OK Furniture outlets, 22 Checkers Hypers, 43 Usave Supermarkets, 22 House and Home stores, and 37 Hungry Lion fast food outlets. Through its OK Franchise Division, the group procures and distributes merchandise to 28 OK MiniMark convenience stores, three 8-till Late outlets, 64 Megasave wholesale stores, and 94 Sentra Stores. Checkers Hypers have a special section devoted entirely to imported foods as well as kosher and halal sections. Among South African retailers, Shoprite has the highest number of stores in neighbouring Southern and Eastern African countries. According to the research by M+M Planet Retail, in 2003 Shoprite was ranked number one of the top 10 retailers in Africa and the Middle East, with net sales of \$3.5 billion and a market share of 4.7 per cent. The net sales only reflect the retailer's shareholdings in the countries where they operate. It has a policy of careful expansion outside South Africa, according to local conditions, including political stability. For instance, it recently purchased seven supermarkets under Zambia's privatization program.²⁰

Woolworth's Holdings Limited is a South African-based retail group that operates locally and internationally through two subsidiaries. Woolworth's (Proprietary) Limited operates and franchises stores in South Africa, Africa and the Middle East; and Country Road Limited, listed on the Australian Stock Exchange, operates in Australia, New Zealand and Singapore. Woolworth's offers select ranges of apparel, cosmetics, toiletries, footwear, jewellery and food under its own brand name. Woolworth's has 237 stores, including 111 owned Woolworth's, 82 franchised Woolworth's, and 44 owned and franchised country road outlets.

Woolworth's caters to the wealthiest South African consumers. It carries a relatively small number of branded products, instead promoting their own Woolworth's branded private labelled products. For many products, Woolworth's only offers two choices, the leading brand-name product and Woolworth's own private label. Price points are slightly higher than Checkers and Pick and Pay but relatively comparable to similar retail markets in the United States. According to Wendy Hall of Business Day, during 2004/05 Woolworth's opened a number of forecourt convenience food stores in partnership with Engen Gas Station to make inroads into the ZAR 4 billion (\$0.6 billion) 24-hour convenience retail market, which is growing at about 16 per cent a year. The chain store plans to open at least 24 more by the end of 2008. According to I-Net Bridge, in 2004 three different cards (a store charge card, a cash card and a Visa card) coupled with stores were launched to boost sales and improve customer relations.

According to the research by M+M Planet Retail²¹ in 2003 Woolworth's (South Africa) was ranked number six of the top 10 retailers in Africa and the Middle

²⁰ Reardon T, Berdegué JA and Farrington J (2002). Supermarkets and Farming in Latin America: Pointing Directions for Elsewhere? Natural Resource perspectives, number 81.

²¹ www.planetretail.net.

East, with net sales of \$1.4 billion and a market share of 1.8 per cent. The net sales only reflect the retailer's shareholdings in the countries where they operate.

The Spar organization is made up of two types of members: Spar Retailers, who are independent store owners, and Spar Distribution Centres, which provide leadership and services to the Spar Retail members. Both members belong to the Spar Guild of Southern Africa, a non-profit company set up to coordinate and develop Spar in Southern Africa. The members pay subscriptions to the Guild, which uses these monies to advertise and promote Spar. The Spar grocery chain emerged in the 1963 when a group of eight wholesalers was granted exclusive rights to the Spar name in South Africa to service 500 small retailers. A number of mergers and takeovers followed, and today all but one of the wholesalers are owned by Spar Group Limited, which operates six distribution centres that supply goods and services to 755 Spar Stores in South Africa, comprised of 102 Superspar, 474 Spar, and 188 Kwikspar. All stores are independently owned, and many of the purchasing decisions are made at the individual store level. Spar targets high-income consumers and locates its stores in more up-market neighbourhoods. According to the research by M+M Planet Retail, in 2003 Spar (South Africa) was ranked number seven of the top 10 retailers in Africa and the Middle East, with net sales of \$1.3 billion and a market share of 1.8 per cent. The net sales only reflect the retailer's shareholdings in the countries where they operate.

3.3.3 Traditional markets

Food retailers in South Africa range from highly sophisticated supermarkets at one end to primitive little street corner stalls at the other. Previously, predominantly black townships were virtually unserved in terms of retail infrastructure. The informal retail sector in South Africa is increasingly recognized by manufacturers and wholesalers as an important delivery channel of goods to consumers. Informal market retailers cater to the needs of the residents via independent grocery stores such as cafes, general dealer stores and several informal South African retail concepts (tuck shops, shebeens, taverns and spazas), including hawkers (street vendors). With the end of apartheid, major retailers have extended their services to these townships as well, but spaza shops are making their presence felt. Marketeers saw the spaza as the beginning of a new form of township convenience retailing, conveniently close to consumers, and open for extended hours. Spaza shops are defined as small retail enterprises operating from a residential stand or home, engaged in the trading of consumer goods. Spaza shops operating mainly in the townships are making their presence felt in the local retail market.

The informal retail market in South Africa is an important player, with an estimated turnover of R34 billion (\$5 billion). The informal sector is acknowledged as an important delivery channel of goods to customers. However, the view is held that this sector may have peaked, as more formal shopping centres are being developed in disadvantaged areas. Currently, more stores are trading seven days a week, creating a greater opportunity to reach shoppers. Also, Sunday trading is becoming increasingly important as the trend towards convenience continues. Month-end shopping remains extremely significant.

On average, start-up investment for spaza shops amounts to less than \$1,000, mainly financed by private savings or loans from relatives or friends. Average employment amounts to almost three employees per business. Considering that the number of spazas may amount to more than 100,000, this sector of the national economy could be providing between 230,000 and 290,000 jobs, and supporting more than a million people. The most important products sold by spaza shops are (in descending order): soft drinks, cigarettes, paraffin, candles, maize meal, alcoholic beverages, bread and sugar. There is growing awareness among manufacturers and producers of the importance of the spaza retailers as a marketing channel. More than 20 per cent of spaza owners report that products such as soft drinks, dairy and bakery products are now delivered to their shops. The most serious problems encountered by spaza owners are shortage of trading stock/finance (38.8 per cent), high levels of crime and robbery (25 per cent), severe competition (20.6 per cent), expensive transport (19.7 per cent), and bad debt or the granting of too much credit (17.1 per cent). Although spaza retailers are often seen as survivalist enterprises, it is clear they are becoming not only a permanent phenomenon on the South African economic scene, but more sophisticated and closely linked to the rest of the economy than commonly perceived.

3.3.4 Changing procurement systems

Procurement has shifted away from reliance on the traditional wholesale markets for fresh produce towards the use of specialized wholesalers dedicated to supermarkets. Supermarkets have different procurement systems for fresh fruits and vegetables. Most supermarkets prefer to buy from large-scale farmers and processors where quality and large continuous supply of products is assured.²² Procurement has been consolidated through the use of centralized distribution centres. There is increasing chain coordination through the issuing of contracts to wholesalers and growers, requiring high standards and demanding certification, and also offering delayed payments (typically 45–60 days after product delivery).

New types of suppliers serving supermarkets tend to be specialized wholesalers accustomed to large volumes and meeting quality standards. An increase in the scale of procurement is driven by supermarket expansion. In general, this prompts new investment by suppliers, which is expensive but generally perceived as worthwhile if a supplier can get on a supermarket's procurement list.

Product attributes are usually managed and guided by grades and standards, which are implemented either by public authorities or by private companies themselves. Except for products produced for the export market, grades and standards in the domestic market are poorly developed.

The enforcement of grades and standards varies according to the product. For products that are exported – such as baby corn, mangetout, snap beans etc. – high quality (colour, shape, etc.) and standards (EUREPGAP) are adhered to. Companies such as Agriflora and York Farm in Zambia ensure that they and other small-scale and medium out-grower farmers meet these standards. Supermarkets enforce standards by rejecting products that fail to satisfy the grades and standards that have been set.

²² South African local country studies, 2004.

3.3.5 Producers and processors

If Southern African producers are unable to supply the full needs of the processors, or if processors are uncertain about South African supplies, they will again look to foreign sources. South African suppliers, on the other hand, will look to the export market in the event that domestic processors are unwilling to pay them the prevailing market price. In this manner, the market sets a “natural” floor and ceiling price, i.e. a price band, within which such products trade. The mechanism by which these prices are set is the Agricultural Markets Division of the South African Futures Exchange.²³

3.3.6 Market information

Most international markets have been running at very low inflation rates for the past decade, which means prices have not really increased. Global volumes are continuing to increase, which, coupled with buying power falling mostly into the hands of the supermarket giants, is putting pressure on international selling prices. Therefore, in reality, foreign exchange prices have not increased over the past eight years. With the sustained strength of the rand, this means that at current levels the rand selling prices are similar to what they were eight years ago. On the cost side, however, global demand for shipping, mainly from China, has pushed shipping costs to more than double what they were a few years ago. Added to this is the fact that South Africa’s compounded inflation over the past eight years has also increased production and packaging costs by about 50 per cent. This has, in normal circumstances, put margins under extreme pressure, to the point that in a year like this most producers will suffer extreme losses. Analysts believe that, as an international industry, South Africa is in for tough times as global volumes continue to grow, and costs continue to rise without a reciprocal inflationary weakening in the currency. As a result, the laws of supply and demand will ultimately stabilize the industry and, in the meantime, the strongest will survive.

The South African fruit industry had a record year in 2002 due to the devaluation of the rand against most currencies, good supply and a low supply to Europe from competing countries. South Africa predominantly exports to the European Union. In 2003 and 2004, the dollar depreciated against the euro. With the dollar depreciation, South America perceived a better opportunity in Europe and increased supply significantly to this market. South Africa competed for market share with South America’s fruit in Europe in 2003/04. From 2003 to 2005, the market grew progressively worse, with 2005 being very difficult. The 2005 season witnessed a crash in the European market due to significant oversupply of fruit from around the world.²⁴

The South African avocado industry has worked closely with other producing countries, such as Israel, Spain, Kenya and Mexico, to coordinate export volumes into Europe. The South African mango is being used increasingly for juice, atchar and

²³ Vink N and Kirsten K (2002). Pricing Behaviour in the South African Food and Agricultural Sector. A report commissioned by the National Treasury and conducted with additional technical support from the National Departments of Agriculture, Trade and Industries and the Competition Commission. Final report.

