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COSTS OF AGRI-FOOD SAFETY AND SPS COMPLIANCE: UNITED REPUBLIC OF TANZANIA, MOZAMBIQUE AND GUINEA: TROPICAL FRUITS

SELECTED COMMODITY ISSUES IN THE CONTEXT OF TRADE AND DEVELOPMENT

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Selected Commodity Issues in the Context of Trade and Development

Costs of Agri-food Safety and SPS Compliance

United Republic of Tanzania, Mozambique and Guinea

Tropical fruits[1]

UNCTAD – Division on International Trade in Goods and Services, and Commodities

UNCTAD/DITC/COM/2005/2

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LIST OF ACRONYMS

ACP	African, Caribbean and Pacific Countries
AGOA	African Growth and Opportunity Act
APCER	Portuguese Association for Certification
APS	Assured Produce Scheme
BRC	British Retail Consortium
CIDA	Canadian International Development Agency
Codex	Codex Alimentarius
COLEACP	Comité pour Liaison Europe ACP
DANIDA	Danish International Development Agency
EDF	European Development Funds
EFSIS	European Food Safety Inspection Service
EPA	European Partnership Agreement
ETI	Ethical Trading Initiative
EU	European Union
EUREP	Euro Retailer Produce Working Group
EUREPGAP	European Retailers Protocol for Good Agricultural Practice
FAO	United Nations Food and Agriculture Organization
FLO	Fairtrade Labelling Organizations International
GAP	good agricultural practice
GDP	gross domestic product
GHP	good hygiene practice
GMP	good manufacturing practice
HACCP	Hazard Analysis Critical Control Point system
IAPSC	Inter-African Phytosanitary Council
IFOAM	International Federation of Organic Agricultural Movements
IFS	International Food Standard
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISO	International Organization for Standardisation
ISPM	International Standards for Phytosanitary Measures
ITC	International Trade Centre
LDC	least developed countries
MRL	maximum residue limit
NGO	Non governmental organization
NPPO	National Plant Protection Organization
OIE	International Office of Epizootics
PCE	phytosanitary capacity evaluation
PIC	prior informed consent
PIP	Pesticide Initiative Programme (EU)
SABS	South African Bureau of Standards
SADC	Southern Africa Development Community
SECO	State Secretariat for Economic Affairs
SIDA	Swedish International Development Agency
SME	small and medium sized enterprises
SPS	sanitary and phytosanitary measures – WTO Agreement
TBT	technical barriers to trade – WTO Agreement
UN/ECE	United Nations Economic Commission for Europe
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
USA	United States of America
USAID	United States Agency for International Development
USDA/FSA	United States Department of Agriculture
WB	World Bank
WHO	World Health Organization
WTO	World Trade Organization

1 PROJECT SUMMARY

1.1 Project justification

A large variety and quantity of fruits are produced in the United Republic of Tanzania, Mozambique and Guinea. These fruits can be obtained by harvesting, by traditional production methods or by modern production methods. It is traditional fruit production, however, which involves the largest number of farmers. The number of commercial fruit producers in all of the three countries visited is restricted.

Marketing of these products is difficult both in local and in export markets. In the local markets, producers and other intermediaries in the food chain are faced with insufficient financial resources, storage facilities and distribution networks (lack of roads). Commercial producers face other constraints, such as high costs of overseas transportation, bureaucratic customs procedures and weak links with international buyers. Lack of knowledge and the inability to meet international market requirements are, however, the most fundamental impediments to accessing foreign markets.

Fruits and vegetables are considered to be the high-value commodities with the fastest-growing market potential for developing countries. They account for almost 20 per cent of developing countries' agricultural exports (Olembo, 2004). In the three countries studied it is widely recognized that there is great potential for development in the fruit industry. It is, therefore, of paramount importance to address the key constraints on the development of this sector.

But other constraints continue to block the development and the expansion of the sector in these countries. These include tariff peaks and agricultural subsidies granted by industrialized countries to their farmers. For instance, despite the continuation of progress noted in agricultural trade negotiations, the average tariff applied by developed countries to agricultural imports from LDCs is currently at 3.8 per cent. The table below summarizes tariffs applied to fruits and vegetables from the three selected African LDCs in the Quad market. However, despite their importance, these issues are not covered by this study.