²⁴ Da Luz M (2005). An Export Perspective of the Fruit Industry in South Africa. Economic Researcher. Credit Guarantee Insurance Corporation.

dried mango-processing industries. Exports of whole fresh mangoes continue while significant work is being done on some of the factors influencing export quality, such as prevention of sunburn, the reduction of lenticel damage, the lengthening of the storage period and appropriate external colouring in the orchard and ripening periods. South Africa produces two types of pineapples – the Cayenne and Queen varieties. With the Cayenne pineapple, virtually the entire crop is used locally for processing purposes. However, Queen pineapples are air freighted from South Africa to Europe in small quantities. Baby pineapples also find their way to the Middle East and the Far East.

3.3.7 Agricultural standards

The Directorate of Plant Health and Quality, with the National Department of Agriculture, is responsible for setting standards for certain agricultural and agriculture-related products. This includes aspects such as composition, quality, packaging, marketing and labelling, as well as physical, physiological, chemical and microbiological analyses. These standards are published in the Agricultural Product Standards Amendment Act of 1998 and the Liquor Products Act of 1989 as regulations for products to be sold on the local market and in the form of standards and requirements for products intended for export.

United States horticultural producers have complained about various South African SPS barriers on the importation of apples, cherries and pears from the United States. They estimate that, if these barriers were removed, United States exports of each of these fruits could increase by \$5 million to \$25 million in annual sales to South Africa. United States producers have also expressed concern about unnecessary SPS requirements for some grains, pork, poultry and horticultural products. In order to fulfil South Africa's commitment under the WTO Marrakesh Agreement on market access, the National Department of Agriculture published the rules and procedures regarding the application for market access permits for agricultural products on 24 October 2003. The permits will be issued to importers registered with the South African Revenue Service (SARS) and the Department of Trade and Industry (DTI) for importation of the agricultural products listed in the Table of Import Arrangement.²⁵

²⁵ South African Trade Summary 2003.

4 Product opportunities

4.1 Recent developments of Mozambican horticultural exports

It is estimated that the value of horticultural exports more than doubled between 2004 and 2005, but there is some concern over the accuracy of the basic data (table 3). Whilst this is encouraging, it is about \$1.6 million less than what was being projected in mid-2005. Estimates based on exporters' projections tend to be overly optimistic, especially in a fledgling industry.

Table 3. Estimated Mozambican horticultural exports 2000 to 2005 (\$)

	2000	2001	2002	2003	2004	2005
Banana	0	0	0	0	500 000	3 000 000
Citrus	700 000	370 000	0	50 000	150 000	300 000
Mango	0	0	0	60 000	120 000	60 000
Vegetables					45 000	100 000
Flowers				200 000	250 000	0
Paprika				50 000	750 000	1 000 000
Totals	700 000	370 000	0	360 000	1 815 000	4 460 000

Sources: European Union stat, South Africa import data and consultant's estimates.

It is not the intention here to review in any detail the previous reports on horticultural exports. However, some of the reasons for the slow development of the sector are reviewed and some new opportunities more suitable for extension to the family sector are outlined in this chapter.

4.2 EAM Mango

Mike Scott (EAM) Mango had a very poor season in 2005 – it harvested less than half the mangoes exported during 2004. There appear to be two reasons for this, namely:

There was a shortage of irrigation water. A large increase in plantings in 2004/05 meant that some of the existing trees in the established fruiting orchards were short of water at critical growth stages.

The cool dry season of June to August was unusually warm and this may have reduced the flowering and fruit set (figure 1).

Significant lessons can be learned from the experience of EAM. Many growers that have set up their farms away from electrical reticulation are suffering from excessively high irrigation costs (figure 2). For example, EAM has to transport diesel to the farm by a pickup truck in 500-litre consignments, a round trip of at least 200 km. This cost and logistical issues with using diesel were reiterated a number of times during the field mission. For example, Vanduzi noted that it is reluctant to issue contracts to growers relying on diesel because it is worried about the profitability.

The climate, while giving mango production in Mozambique a comparative advantage because of seasonality, can cause some problems. It is significantly more

tropical than either South Africa or Zimbabwe, and higher-than-normal winter temperatures will sometimes adversely affect subtropical and temperate crops (e.g. mangoes and peas). The mango tree needs a warm tropical summer for foliage and fruit growth, with a temperature range from 25 to 30°C. Commercial mango is limited by climates where the conditions are wet and humid during flowering but physiologically require a cool and dry autumn and/or winter to initiate flowering in mid to late winter or early spring. Whatever the reason for the poor fruit set in 2005, it reinforces that the Mozambique horticultural export industry is still in its infancy and that it is not backed up by locally-based research.

EAM has instigated family sector participation by establishing an out-growers scheme. However, this has only recently been instigated; hence, the certification needed to open up all the export opportunities for South Africa is several years away. Not many details are available, but it is an indication that large commercial investments can be used as a catalyst for helping small farmers get into the export market.

The infrastructure at EAM is variable and currently poses some constraints. The pack-house has only recently been constructed, but without electricity it is primarily a sorting (grading) shed. Currently, the mangoes are loaded into a

Figure 1. Poor fruit set at EAM – October 2005



Figure 2. Diesel-based irrigation at EAM



refrigerated truck at field temperature and transported directly to South Africa. Because of the shortage of fruit in South Africa at that time of year, the ripening/softening in transit is actually desirable because it is ripe and ready to eat several days sooner. With low supply in the market at that period of the year, fruit is in high demand and is consumed quickly.

4.3 CITRUM

Paulo and Alex Negrão are two of the most dynamic horticultural entrepreneurs in Mozambique. Their enterprise is based close to the Maputo Corridor alongside and below the *Baragem de Pequinos Libombos*, the main source of water for Maputo. This position gives them access to water, communications and inputs that is difficult to replicate elsewhere in Mozambique. Additionally they have received an immense amount of help from various sources over the past few years but this has only partially offset the difficulties under which horticultural growers/exporters operate in Mozambique.

4.3.1 Grapefruit

The net returns of grapefruit exports to Europe have declined over the last three years (table 4). These have been exported via Capespan to produce markets in Eastern Europe. The strategy over the past three seasons has been to target early season production in early April where quality grapefruit has been in short supply. Their experiences have been that, although initial prices are good, the market is quickly flooded by South African fruit also looking for the good early season prices. This has resulted in a significant decline in market prices and, hence, the decline in net revenues since 2002/03.

Table 4. Grapefruit volume and prices from CITRUM for last three seasons

Season	Exported Cartons	Price per carton ZAR	Gross revenue ZAR	Packing materials ZAR	Net revenue ZAR
2002/03	15 000	70	1 050 000	195 000	855 000
2003/04	33 000	29	957 000	429 000	528 000
2004/05	66 000	23	1 518 000	858 000	660 000

CITRUM has outlined a new strategy to address the shortcomings in its current business environment. It now targets niche markets (Scandinavian countries) and United Kingdom and Dutch retailers. All of these require EUREPGAP certification. A new papaya venture has been started, with the aim of marketing to Woolworth's via Neofresh, a South African exporter and supplier of produce to Woolworth's. Currently, 10 hectares are planted, but this is projected to increase to at least 15. A banana plantation has been established which is projected to total 50 hectares. The target market is South Africa via Tropinet.

CITRUM has not increased earnings substantially during the past season, despite nearly doubling its volume of exports. This season it has begun a three-point strategy:

- Harvesting grapefruit later than previously, i.e. in May rather than April;
- Target European Union retailers rather than Eastern European produce markets (Albert Heim and Tesco have agreed to take fruit from CITRUM); and
- Get EUREPGAP and BRC accreditation.

Both Albert Heim and Tesco agreed to accept CITRUM fruit without a EUREPGAP certificate on condition that they demonstrate a commitment to comply with the standards and continue work towards certification. This is quite frankly an amazing commitment from both these supermarkets and perhaps this support can be replicated elsewhere. Certainly, CITRUM management has shown itself to be excellent at marketing.

CITRUM want to include small-farmers in their future export plans. Although it is not widely documented, CITRUM has established an embryonic Family Sector component. Their plans are for this group to grow and supply papaya and bananas into the South African market using the marketing links already established by CITRUM.

As with EAM, CITRUM has only invested in very basic post-harvest facilities. It plans to market papaya to Neofresh at ambient temperatures, i.e. without any removal of field heat. This could be achievable as the driving time to Hectorspruit is little over an hour, though delays at the border may cause problems.

4.3.2 CITRUM Papaya to Neofresh/Woolworth's

The winter climate at Chokwe is substantially warmer than that of Hluhluwe (+2°C) about 300 km further south along the coast or Musina (+4°C), which is on the Limpopo River in South Africa (table 5). This winter temperature difference is enough to allow a successful winter fruit set of papaya. Because of South Africa's cool winter, papaya availability virtually stops between the end of December and the beginning of April. Woolworth's sales of papaya alone amount to R1 million during winter and are only a fraction of this in the second half of summer. As a result of representations from both Woolworth's and Geest, Neonovo has initiated a trial with CITRUM to grow 10 hectares of Solo papaya at Umbeluzi.

Table 5. Winter temperatures in southern Mozambique and the warmer parts of South Africa
COMPARISON OF CHOKWE (MOCAMBIQUE) WITH HLUHLUWE AND MUSINA (RSA) CLIMATIC DATA

	CHOKWE				MUSINA				HLUHLUWE (Makatini)			
	T max	T min	T mean	P	T max	T min	T mean	P	T max	T min	T mean	P
JAN	33.7	21.0	27.4	109.2	33.5	21.3	27.4	58.0	32.2	21.2	26.7	102.0
FEB	33.0	21.1	27.1	139.2	32.4	20.8	26.6	57.0	31.2	20.8	26.0	112.0
MAR	32.0	19.5	25.8	65.8	31.6	19.3	25.5	39.0	30.7	19.9	25.3	78.0
APR	30.7	17.6	24.2	42.1	29.8	15.9	22.9	27.0	28.8	16.8	22.8	42.0
MAY	28.6	14.2	21.4	20.2	27.4	10.9	19.2	10.0	27.1	13.0	20.1	24.0
JUN	26.2	11.5	18.9	14.8	24.9	6.9	15.9	4.0	25.1	8.7	16.9	14.0
JUL	26.1	10.9	18.5	10.0	24.9	6.9	15.9	1.0	25.2	8.9	17.1	12.0
AUG	27.9	12.6	20.3	13.4	27.0	9.7	18.4	1.0	26.5	11.6	19.1	15.0
SEP	30.2	15.3	22.8	17.4	29.8	14.1	22.0	12.0	27.7	14.9	21.3	43.0
OCT	31.8	17.5	24.7	37.1	31.2	17.4	24.3	24.0	28.4	16.8	22.6	59.0
NOV	32.6	19.3	26.0	66.4	32.3	19.4	25.9	49.0	29.3	18.5	23.9	77.0
DEC	33.3	20.3	26.8	87.0	32.9	20.4	26.7	57.0	31.2	20.2	25.7	83.0
MEAN ANNUAL	30.5	16.7	23.6	622.6	29.8	15.3	22.5	339.0	28.6	15.9	22.3	661.0

Table 5 highlights the period during which there is a deficit in the production of papaya in South Africa. It suggests demonstrating that this deficit – which corresponds to May, June, July, August and September – is remediable if the comparative advantages of Mozambique in terms of favourable temperatures to produce papaya during the same period are used. The two countries can, therefore, be complementary in the production and processing of papaya. This may be an opportunity for Mozambican small farmers to produce and export papaya off-season production to South African supermarket chains such as Woolworth. Table 6 shows that the production and processing of fresh papaya ends in April.

Table 6. Processing papaya requirements for Geest, South Africa
Papaya for fresh processing

Month of the year (tonnage per month for Geest alone)											
Product	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Papaya	--	--	20	30	30	30	20	--	--	--	--

4.4 *Paprika*

Worldwide production of paprika is difficult to assess accurately, not least due to some countries, notably China, combining paprika and chilies in their statistics, but has been estimated at about 120,000 tons annually. Of this, some 25,000 tons are estimated to be used for processing into oleoresin, with the remainder used in one form or another as a spice condiment. Market feedback indicates a preference for use of Southern African paprika for colour extraction rather than spice; this market analysis concentrates more on oleoresin than the spice. Oleoresin is also the section of the market showing most potential for world growth, despite current production overcapacity. Although India is the largest world oleoresin producer, its paprika oleoresin production is relatively small at 350–400 tons annually, using some 8,000–10,000 tons of paprika, and providing some 15 per cent of estimated world demand. India's problem is that paprika is also used in the national diet and the oleoresin industry competes with the local market for product to convert into oleoresin. In periods when paprika has been short in India, for example in drought years, shortages develop and the local price rises, leading to a shortage of product available to the extraction sector. In the past, India has imported paprika from South Africa in order to maintain production, e.g. 1,000 tons in 2002.

Production of paprika pods by *Pimenta de Mocambique* (PM) is projected to reach 550 tons in 2005/06. Most of this will be exported and processed in Zimbabwe. Production is carried out by three types of farmers:

- Family sector on about 0.1 to 0.2 ha, usually by hand;
- Small scale commercial production on 0.5 to 2.0 ha, with some mechanical assistance; and
- Large-scale commercial production.

PM was set up using finance from its Zimbabwean parent company. This was needed for financing farmers' inputs and buying the crop, but it now has to finance this from other sources. This shortage of funds has prevented PM from expanding as quickly as it wanted and prevented it from investing in, for example, processing facilities in Mozambique.

Crop variable costs are \$2,190 per hectare and projected gross income of \$2,730 (3,250 kg/ha at a price of \$0.84/kg). The purchase price is established at 64 per cent of current world prices, as these prices are under pressure at present.

Approximately 200ha are projected to be planted by commercial farmers in Mozambique, with a projected delivery of 260 tons. A further 175 tons is projected to be delivered from smaller growers.

Investment in processing in Chimoio by PM is being considered, as this will reduce costs of shipping bulk-dried paprika to Zimbabwe and then on again to Spain. Instead, costs will be reduced by shipping de-seeded, tested and packed paprika to Spain from Chimoio via Beira.

It is not clear that PM is necessarily constrained by SPS issues, though it is possible that there have been aflatoxin problems on occasion. Help could possibly be

given to the projected quality laboratory in Chimoio at some future date should there be enough throughput at the plant to justify this.

4.5 Vanduzi

Although Vanduzi was visited, it was not possible to get much information about their production figures. Both the chief executive officer and production manager met with the consultant, but both have been in post for only a few weeks. The impression was that there appeared to be very little field production or pack-house throughput under way.

Details of the SPS aspects of the visit to Vanduzi are given in appendix 5, as are details of family farmer participation. The current logistical chain is via cold truck to Harare airport and thence to Europe. It is felt that the South African market is very accessible using the route through Zimbabwe – i.e. Mutare, Birchenough Bridge, Musina – and that they are not much further away logistically from Gauteng than, say, Cape Town.

An important aspect of the operation at Vanduzi is that it provides a working example of the linkages between family sector farms and horticultural exports, and how this can be achieved in a Mozambican context. Some aspects of this are covered in more detail in appendix 5, but several points are worth making here. The effort expended in maintaining the family sector farm network is far more than would be the case in growing an equivalent area on their own farms. As a result, some of the family sector resources are being deployed into “own farm” production. In addition, the costs of SPS compliance do not justify the results in terms of pack-house throughput.

There appears to have been considerable investment in terms of grant aid in order to allow Vanduzi to have such a large number of high-input family sector growers. However, it was evident from discussions with the senior managers that even with this aid, there were significant issues with the viability of the core operation. This highlights an issue at the core of this study.

Successful linking of Mozambican small producers to distribution networks will be through successful commercial operations. Grants to assist SPS compliance of family sector farms will not provide such access without a viable business model for a core commercial enterprise. Vanduzi appears to be reorganizing its business and, in discussions with the new management, the family sector component appears to be in the process of being rationalized, i.e. downsized, at least temporarily, until the main business has proven itself commercially.

4.6 Madal coconuts

Market research has shown that there is a significant interest among the fruit-consuming public for freshly prepared fruit products containing fresh coconut. Marks & Spencer is willing to look at developing a product based on coconut. However, the development work has to be undertaken and funded entirely by the supplier. The only contribution that Marks & Spencer will provide is a technical review of the procurement and manufacturing process. This process has to be researched and developed to a point where every conceivable food safety precaution has been taken.

Fresh coconut and coconut water are “A-list” products, which effectively means that no food technologist would be prepared to give the go-ahead to a supplier unless he was completely satisfied on issues of customer safety. In this instance, safety considerations far outweigh commercial opportunities, though the latter could be significant.

Perversely, these difficulties present a worthwhile opportunity in that solving them ensures access to a completely new and untapped market in the United Kingdom. In doing this, there would be smaller, but potentially higher-margin, opportunities in South Africa. Several South African produce buyers, such as Fresh Connect, are very interested in obtaining supplies of Mozambican coconuts. Currently, the availability of good-quality coconuts in South African retailers is almost completely non-existent, and this represents a good market opportunity. A look at the logistical and food safety requirements shows that there are no obvious reasons why it would not be worth looking at this project in more depth.

An application to the proposed SPS fund could be made in order to provide:

- EUREPGAP certification of the farm, including the provision of fixed items such as field toilets;
- Upgrading of fencing to exclude animals from selected fields;
- Improving the transport of coconuts from field to pack house;
- Improvements to building and personal hygiene facilities at the pack house;
- BRC certification; and
- Possible organic certification for coconuts and root crops.

Madal has limited resources to devote to this project at present and assistance in some form will be necessary to realize this interesting opportunity.

4.7 *The family farming sector*

The European Union’s demand for traceability and strict control over agrichemical usage has restricted the role of smallholder vegetable producers as export growers. Many crops can only be grown by the most skilled managers, with high capital investment (e.g. cut flowers, most citrus crops). The family farming sector has an advantage with the less perishable and labour-intensive crops (e.g. paprika, chilies and cashew nuts).

The family farming sector will be only slightly less disadvantaged when supplying markets that are less demanding with respect to quality and food safety (e.g. local, South African out-of-season production). Efforts should be made to reduce the risks for small-scale producers, especially when new crops or markets are being developed. This can be achieved if commercial farmers and export businesses are the primary risk-takers and create the critical mass, develop the technology and establish marketing chains. Involvement of the family farming sector will be enhanced if support is given to those exporters/agribusinesses intending to source product from out-growers.

With some support, particularly in terms of market linkages, crop development could lead to crops such as paprika, chilies, pineapples, squashes, mangoes, litchi,

limes and easy-peeling citrus being produced by the family farming sector. The family farm sector's involvement in the horticultural export industry needs to be actively promoted, with special emphasis on the more easily accessible markets, agronomic research of suitable smaller-scale farmer crops and support for the development of agribusiness–family farmer linkages. In particular, those crops with less critical post-harvest requirements could be targeted for development.

4.8 *Unfulfilled market demands*

The remainder of this chapter reviews market opportunities that were identified during the course of the field visit and in interviews with marketing agents. The data presented are based on a variety of sources but are mostly derived from existing shortfalls in supermarket supply within South Africa. Other opportunities exist in the Middle East and Europe. In addition, many of these opportunities are ones in which the post-harvest demands are relatively modest and would be appropriate for family sector farmers. The data presented are the requested quantities of produce that the agents require for orders they are currently unable to fulfil.

4.8.1 Squashes

This crop was identified as an interesting possibility in the World Bank Horticulture Sector Development Study of August 2005. South African production of squashes for the export market has been badly constrained by the continued high value of the rand, in particular, against the dollar. This meant growers looked for alternative crops – thus reducing the amount of squashes produced for export and, hence, for the South African market. In addition, with the devaluation of the Mozambique currency against the rand, exports to South Africa look increasingly competitive.

Based on interviews with South African buyers, there is an unfulfilled demand from distributors such as Woolworth's. However, if this trade were proven to be successful then other retailers, who also have supply problems at that time of year, would be potential buyers. An important factor is the modest post-harvest requirements of squash and their relative long shelf life – which means that the initial investment in post-harvest technology is relatively small, an important issue for small-scale Mozambican farmers.

Optimum storage and shipping temperatures are 12.5–15°C. Depending on the cultivar, a storage life of two to six months can be expected at these temperatures. Recent research showed that for a range of winter squash cultivars stored at 10–15°C, 90 per cent, 70 per cent and 50 per cent were marketable after nine, 15 and 20 weeks, respectively. Optimum relative humidity is about 60 per cent. These requirements should be relatively easy to meet for many growers, with only minimal investment.