Average applied tariff rate on edible fruit and nuts products

from Guinea, Mozambique and Tanzania in the Quad Market

			EXPORTING COUNTRIES					
Reporter name	Product HS code	Tariff year	Guinea		Mozambique		Tanzania	
			AHS	MFN	AHS	MFN	AHS	MFN
Canada	07	2003	-	-	0	0	-	-
	08		-	-	0	0	0	0
Japan	07	2004	-	-	-	-	0	0
European Union	07	2003	0	10.28	0	13.64	0.86	5.42
	08		0	4.99	0	0.9	0	3.96
United States	07	2004	1.35	8.71	-	-	0	-
	08		0	0	0	0	0	0

Source: TRAINS database

AHS: Effectively applied rates, taking into consideration applicable (and available) preferential rates

- No trade (therefore the average tariff was not calculated)

In Tanzania and Guinea, exporters have already seen their produce rejected owing to lack of compliance. Standards may indeed constitute an ever-growing obstacle to exports from developing countries as the number and the scope of the requirements increase. Given the nature of the standards, which set requirements from “field to fork”, compliance involves all actors in the food chain, including producers, pickers, distributors and exporters.

Quality and safety standards are not only an issue for large-scale farmers. Safety standards should be applied to local production too as there are several reports of health problems resulting from food poisoning in developing countries.

Quality standards are also important for local market producers. Knowledge and the capacity to increase the quality of the production for the local market reduce losses during the production process as well as post-harvest losses during storage and transport. Not only does they provide higher earning for farmers, but they may also contribute to food security and improvement of the diet of national populations.

Additionally, in countries such as Kenya, smallholders are becoming increasingly involved in exports by organizing themselves into producers' marketing organizations and as outgrowers to larger farmers. Thus, the issue of standards is important to consumers, smallholders, large farmers and exporters.

In order to promote access to international markets it was therefore considered necessary to examine and describe the requirements set by the key standards organizing fruit production.

This study was designed to examine the quality and safety requirements set by quality and safety standards applicable to fruit production and to estimate the costs of compliance. Three countries were selected as case studies- the United Republic of Tanzania, Mozambique and Guinea. Field visits were carried out to the three countries to interview key stakeholders in the public and private sectors in order to evaluate the capacity to meet standards. The costs of compliance with standards for public institutions were based on the requirements set by international legislation. The costs for private producers were based, owing to the comprehensiveness of this protocol and the clarity of its requirements, on the requirements set by the EurepGap protocol. The key findings and recommendations are presented in the following section. The principal tools developed, which can be used to evaluate needs and costs of compliance in other countries, are presented in section 1.3.

1.2 Key findings and recommendations

At international level, standards are related to a large extent to the agreement on the application of Sanitary and Phytosanitary Measures (SPS Agreement) of the World Trade Organization (WTO). SPS measures include any measure applied to **protect human, animal or plant life or health**. There are three organizations responsible for setting the standards to meet the requirements of SPS: the Codex Alimentarius Commission for Food Safety, the International Plant Protection Convention (IPPC) for plant health and the Office International des Epizooties (OIE), which deals with animal health.[2]

Globalization of food markets and heightened consumer awareness of the potential food hazards have also led to the development of new, stricter legislation in importing countries, such as the new EU food safety legislation and private protocols such as EurepGap, which extend the concept of good agricultural practices (GAP) along the food chain to put greater emphasis on primary production practices.

1.2.1 Public sector

The analysis of the requirements imposed on the public sector set by international and regional standards highlights the need to set up a food control safety system that ensures that the food consumed locally and exported has the same level of safety as that produced in developed countries. Several institutions constitute this food control safety system. The key ones are the standard-setting

[2] The OIE is less relevant for the horticultural section and will not be treated in this study.

organization, which is responsible for standards elaboration and accreditation; the Ministry of Agriculture, responsible for all phytosanitary issues; and the Ministry of Health, responsible for ensuring the safety of food. These institutions are the focal points for the international standards institutions (standard-setting organization for the TBT Agreement and ISO member; Ministry of Agriculture for SPS; and Ministry of Health for Codex)

The establishment of a food control safety system implies that the following elements are put in place/reinforced. The detailed measures required for implementing these elements (by various institutions) are shown in 0. In each country section a summary of the costs of implementing these measures is provided in the form of a table.