For markets in South Africa, where the logistical chain can be measured in days, it might be possible to dispense with cooling altogether and truck at ambient temperature. In terms of SPS issues, growers will be required to be EUPEPGAP certified if they want to sell in South African supermarkets. However, it will be much easier for Mozambican exporters to sell in the traditional markets – the key here will be to ensure there is significant critical mass to ensure that transport costs are low and

that there is sufficient competition within the supply chain to keep transaction costs to the bare minimum.

4.8.2 Root crops

There are also unfulfilled markets for yams and cocoyams in the United Kingdom and on the European continent. From an SPS perspective, EUREPGAP certification would not be required initially for entry to the United Kingdom, but would be required for continental European customers. Interviews with market traders revealed that locally-grown cocoyams are available year round. The cultivar has reddish vascular bundles threaded through the tuber, but is pleasant to eat, as it is not fibrous. There is little published information on cocoyam storage, but it is expected they would have the same storage characteristics as normal yams, which can be stored for three or four months. However, cocoyams must first be dried by spreading them out under shade; they can then be stored in any cool dry place and then stored until they start to sprout. Similarly for sweet potatoes and organic sweet potatoes, there are significant requirements in both South Africa and Europe, as well as for the ethnic West Indian and West African market.

Sweet potato is a perishable crop that remains metabolically active after harvest. It is essential for good curing to have correct temperatures and humidity, and good ventilation. Successful sweet potato export shipments require a three-to-five-day curing period, immediately after harvest, at a temperature of 29–30°C and a relative humidity of 85 to 90 per cent. A delay of as little as 12 hours between harvest and curing will be detrimental to successful curing, while curing at temperatures below 24°C is not beneficial at all. Likewise, low humidity during cooling results in excessive weight loss and poor healing of wounds. The curing of freshly harvested sweet potatoes under conditions of warm temperatures and high humidity is an indispensable step in the export of sweet potatoes.

Sweet potato roots are chilling sensitive and should be stored between 12.5°C and 15°C with high relative humidity (>90 per cent). A storage life of 6 to 10 months can be expected under these conditions, although sprouting may begin to occur after about six months, depending on cultivar.

Given these requirements, there seems to be no technical difficulty to long-distance transport by sea or road to European or South African markets.

4.8.3 New opportunities and family sector farms

It is estimated that horticultural exports from Mozambique were \$4.46 million in 2005. This is made up mainly of banana, mango and citrus exports. However, during the course of the consultant's visit to Mozambique and subsequent discussions with marketing agents, it appears that there are significant opportunities for lower-value crops. These crops – e.g. roots and squashes – represent areas of opportunity that are easier for family sector farmers to grow and manage, particularly in terms of post-harvest physiology.

Table 7. Squash root crop and papaya crop opportunities for Mozambique

Gross value in rands of opportunities (papaya, yams, sweet potato and squashes)

	Tons	Value
Papaya	130	910 000
Yams	800	2 000 000
Sweet potato	1 440	2 880 000
Organic beauregard sweet potato	800	2 000 000
Butternuts to South Africa	400	600 000
Organic butternut	240	720 000
Pumpkins	240	240 000
	ZAR	9 110 000
	US\$	1 518 333

The opportunities, expressed as required programmes by a marketer, add up to over \$1.5 million (see data above), which is significant when seen in the context of existing exports. In SPS terms, there are lesser barriers to entry for family sector farmers growing these crops than was seen by the consultant at the Vanduzi family sector baby corn growers.

5 Issues to be addressed by small farmers to meet South African supermarket requirements

5.1 Introduction

Although the formal legislative framework that exists in the United Kingdom and European Union is not in place in South Africa, the influence of United Kingdom law and their supermarkets' responses to it are very influential in South Africa. The standards adopted in the United Kingdom have spread around the world, primarily through their overseas supplier network and this has very quickly been adopted by South African supermarkets.

Woolworth's, in particular, has led the way, though other South African retailers subscribe to many European standards. Marks and Spencer and Woolworth's have an agreement on the sharing of technical and business information based originally on family connections but continuing, although the companies are now largely out of family control. As a result, Marks and Spencer has had a considerable input into the strategy of Woolworth's supply chain management. This is based on three premises:

- (a) Reducing the number of suppliers to a fairly small number. In 1990, Woolworth's had over 200 produce suppliers and has reduced this to about 14 core suppliers today.
- (b) Adopting the concept of a "due diligence" approach to food safety.
- (c) Using standards developed in the United Kingdom as the basis for supplier certification rather than developing a bespoke standard of their own. Use of third parties to audit is now commonplace.

From the retailer's perspective, table 8 provides a summary of the potential safety risks of a produce supplier and of the mitigating factors needed to be in place. These can be summarized as:

- EUREPGAP for the farming operation;
- British Retail Consortium certificate (BRC) or equivalent for the pack house; and
- Appropriate certification of third party auditors, supporting laboratories and pesticide advisors.

The above standards are those currently set by Woolworth's, but Freshmark, Fresh Connect, Spar, and Pick and Pay all aspire to the same standards. As an example, Spar aims to have 100 per cent of its supplier base EUREPGAP certified by the end of 2006.

5.2 Risk assessment

The supermarket uses growers, including farmers and agribusinesses, to supply produce as a raw material. This poses a risk in that unsafe or poor growing practices on the part of the supplier may lead to a risk to consumers. This risk assessment forms the basis for a HACCP flow chart and HACCP for suppliers of produce.

The buyer has a wide procurement network. Most are in South Africa. Most neighbouring countries and a select group are from Europe; West Africa and Oceania form a wider network. Management of this grower base is critical for the continuous supply of safe raw materials.

The summary in table 8 below is a site risk assessment of the supplier base to the pack house. This risk assessment identifies potential exposure and records existing management control mechanisms and deficiencies, which may require further action by management. All risk exposures are rated using a simplified High, Medium, Low Severity Ratio (S) as well as a High, Medium and Low Probability (P) ratio. The use of more complex rating mechanisms is deemed not to be appropriate.

Table 8. Summary risk assessment of supermarket produce supplier

Risk exposure	Direct consequence	P	S	Existing management controls	Shortcomings	Mitigating factors/ notes
No raw material – poor infrastructure and technology	Failure of procurement plan, no raw material	L	M	Audit of grower infrastructure as well as assessment of production capacity		Previous supply record
Unsafe raw material – poor infrastructure and technology	No raw material or raw material out of specification	L	H	Grower audit, grower manuals on safe methods of crop production		EUREPGAP certification
Unsafe raw material – poor control of pesticide usage	No raw material or raw material out of specification	L	H	Grower audit, grower manuals on safe methods of crop production		EUREPGAP certification
Raw material contaminated by foreign bodies or biohazards	Unsafe raw material	L	H	Grower audit, grower manuals on safe methods of crop production		Pack-house certification – audited (e.g. BRC).
Capacity on farm for translating delivery programme into a proper farm Plan	No raw material	M	M	Assessment by procurement and agronomists	Needs technical judgment	Not a safety issue, previous supply record a major factor
Capacity on farm to plan for seasonal pest and disease pressures	No raw material or raw material out of specification	M	M	Grower audit and assessment by procurement and agronomists		EUREPGAP certification, pack-house based auditor

Risk exposure	Direct consequence	P	S	Existing management controls	Shortcomings	Mitigating factors/ notes
Capacity on farm to safely plan for seasonal pests and diseases	No raw material or out of specification	L	H	Grower audit as assessed by agronomist		EUREPGAP certification. BASIS/AVCASA ²⁶ certification
Capacity to plan for correct water and fertilizer management	No raw material or out of specification	M	M	Assessment by procurement and agronomists		EUREPGAP certification
Ability to monitor pest pressure and control measures	No raw material or raw material out of specification	M	M	Grower audit as assessed by agronomist		Pack-house based auditor. BASIS/ AVCASA certified advisor
Capacity to harvest at correct specification	No raw material or out of specification	M	M	Assessment by procurement and agronomists		Input from factory technical is in place
Pack-house infrastructure to comply with pesticide, foreign body and biohazard requirements.	No raw material or raw material out of specification	M	H	Grower audit as assessed by agronomist		Appropriate certification (e.g. BRC), certified microbiological reports
Infrastructure to implement correct post-harvest handling requirements	No raw material or raw material out of specification	M	M	Grower audit as assessed by agronomist		
Implementation of pesticide MRL	No raw material or raw material out of specification	L	S	Grower audit as assessed by agronomist		EUREPGAP certification – MRL testing schedule
Transport conforms to requirements to avoid pesticide, foreign body and biohazard requirements	No raw material or raw material out of specification	L	M	Grower audit as assessed by agronomist and by supermarket technical department	Needs defined role by supermarket technical	Pack house and farm transport protocols/ systems (e.g. BRC)

Compliance with best practice for pesticide use in the production of foods is addressed by AVCASA certification (South Africa) or BASIS certification (Mozambique) of advisors and operators.

Compliance with best practice for food safety in the growing of fresh produce is addressed by the requirement of all growers to meet EUREPGAP certification.

Compliance with best practice for packing of fresh produce is addressed by a pack-house manual and BRC or equivalent (e.g. International Organization for Standardization ISO 22000) certification.

Compliance with acceptable best practice for production of organic fresh produce is addressed by all organic growers certified on basis of European Council Regulation 2092/91, which sets European Union standards for organic certification.

²⁶ British Agrochemical Standards Inspection Scheme (BASIS) and Association of Veterinary and Crop Associations of South Africa (AVCASA).

5.3 The current situation on “best practice” in South Africa

The summary in table 9 below and subsections summarize the theoretical situation adopted by South African supermarkets. In practice, supermarket and produce technologists adopt a slightly more pragmatic approach outlined in table 9.

Table 9. Summary of supermarket technologists “footprint”

Supermarket shelf	Packer/pack house	Primary supplier (often also the owner or shareholder in the pack house)	Secondary supplier
All suppliers' products are continuously monitored and evaluated on the shelves by supermarket quality control staff. Reports on problems are regularly forwarded to the supplier. Customer complaints are logged. Some produce is sent for microbiological and pesticide residue testing. A number of packs are used for monitoring temperature management through the internal distribution and display chain	All packers are visited on a regular basis. Most visits are commercial in nature and discuss supply programmes. However, formal customer and third-party safety audits take place every year. A poor or problematic safety audit leads directly to a reduction in commercial opportunities. Persistent safety and supply problems coupled with a poor response to them will invariably lead to the pack house being delisted as a supplier. Most of the technical input that comes directly from the supermarket technologist is directed to cold chain management.	Often, but not necessarily, visited by the supermarket technologists. However, is required to show evidence of legal and code of practice compliance or that a plan is in place to achieve certification. Usually copies of appropriate certification must be lodged with the pack house. Often other evidence of compliance is kept on file at the pack house (photos of pesticide store, field toilets, on-farm product handling systems)	Almost never visited by the supermarket unless there is a specific reason e.g. substantial out-of- season supply. Often these growers are subcontracted to grow a portion of a neighbouring farmer's supermarket contract. They are often, but not necessarily, certified. Their role has to be made known to the supermarket representatives. If the relationship continues for any substantial period then farm certification is required. In the interim a “working towards certification” statement is accepted, though a time scale has to be attached.

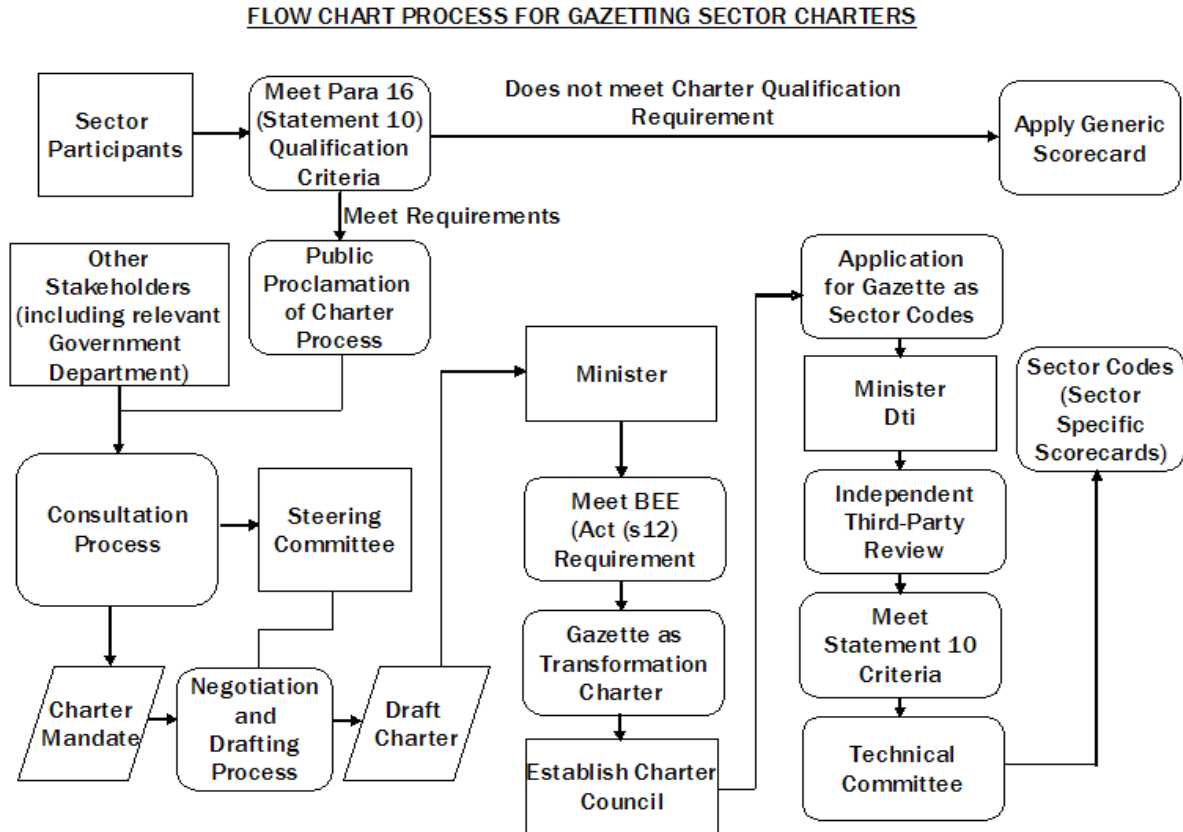
The above summary has been drawn up from discussions with South African produce buyers. As can be seen, there are some slight concessions but these are unlikely to be of help to Mozambican suppliers in the medium to long term. What also must be borne in mind is that the produce market is generally oversupplied and there is intense competition to supply at the top end, where margins are greater and there are better opportunities for beneficiation.

In essence, supermarkets are able to pick and choose their suppliers who in turn invest heavily in quality and safety in order to differentiate themselves from each other. Suppliers who do not do so are quickly eliminated and there are generally others eager to take their place.

5.4 Family sector farmers in the supermarket supply chain

For own-brand retailers, there is no driver or need in place to procure from family sector farmers. The South African Government is currently in the process of producing a BBBEE charter for the agricultural sector using the process shown in figure 3. This charter will cover both procurement objectives within agriculture as well as ownership of productive farming land. As of December 2005, the charter was at the negotiating and drafting step (bottom left hand corner).

Figure 3. Process flow chart for development of BBBEE agriculture charter



The proposed penalty in the charter for non-compliance by procurement, including that of retailers, is that they will not qualify for government supply contracts. There is in practice, therefore, no incentive for any retailer or agricultural procurement company to source from the family sector. Based on the evidence of television and in-store advertising, as well as interaction with retailers, South African supermarkets are not really interested in procurement from the family sector. Previous experience with family sector farming in the past has in any case not been good and some initiatives carried out in recent years have withered away.

Supermarkets, when dealing with any potential new supplier, require significant capital stock in the form of buildings and vehicles, as well as systems in the following areas:

- Ability to achieve the required cold chain and post-harvest physiological requirements of the produce;
- Adequate safety systems in terms of appropriate certification; and
- A track record.

Whether family sector farms are involved or not is from their point of view a moot point. In fact, the participation of family sector farmers would require additional reassurances from a supplier that continuity of supply is secured.

5.5 *Support by supermarkets to suppliers*

Supermarkets see their core business as retail. As is shown, their response to legislative changes from Government and increased demand for quality and innovation from customers has been to push these costs and functions on to third parties or to suppliers. Practically all these costs are met by the supplier who, in addition, has seen other costs migrate to their account over the years. These include distribution costs within the retailers system, lug hire, penalties for short delivery, lower margins and payment for promotional campaigns, among other changes. The retail industry is undergoing continuous pressure to reduce overhead and, given the competition between them, this is of necessity passed on to the supplier. The situation is well known to students of economic theory as a classic instance of “imperfect oligopoly” and is a quite unstable one for both retailers and their “own brand” suppliers.

The only help they might be prepared to give would be in providing shelf space for certain products meeting the criteria in section 5.4 above. Some small benefits might accrue from “fair trade” certification, but this would be uncertain. Some retailers in the United Kingdom have shown an interest in procuring from Mozambique. However, it would be a mistake to approach them without a plan that clearly meets their own internal business and safety objectives.

Appendix 1 – SPS issues in accessing South African markets

South African Supermarket Standards – Formal standards for food safety in South Africa are nowhere nearly as strict as in the United Kingdom or the rest of Europe. However, in practice, it is becoming more common although by no means universal for South African supermarkets to require EUREPGAP certification from their suppliers. This is becoming standard with Woolworth's and Pick and Pay, for instance. However, even growers whose focus is on the domestic wholesale or informal markets, such as ZZ2, are EUREPGAP certified. Other certificates are necessary, including appropriately qualified pesticide operators and advisers. Increasingly, other United Kingdom standards are becoming the norm and the current situation is summarized in table 10 below.

South African National Department of Agriculture – There are two sections within the National Department of Agriculture which are relevant to potential importers. These are the department, Directorate of Agricultural Production Inputs responsible for implementing Act 36 of 1947 and International Plant Health.

Table 10. Summary of SPS issues facing horticultural exports to South Africa

Technical issue	Nature of problem	Intervention or how addressed
Pesticide residue analysis	Complex and expensive equipment, specific and continuous training needed, laboratory and testing methods must be UKAS or SANAS accredited	Use SABS laboratory in Pretoria (chromatography services)
Microbiology	Complex and expensive equipment, specific and continuous training needed, laboratory and testing methods must be UKAS or SANAS accredited	Use SABS laboratory in Pretoria (microbiology)
EUREPGAP certification	Organizations in Europe reluctant to license additional auditing and training companies, process of licensing difficult and is a process rather than a once off training and certification	Use pre-existing companies with large geographic footprint such as QCFresh, which already operate in Mozambique with Vanduzi and EAM
BRC certification of pack house	This standard is now required by Woolworth's and is increasingly becoming an international industry standard	There are a number of organizations in South Africa such as the PPECB that can carry out BRC audits
Organic certification	Must be to UKROFS standard	Can use South African-based auditors that are able to audit on behalf of United Kingdom/ European Union UKROFS-approved certifying bodies
BASIS/FSTS training and certification	Although South African supermarkets may accept an AVCASA certificate, it would not be acceptable to a United Kingdom supermarket	Both certificates appear to be equivalent in practice, but it would be a waste of resources to certify pesticide operatives twice; need to translate course material into Portuguese and hold exams in the same language

Technical issue	Nature of problem	Intervention or how addressed
Phytosanitary	The National Department of Agriculture in South Africa is required by USDA–APHIS to monitor the pest and disease situation in all countries that export fruit to South Africa; this is one of the conditions of South Africa's permit to export citrus to the United States	The Mozambican Department of Agriculture is required to monitor the pest and disease situation on all crops – especially those that are exported to South Africa and maintain an up to date database

Each of these issues is reviewed in more detail in the following annexes.

Pesticide residue analysis – laboratory standards

United Kingdom and South African supermarkets require minimum standards from pesticide testing laboratories. Any pesticide laboratory must be capable, qualified or accredited to undertake pesticide residue analysis to ensure the reliability and consistency of the results. Laboratories are generally required to have with good laboratory practice (GLP) status and United Kingdom Analytical Standards (UKAS) accreditation for pesticide analysis. In South Africa, the Ministry of Trade and Industry has a laboratory certification scheme called the South African National Accreditation Scheme (SANAS). SANAS and UKAS are “cross accredited” and recognize each other’s certification.

The laboratory chosen must be demonstrated to be capable, qualified or accredited to undertake pesticide residue analysis to ensure the reliability and consistency of the results. Laboratories with GLP status and UKAS accreditation for pesticide analysis and participating in the Department of Environment, Food and Rural Affairs (DEFRA) Food Analysis Performance Assessment Scheme (FAPAS) achieving specified Z scores are usually specified.