1. **Revision of national legislation.** There is a need to revise legislation relating to food safety in order to harmonize it with international standards such as the SPS Agreement, Codex Alimentarius, IPPC and importing country or regional regulations such as the EU legislation. One important requirement under the SPS Agreement is that technical measures are allowed only when scientifically justified. This requirement establishes the need for a risk-based food control system on which the legislation should be based. Some countries have already initiated this process, but there is a large body of regulatory texts that needs to be developed to implement the legislation. On this matter, the IAPSC indicates that care should be taken to develop legislation that can be implemented with means available locally.
2. **Standards development.** It is important to develop standards for tropical fruits which are adequate to the varieties, production systems and climatic conditions in each country. For that purpose, the standard-setting organization must be reinforced. In addition to setting the appropriate standards, the organization should have the capacity to promote them and to implement systems to evaluate conformity with these standards. This requires investment in terms of staff recruitment, systems development, acquisition of IT and communication systems, and means of transport.
3. **Reinforcement of the export certification procedures**. The exporting country has to provide a phytosanitary certificate which proves to the importing country that its requirements in terms of SPS are satisfied. The accuracy of the phytosanitary certificate it issues is of paramount importance for international trade. If credibility is lost, this can result in stricter and more lengthy inspection procedures in importing countries and eventually loss of markets. It is for these reasons that countries must strengthen their export certification services.

   For that purpose, the plant protection organization must have adequate infrastructures (border control points), equipment (field testing equipment for inspectors, means of transport) and staff (sufficient number of inspectors with adequate training). A number of procedures for inspection must also be developed and implemented. The system should be clearly documented so that importing countries can evaluate it.

   Some countries have already started this process by increasing the number of border points. Others, such as Guinea, have established Export Promotion Agency to simplify export procedures including personnel for trade and inspection and quarantine services agriculture ministry. However, investments in infrastructure, equipment and staff to upgrade these structures are still needed. The costs are substantial, as is clearly shown in the cost tables.
4. **Reinforcement of import inspection and quarantine services.** Countries have to set up an adequate system to ensure that all food imported is safe for human consumption. This is important in terms of consumers' health but also in terms of international trade: the ISPM No. 20 set up requirements for import control; and EU legislation now requires that the food safety control system in place ensure the same level of safety as for the importing countries. Additionally, quarantine services must have the resources necessary for ensuring that imported fruit does not carry pests and diseases that may change the sanitary situation in the country and, subsequently, create obstacles to exports.

   To be able to comply with import controls, officers have identified the need to acquire testing equipment, train personnel, upgrade or construct quarantine and incineration facilities. The lack of

effective communication systems has also been reported as a key constraint. These systems are essential for setting up procedures for notification of non-compliance.

5. **Information, surveillance and alert systems.** It is a commitment under the SPS Agreement that countries set in place adequate systems to monitor pests, diseases and pesticide residues. Surveillance systems must also be set up to monitor the spread and outbreaks of food-borne diseases.

   These systems allow the detection of any problems in time to prevent their spread within the country and outside through exported commodities. If a problem is detected the country has the obligation to notify the relevant international organization. This involves mainly the ministries of agriculture and health, which have implemented the monitoring systems.

   The study highlights the fact that in most countries these systems are not in place yet as they require a high resource commitment. Firstly, there is a lack of information on pests and a lack of capacity to collect it. Both Mozambique and Guinea are in the process of establishing a pest status list. Neither has routine monitoring systems in place. These activities require the acquisition of testing equipment and training of staff in modern phytosanitary issues. They also require the acquisition of communication systems and the development of databases with pest and disease distribution data. A notification process and a database on food-borne diseases are also necessary.

6. **Reinforcement of laboratory capacity.** In order to verify the quality of produce exported and imported, the country must have the analytical capacity to evaluate various parameters, including the presence of diseases and pesticide residue analysis. The laboratories must be accredited to international level for the results of the analysis to be recognized worldwide. Without accreditation the Ministry of Health cannot prove the safety of the food consumed locally and the Ministry of Agriculture cannot provide strong justification for the phytosanitary certificates it issues.

   In the countries visited there are several laboratories, but at present none is accredited. Efforts should be thus made for key laboratories to reach accreditation level. There are some which are close to accreditation, such as the TBS laboratories in Tanzania and the CERE laboratory in Guinea.

   In terms of testing capacity, one constraint identified is the lack of pesticide residue testing capacity. It is recommended that this capacity be developed within the country, given the importance of LMRs level for exports to Europe.

   Given the number of laboratories, there is also a need to define the mandate and focus of the working areas of each laboratory.