There are two schemes of relevance to the United Kingdom food industry: its laboratories can work to the principles of the UKAS accreditation scheme or to the GLP system. Laboratories should have UKAS and GLP accreditation for pesticide residue analysis (or equivalent in other countries). UKAS accreditation is also given for specific tests, so it is important that suppliers check as to the particular pesticide groups for which UKAS accreditation has been granted. Look for the percentage of tests in the multi-residue screen that are accredited. Documentary evidence should be requested. In addition, the laboratory should participate in the FAPAS proficiency testing scheme and have had its performance judged satisfactory. For more information regarding accreditation and FAPAS scores, see the Fresh Produce Consortium (FPC) Pesticide Code of Practice.

Extreme care should be taken on what to analyze for in a sample. There is sometimes a misconception over the term “multi-residue”, which can give the impression that all possible residues are being tested for. In fact multi-residue analysis will vary between laboratories, so it is important that the laboratory be aware of the range of pesticides it needs to analyze and have appropriate protocols. Some

important pesticides, such as inorganic bromine and dithiocarbamates, are not included in a general multi-residue test.

The residues should be compared to the current lists of legal MRL's as defined in *The Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuff)s* Regulations 1999 and subsequent amendments (2001). Statutory Instruments 1999 No. 3483 and 2001 No. 1113.

Reference Information for pesticides

Useful points of reference are:

<http://www.nda.agric.za/act36>

DEFRA Green Code: Code of Practice for Safe Use of Pesticides on Farms and Holdings (PB3528) (HMSO)

Code of Good Agricultural Practice for the protection of water	DEFRA
Code of Good Agricultural Practice for the protection of air	DEFRA
Code of Good Agricultural Practice for the protection of soil	DEFRA

Opportunities for saving money by reducing waste on your farm	
A manual for farmers and growers	DEFRA
Guidelines for the safe and effective use of crop protection products – www.gcpf.org	
Guidelines for personal protection when using pesticides in hot climates – www.gcpf.org	

The Pesticide Manual – A World Compendium	BCPC
The Biopesticide Manual – A World Compendium	BCPC
The UK Pesticide Guide 2002 (Published annually) (The “Green Book”)	BCPC
www.bcpc.org	

Pesticides Monitor (monthly)	DEFRA
Pesticides, Reference Book 500 (Published annually)	DEFRA
Pesticide Safety Directorate (PSD) – www.pesticides.gov.uk	
Pesticide Residue Committee (PRC) – www.pesticides.gov.uk	
Pesticides 2001 – Your guide to approved pesticides (the “Blue Book”)	PSD

Fresh Produce Consortium (FPC) – www.freshproduce.org.uk	
The Control of Pesticides – a Code of Practice	FPC

Due Diligence Guidance on the Agricultural Use of Pesticides – Chilled Food Association (CFA) www.chilledfood.org

LIASON UK pesticide database www.csl.gov.uk/liaison

Minimizing Food Residues	Crop Protection Association	(CPA)
www.cropprotection.org.uk		
Why is the avoidance of pesticide residues so important		CPA
What can you do in the field to minimize residues		CPA

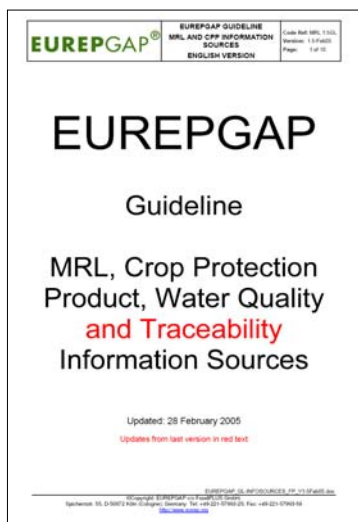
Assured Produce	www.assuredproduce.co.uk
EUREPGAP	www.eurep.org

Linking the Environment and Farming (LEAF) – www.leafuk.org

Pesticide Action Network – www.pan.co.uk	
Pesticide News (Quarterly) – The journal of Pesticide Action Network (PAN) United Kingdom	
The List of Lists – A catalogue of lists of pesticides identifying those associated with particularly harmful health or environmental impacts.	PAN

In addition, the EUREPGAP website maintains a fully updated manual on pesticide information of relevance to exporters to the European Union (figure 4).

Figure 4. EUREPGAP manual on all sources of pesticide information in the European Union



Appendix 2 – Microbiological laboratory requirements

Laboratories carrying out tests on food are required by European supermarkets to be appropriately accredited. The body that is generally accepted in the United Kingdom is:

Campden & Chorleywood Food Research Association Group
Chipping Campden,
Gloucestershire
GL55 6LD
UK
tel +44 (0) 1386 842000; fax +44 (0) 1386 842100
www.campden.co.uk

SANAS/UKAS accreditation of the laboratory alone is generally not acceptable to United Kingdom supermarkets. A specific standard has to be met in terms of International Standards Association (ISA) standards for the microbiological determination of the following tests;

- *Escherichia coli*;
- *Listeria monocytogenes*;
- *Salmonella spp.*; and
- Yeasts and moulds (spoilage).

The laboratory and tests must be certified annually to the ISA standard. Of particular importance is the requirement for the film test for *E. coli* which takes only 24 hours to produce a result. This method and the certification is regarded by supermarket chains as crucial in demonstrating “due diligence” with regard to customer safety because there is time to react to a positive result before much of the product has been sold and consumed. In practice the South African supermarkets require a lower microbiological standard and are satisfied with SANAS/UKAS accreditation.

UKAS

UKAS is the sole national accreditation body recognized by the Government to assess, against internationally agreed standards, organizations that provide certification, testing, inspection and calibration services. Accreditation by UKAS demonstrates the competence, impartiality and performance capability of these evaluators.

Usually, the reason for getting something independently evaluated is to confirm it meets specific requirements in order to reduce risks. Obvious examples are product failure, health risks, company reputation or to meet legal or customer requirements. Anything or anyone can be evaluated – products, equipment, people, management systems or organizations.

Accreditation by UKAS means that evaluators – i.e. testing and calibration laboratories, and certification and inspection bodies – have been assessed against internationally-recognized standards to demonstrate their competence, impartiality and performance capability. It is the ability to distinguish between a proven,

competent evaluator that ensures that the selection of a laboratory, certification or inspection body is an informed choice and not a gamble. UKAS accreditation means the evaluator can show to its customer that it has been successful at meeting the requirements of international accreditation standards. This means that the customer reduces the risk of selecting an incompetent evaluator and paying for, or more seriously, acting upon invalid results.

Trust is placed with suppliers in a variety of ways: past experience, recommendation, brand preference and so on. The greater the familiarity the more confident the purchasing decision. In today's large competitive business market, it is not always possible to buy from "known" sources. Reassurance is needed to maintain trading confidence. Independent evaluation is the principle source of this reassurance and such confidence is underpinned by UKAS accreditation.

Accreditation by UKAS benefits its direct customers, their customers and purchasers by building confidence in a range of suppliers and enabling choice. It also encourages free, but trustworthy markets, enabling innovation and reduced regulation. Accreditation by UKAS can also limit the need for Government to regulate industry and the professions. It provides an alternative means of ensuring the reliability of activities that have the potential to impact on public confidence or the national reputation. UKAS, where requested, assesses organizations and recommends to Government its appointment as Notified Bodies as required by European Union Directives and Regulations.

Accreditation and global trade

Accreditation is used worldwide. In most developed economies there is a body similar to the United Kingdom Accreditation Service. UKAS is this country's signatory to European and international agreements to facilitate the breaking down of technical barriers to trade. It is important for goods and services tested are accepted in Europe and worldwide without the need for additional testing. Increasingly, accreditation is the means of achieving this.

UKAS is recognized internationally through European and world multilateral recognition agreements. This recognition enables Government to use accredited bodies to meet obligations under world trading agreements e.g. compliance with European Union Directives and the WTO TBT (World Trade Organization Technical Barriers to Trade) Agreement. UKAS represents the United Kingdom on three European and international bodies – the European Cooperation for Accreditation, the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum.

There are currently about 88 procedures within the Food Safety and Quality, Microbiology and Pesticides Veterinary Medicine Groups that need to be accredited to the ISO/IEC 17025 standard by UKAS. In addition, two of the principal Proficiency Testing Schemes operated by CSL, FAPAS and the Food Examination Performance Assessment Scheme have to be assessed by UKAS, so as to be recognized as complying with the requirements of International Standard ISO/IEC Guide 43-1:1997, through assessment against ILAC Guide G13:2000.

Appendix 3 – EUREPGAP, BRC, UKROFS, BASIS/FACTS and BRC certification

A.3.1 EUREPGAP background

EUREPGAP was developed from a European group of representatives from all stages in the fruit and vegetables sector with support from producer organizations outside the European Union. Started as an initiative by retailers in 1997, the Euro-Retailer Produce Working Group (EUREP), the current version of the EUREPGAP document and procedures has been agreed among partners from the entire food chain for fruit and vegetables after a wide consultation phase.

Version 2 (January 2004) of the EUREPGAP Reference Standard Fruit and Vegetables was released in September 2003 and can be downloaded from the website www.eurep.org. The EUREPGAP standard for fruit and vegetables has evaluated and approved the new versions of the normative documents for fruit and vegetables – the EUREPGAP General Regulations for Fruit and Vegetables, the Control Points and Compliance Criteria, and the Checklist. These documents constitute the EUREPGAP Version 2.x and are current since 12 September 2003. After 1 January 2005, only version 2 certificates will be valid.

A.3.2 BRC

With the introduction of the UK Food Safety Act of 1990, the statutory “due diligence” defense became the main driver to formalize the process of food premise inspection by United Kingdom retailers. Under this legislation, it was no longer acceptable for a retailer to rely on a “warranty” defense, if legal proceedings were presented. Under section 21 of the Food Safety Act, there is provision for a general defense of “all reasonable precautions and all due diligence” against principal offenses in the Act, i.e.:

“... it shall be a defense for the person charged to prove that he took all reasonable precautions and exercised all due diligence to avoid the commission of the offense by himself or by a person under his control”.

The responsibility for product safety and legality was now shared between supplier and retailer, with emphasis for the retailer being placed on five main areas of control, namely:

- (a) To ensure the presence of a detailed specification, which is not unlawful or inconsistent with any compositional standards or good manufacturing practice;
- (b) To ensure that they satisfy themselves that a supplier is competent to produce the specified product and complies with legal requirements and operates systems of production control in accordance with good manufacturing or agricultural practices;
- (c) Make visits from time to time, where practical, to verify the competence of the supplier or receive the results of any other of the suppliers system for that purpose;
- (d) Establish a risk assessed program for product examination, testing or analysis; and
- (e) Monitor and act upon customer complaints.

Management review carried out by a number of the major United Kingdom retailers in the mid 1990s led to a move toward third-party auditing. The BRC Global Standard was developed in October 1998 with the aim of eliminating multiple audits by retailer technical and third-party technical representatives of food manufacturers supplying the United Kingdom retailer with their own brand products.

Since the first issue of the BRC Global Standard – Food in 1998 it has been revised on two occasions, with Issue 3 being published in April 2002. The standard was developed under the leadership of the BRC and its members, and has gained significant international recognition for its content, format and support system.

The main sections of the standards are;

- (a) HACCP system;
- (b) Quality management system;
- (c) Factory environment standards;
- (d) Product control;
- (e) Process control; and
- (f) Personnel.

The BRC is a single standard and protocol, allowing evaluation to be carried out by certification bodies that are accredited against the European standard EN45011 (ISO/IEC Guide 65). Single verification is all that is required and it addresses the due diligence requirements of both supplier and retailer. As certification bodies are accredited against a European standard, there can be recognition of accredited certification bodies in countries where product is sourced.

There are also a number of benefits in relation to the certification body accreditation scheme (based on EN45011 or ISO Guide 65), which supports the BRC standard.

A.3.3 UKROFS organic standards

The mission of the United Kingdom Register of Organic Food Standards (UKROFS) is to ensure that produce grown and sold in the United Kingdom as “organic” conforms to the standards established by UKROFS in implementing European Union legislation. UKROFS does this by accrediting and supervising the work of private sector organic certification bodies and by authorizing the importation of organic produce from countries outside the European Union.

UKROFS deals with all stakeholders in the production of organic food, including (a) consumers; (b) retailers; (c) wholesalers; (d) importers and others in the distribution chain; (e) farmers; (f) growers and processors of food and agricultural products to be sold as organic; (g) certifiers of organic products as well as the United Kingdom Department of Environment, Food and Rural Affairs (DEFRA).

As to its structure, UKROFS consists of a board appointed by Secretary of State at the Department of Environment, Food and Rural Affairs in consultation with the devolved administrations. To assist it in its work, the board has appointed committees dealing with certification, research and development, and technical issues.

Members of these committees, each of which is chaired by a member of the board of UKROFS, are drawn widely from relevant interests. The board is assisted by a secretariat provided by the Department of Environment, Food and Rural Affairs.

A.3.4 Duties of the board

The board monitors and approves the work of the organic certifying bodies and takes any action necessary to assure itself that the bodies are implementing correctly the required European Community (EC) legislation and the UKROFS organic standards and control manual. It accredits new certifying bodies which meet the appropriate requirements, and if necessary to suspend or withdraw approval from any accredited certifying body found in breach of the requirements. Formulation of standards for the production of organic products in the United Kingdom is in accordance with the requirements of the appropriate legislation, in particular Council Regulation (EEC) 2092/91.

Anyone wanting to grow or process food which is to be sold as organic must by United Kingdom law be registered with UKROFS or a body approved by UKROFS, and be inspected by them at least once a year. The same applies to those importing organic food from outside the EC and in practice to South Africa. The UKROFS-approved bodies operate privately but are all subject to inspection by UKROFS to ensure that their systems and the standards of their inspections conform to EC Regulation and UKROFS standards. UKROFS also carries out direct check inspections on farmers and processors registered with the sector bodies as an additional assurance that organic standards are being complied with.

There are also strict production standards. For many years, there have been codes for organic farming prepared by voluntary bodies and applied by their members. In 1993, however, a European Community regulation became effective. This describes the inputs and practices which may be used in organic farming and growing, and the inspection system, which must be put into place to ensure this. The regulation also applies to processing aids and ingredients in organic foods. Thus, all food sold as organic must come from growers, processors or importers that are registered and subject to regular inspection. In the United Kingdom, UKROFS administers the regulation. UKROFS consists of an independent board appointed by agriculture ministers, assisted by a small secretariat provided by the Ministry of Agriculture, Fisheries and Food. Its job is to ensure that EC Regulation is properly followed in the United Kingdom by various bodies which register organic farmers and processors.

The EC Regulation also operates throughout the whole European Community, so one can trust organic imported food. Organic food produced under the regulation may be freely sold within the EC. Thus, one sees the names or symbols of the certifying bodies from other EC countries. A limited number of countries outside the EC are currently recognized as having an equivalent system. Organic food from those countries may also be freely sold. For other countries, the importer must demonstrate to UKROFS (or a similar body in another EC country) that the food is genuinely produced to an equivalent standard and inspection system before it can be sold as organic.

The rules that govern the labelling of organic foods come from the EC Regulations. They are designed to ensure that consumers are not misled. In the case of a product in a natural state such as potatoes, the rules are simple: potatoes may be described as organic only if they have been grown by a registered producer of organic foods. One might see on the label “organically grown potatoes”. Though not legally required, there may also be a brief description of organic farming and perhaps the logo of the inspection body concerned and the address of the grower or packer.

The EC Regulation currently provides rules for the production of all organic foods. Community standards for animal production are being developed and until these are in place, national standards, such as those of UKROFS in the United Kingdom, must be used. These regulations aim to keep livestock in good health by promoting high standards of animal welfare, appropriate diets and good day-to-day care of stock. If animals are ill, the farmer must give appropriate treatment. Antibiotics and other conventional medicines are used under veterinary advice and only when no alternative treatment is available or where necessary to save an animal’s life or to reduce suffering. In such cases, no product from the animal concerned may be sold as organic for a certain period from the last use of the medicine, which in most cases is twice as long as the normal “withdrawal period” for that medicine.

More information is available on the DEFRA website (www.defra.gov.uk). UKROFS organic certification is available in South Africa from;

Ralph Peckover
CSIR Food Science and Technology
P.O. Box 395,
Pretoria 0001,
South Africa
Tel. +27 12 545-0409
Fax +27 12 545-0409
E-mail: rpeckove@csir.co.za
Website: <http://www.csir.co.za>

A.3.5 BASIS/FACTS certification

BASIS® is an independent organization set up at the suggestion of the United Kingdom Government in 1978, to establish and assess standards in the pesticide industry relating to storage, transport and competence of staff. It is an industry self-regulated scheme, in line with government deregulation policy, giving balanced and independent advice to registered distributors. It does not seek to emulate the role of any government enforcement agency. BASIS became a registered charity in 1999.

In the 1980s the British Agrochemical Standards Inspection Scheme (BASIS) was one of the world’s first standard setters for pesticide suppliers. In 1992, the company was incorporated and at the same time set up the BASIS Professional Register to help demonstrate the professionalism of advisers. It was decided that, as BASIS was becoming involved in areas of agriculture other than just agrochemicals (fertilizer with FACTS, Pest Control with PROMPT and more recently environment with BETA and Soil and Water Management), BASIS would no longer use the acronym. Consequently, BASIS (Registration) Limited is an independent, self-

regulatory registration, standards and certification scheme serving the pesticide, fertilizer and allied organizations and interests.

The BASIS Registration Board consists of representatives of all trade associations with pesticide interests, such as the Crop Protection Association, the National Association of Agricultural Contractors, the National Farmers' Union, the Agricultural Industries Confederation, the Association of Independent Crop Consultants and the County Council representatives. The board also has members elected by distributors as well as representatives of both DEFRA and HSE as observers. It is headed by an independent chairman.

BASIS standards and certification are recognized under the Control of Pesticides Regulations 1986; the BASIS Storekeeper and Field Sales and Technical Staff certificates are now required by law by all those involved in the storage, sale and supply of pesticides. Also managed by BASIS is the professional register for sales and advisory personnel employed within the agrochemical and fertilizer industries and the PROMPT® Register for technicians in the pest control industry. In addition, FACTS is run by BASIS on behalf of the fertilizer industry.

BACCS® is the BASIS Advanced Amenity Contractor Certification Scheme managed by BASIS to raise and maintain standards and good practice for contractors operating in the amenity and industries sectors of the pesticide industry.

Under the regulations, the statutory Code of Practice for Sale and Supply recommends that all companies have an independent annual assessment and names BASIS as an independent inspectorate. The power of the Code of Practice is similar to that of the Highway Code; failure to follow it will not in itself render a person liable to proceedings of any kind, but such failure will be admissible as evidence in any proceedings brought under the Food and Environment Protection Act 1985.

BASIS registration means that distributors can demonstrate to those enforcing the Food and Environment Protection Act of 1985 that they are taking all reasonable precautions to abide by the law as it relates to storage, transport and competence of staff involved in the United Kingdom Crop Protection Industry. Stores and staff are assessed annually with a report sent directly to the distributor, drawing attention to any shortcomings. This minimizes the risk of possible prosecution and subsequent fines and/or prohibition or improvement notices from the enforcement agencies. Provision of expert advice and regular auditing can help to maintain good management practices and efficiency. Companies have access to an independent organization which acts as a co-coordinator and arbitrator between various regulatory and approving authorities. Distributors can keep abreast of current and pending regulations using BASIS as a source of contact to update, clarify, interpret and advise on legislative matters as they relate to the storage, transport, sale and advice of pesticides. By their support, distributors ensure that their interests are considered in the running of BASIS.

BASIS registration in the Agrochemical Industry demonstrates an industry which:

- (a) Seriously adopts higher standards, thereby ensuring that the requirements of current legislation are met;

- (b) Invests its own money in maintaining a self-regulatory body to help it keep abreast of standards;
- (c) Takes very seriously all the implications of environmental issues by voluntarily offering its businesses to annual audits.

BASIS standards have now been adopted by (a) other key organizations; (b) county councils; (c) the environment agencies; (d) crop-based organizations such as British Sugar; and (e) farm management companies such as the Velcourt and Sentry Farming groups, farmers, growers, supermarkets and the crop assurance schemes.

When BASIS first began storage assessment in 1979, only 0.5 per cent of inspected stores reached the required standard. Now a consistently high standard is regularly maintained with almost all stores achieving the correct standards.

Many other countries have approached BASIS to discuss the applicability of the United Kingdom scheme for their own circumstances. For example, the Australian pesticide industry has adopted the BASIS model.

With one eye on the future and further professional expertise, BASIS has initiated the Professional Register (as mentioned above). To be a member of the Register demonstrates that each person is technically qualified in line with government legislation and is updated on an annual basis. To remain on the register, individuals need to accrue annual Continuing Professional Development points.

The industry has an excellent safety record. However, it is not complacent, recognizing that one major incident could bring the entire industry into disrepute.

Endorsement of the Government of the United Kingdom

“.... the Department strongly supports the work of BASIS, the pesticide industry’s self-regulatory scheme set up at our behest in 1978. Since then, the industry has behaved very responsibly, supported by minimum legislation, this being in line with the deregulatory approach. The Department is well aware of the worldwide recognition and credibility of the scheme and the fact that many other countries are keen to pursue similar initiatives.

“The aim of the Deregulatory Strategy is to ensure that pesticide control arrangements provide the necessary assurance of safety through systems which are least burdensome to manufacturers, distributors and users. Further legislation will be used only as a last resort where, for example, Codes of Conduct are seen to be inadequate. However, we recognize that any self-regulatory system will have people and organizations who will try to test the system, for whatever reason. I wish, therefore, to emphasize that this Department reserves the right to legislate further if this proves necessary in order to maintain standards of safety relating to pesticides, should support for the BASIS scheme be threatened.”

Minister responsible for pesticide legislation, DEFRA

Contact details for BASIS and website for more information:

BASIS® Registration Ltd.

34 St. John Street

Ashbourne, Derbyshire, DE6 1GH

United Kingdom

Telephone: +44 (0) 1335 343945/346138

Fax: +44 (0) 1335 346488

Registered in England No 1365343 Charity No. 1077006

Website: <http://www.basis-reg.com/training>

Appendix 4 – Circular N°UA/CPI/2005/01

AFRICAN UNION

الاتحاد الأفريقي



UNION AFRICAINE

UNIÃO AFRICANA

Yaoundé, CAMEROUN P. O. Box 4170 Telephone 221 19 69 Fax : 221 19 67 E-mail: au-cpi@au-appo.org

Inter-African Phytosanitary Council

Conseil Phytosanitaire Inter-Africain

Circular N°UA/CPI/2005/01

Référence :

To

Date :

Le 15 Mars 2005

The Directors of :

- **National Plant Protection Services**
- **Agronomic Research Centres**
- **IITA, Cotonou, Benin**

The Rectors of Agronomic Universities

The Secretary of the African Union's Inter-African Phytosanitary Council hereby informs all national plant protection services, agronomic research centres and universities as well as the relevant plant quarantine authorities of Member States, of the presence in Benin of a new exotic species of fruit fly – *Diptera: Tephritidese* – which attacks many fruit species.

This new species was first discovered in Kenya in March 2003. Shortly afterwards, it was detected in the United Republic of Tanzania, the Democratic Republic of Congo and Uganda, and more recently, in Cameroon and Togo. The first positive captures in Benin by entrapment using a parapheromone in Pénéssoulou, Bassila Commune (IITA, Drs. G. Goergen and R. Hanna), date back to June 2004.

In West Africa, the flies captured by entrapment (and obtained after emerging from infected fruits) in Benin and Togo were identified as new species for science by Dr. Richard Drew, an internationally renowned expert in this domain. This species probably originated from Sri Lanka and belongs to the *bactrocera dorsalis* complex. This complex comprises the *Tephritides* species (*B. carambolae*, *B. papayae*) which are among the most damaging to the growing globally of tropical fruits.

Research carried out in 2003 in Kenya and the United Republic of Tanzania showed that this species attacks particularly fruits with an economic value. At present, work to determine the range of plant hosts has just started in West Africa. Preliminary efforts to rear the fly in Benin have shown that this pest attacks citrus fruits, guava, tandam and particularly mangoes (IITA-CIRAD, Drs. J. F. Vayssières, G. Goergen

and R. Hanna). We believe that certain market gardening crops could equally feature on the list of host plants.

Given that this species was initially discovered in Kenya in 2003 and has within a space of 12 months spread to different far-flung corners of the continent, it seems very likely that the introduction of the fly on the continent dates back a number of years. However, we are unable from current data to accurately pinpoint the point(s) at which this **devastating quarantine pest** came into Africa.

The International Centre for Insect Physiology and Ecology (ICIPE), Nairobi, and IITA, in association with CIRAD (International Centre for Agronomic Research and Development), will join a consortium of partners to deal with this major continent-wide problem which poses an extremely serious threat to African fruit production.

For more information on this pest, please contact Dr. Braima James, Director of the IITA Biological Control Centre for Africa 08 BP 0932 tri postal, Cotonou, Benin.

Yaoundé 15th March 2005

Dr. Nazaire NKOUKA
Scientific Secretary

Appendix 5 – Report on visit to Vanduzi

A.5.1 Background

Vanduzi is owned by Mozfer, a Mozambique company based in Maputo. It is involved in transportation and owns a 12,000-ha farm in Chokwe which produces rice, maize and tomatoes. The visit to Vanduzi took place over two days. The first day, we met with the new general manager, Chris Serfontein and the production manager, Anthonie du Toit. There was some initial wariness on the part of the Vanduzi management as to the reason for our visit, but once the circumstances were explained they were very cooperative. On the second day there, we spent a good portion of the time reviewing the part played by the family farming sector in their production plans.

The assessment regarding Vanduzi is that there has been a relatively poor performance in the recent past as to pack-house throughput. The pack house is severely underutilized and there are plentiful signs of significantly high overheads in the form of capital stock and administrative staff. Our impression was that there had been a sweeping change in top management with a view to aggressively developing high volume throughput in the pack house (figure 5).

Figure 5. Vanduzi pack house, Manica Province



A.5.2 Family sector supply

This is currently in the charge of Fransisco Junior. There are 10 associations of family sector farms within a 25-minute drive of the Vanduzi pack house. Each association is tightly controlled by Vanduzi and farmers are not allowed to spray or fertilize their crops. Only baby corn is grown by family sector farms. Inputs are provided by a team based at Vanduzi that also maintains the records. Each association is covered by a EUREPGAP certificate. Vanduzi has provided a medical clinic and practical training to each association and grower.

Family farmers are responsible for land preparation, planting, weeding and harvest. Field toilets have been built in the vicinity of the association fields and are maintained by the growers. There are five key operations that are the responsibility of the Vanduzi agronomy team:

- (a) Planting;
- (b) Spraying for cutworms at seven days after planting;
- (c) Top dressing at week three;
- (d) Second top dressing at week six; and
- (e) Harvesting (collection).

Total area grown by all 10 associations of family sector farmers amounts to 5 hectares. Each grower seems to have about 0.2 ha. From what we were able to see, this is the most that can be grown by any family at any one time. The effort expended by Vanduzi to service and maintain its family sector farmers seemed completely out of proportion to the output. However, Anthonie did tell us that they were trying to expand this area of production to about 40 hectares – out of a total planned production area of 80 hectares.

Figure 6. Family sector farmer with baby corn crop

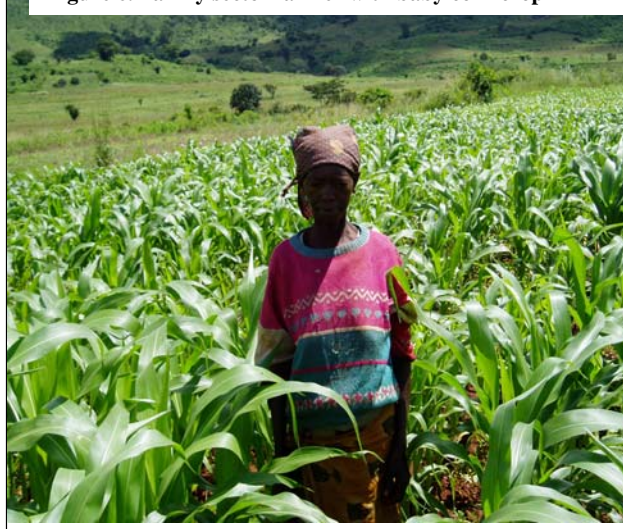


Figure 7. Toilet block at family sector farm near Vanduzi



During the course of our visit to see family sector farming, we became aware of a number of difficulties. Crop management is difficult as usually only one person is involved. Where other time demands are made, crops suffer, as in the case we saw where weeds had largely gotten out of control and the crop yield potential was low. Irrigation is by handmade canals and is very labour-intensive. Land preparation is expensive and difficult. Our overall impression was that the reward was disproportionally low compared to the effort and that Vanduzi was going to reposition itself into focusing mainly on commercial production in the short term.

A.5.3 Technical issues

Considerable investment has been made by Vanduzi in various forms of certification, including EUREPGAP. This was carried out by QCFresh from South Africa. We were told that the costs of family sector certification, including the associated infrastructure, were met by Vanduzi. We did discuss a number of other technical issues with Anthonie du Toit which were of interest because they are relevant to other exporters aspiring to get EUREPGAP certification.

Advisers and relevant workers must be BASIS/FSTS certified as EUREPGAP auditors are reluctant to accept the South African AVCASA certificate. Vanduzi had

sent several workers to Lusaka to take a BASIS/FSTS course and exam. However, because this course was in English they unfortunately did not pass the exam. Anthonie would like to see a Portuguese language version of the course and exam.

Chemical companies are extremely reluctant to register chemicals in Mozambique, due to the microscopic markets – especially in emerging horticultural crops. Anthonie would like to see a form of derogation being applied such as the extension of certain South African crop chemical registrations to Mozambique. In any case, the South African registrations are being updated and harmonized with those of the European Union. This would be a cost-effective way for Mozambique to significantly improve its crop protection options.

Vanduzi would like to see the teaching capacity of the Instituto Agrário de Chimoio upgraded. It is the intention to start courses there on permaculture, in particular in respect of maintaining and improving soil carbon levels among family sector farms.

The first point above certainly is pertinent to the scope of this study and will form part of the recommendations. The second point is a policy issue and could be taken up with the relevant ministers and government departments. In respect of the last point, the adoption of permaculture, especially of a modified form of “ridge till”, would enable family sector farmers to be far more efficient, especially when one considers the energy used in land preparation, hand irrigation and weeding. However, it is more an agronomic problem than a technical barrier.