7. **Strengthening of systems for registration and monitoring pesticide use and residues**. This is another of the commitments assumed under the SPS Agreement. It is an important element of the system as it ensures that pesticides used in the country are safe and used safely. It guarantees that the MRLs can be respected. There is usually a wide body of legislation regulating these issues; however, enforcement is difficult owing to lack of resources.

8. **International quarantine pests need to be controlled.** The presence of these pests in some parts of the world restricts exports to countries where they are not present. They constitute a barrier to trade and should be controlled. For that purpose, countries should implement programmes to control these pests. These programmes require technical expertise for the development of contingency plans for key pests and diseases and the acquisition of vehicles equipped for phytosanitary treatments.

9. **Promotion of plant and food safety standards**. This is a responsibility of all the institutions in the food safety control system. The Ministry of Agriculture is for instance, responsible for promoting good agricultural practices (GAP). Promotion of systems such as integrated pest management is, for instance, an essential component for the future of export agriculture. Technical and financial support could be sought to establish for instance pilot farms to demonstrate these management systems focusing on export fruits.

The Ministry of Health is responsible for promoting health standards. The Mozambique Ministry of Health, for example, has taken a step in this direction by publishing an inspection manual on food hygiene. The same type of publication could be developed to raise awareness of safety issues regarding fresh fruits and vegetables.

10. **Participation in international standard-setting organizations.** The international agreements encourage Governments to participate actively in international standard setting. This starts with the ratification of international treaties. The key treaties have, indeed, been signed by the three countries, the only exception being Mozambique, which is not a member of the IPPC.

    Participation also implies that country delegations attend the meetings of the SPS committee of the WTO, of Codex and of IPPC, as well as a number of regional meetings. Until now attendance at these meetings by developing countries has been irregular as countries may not have the resources to send delegates. Additionally, as officials interviewed noted, negotiations continue beyond the main meetings in working groups. The meetings and discussions in these kinds of forums are even more difficult for developing country members to follow.

    Participation, however, is not only about meeting attendance but also about having the tools to participate fully in the negotiations. This requires first and foremost that before each negotiation and according to the agenda, sector studies are developed within the country to allow the formulation of a national position on specific issues. To achieve that objective, committee meetings have also to be organized prior to the regional or international meetings. Training is also important for preparing officials for negotiations.

11. **Training and access to information.** To implement all the components of a quality control system, there is a pressing need for training. This can be in the form of training courses abroad, at the postgraduate level or in-house courses. The key idea is that knowledge required to implement the system evolves very quickly and demands continuous training. Another key aspect is access to updated information. This can be through subscription to journals and acquisition of books and other publications. Internet access was identified by all as one of the key instruments for training of officials. This requires acquisition of computers and networking.

    In terms of the private sector it is necessary to invest in ensuring relevant information flows to the producers about market requirements. The producers should be, for instance, regularly updated on the changes to the EU pesticide legislation, which has direct impacts on their production practices.

12. **Infrastructure upgrade.** In most cases there is a strong need to upgrade the infrastructures. In Mozambique, the standard-setting organization is pressed for space and is trying to relocate to a new building. The costs of upgrading and equipping the new infrastructure are high. In all the ministries of agriculture visited, the need to construct/upgrade border inspection points and equip them was recognized.

13. **Coordination.** Finally, one of the constraints identified was the lack of coordination between different ministries and committees. There is, therefore, a need to create the structures with the necessary legitimacy and power to coordinate the activities in the food safety domain.

    The need for coordination at African level was also recognized by the stakeholders interviewed and, especially, by representatives of donor countries. A coordinating body would be responsible for overseeing and coordinating activities at the subregional and national levels. It would also be responsible for ensuring the harmonization of food safety legislation for Africa and for setting up a rapid alert system to warn national authorities of potential food hazards.

Despite the need for reinforcement of food safety control systems, these have to be slim and efficient, based on risk-ranking systems to help in determining the areas where limited resources should be devoted.

1.2.2 Private sector

EurepGap protocol

At the same time as international and national regulation becomes more stringent, the private sector in importing countries is also setting its own standards. This is the case of the EurepGap protocol, a private certification system developed by a group of 22 large European retailers to encourage producers to implement standards more quickly. The EurepGap technical committee on fruits and vegetables, which is composed of buyers and suppliers' representatives, has developed the fruits and vegetables standard. There is no product label associated with EurepGap, but certification may become a requirement for most European retailers.

The protocol addresses both consumer concerns and the key requirements set by international and EU legislation. It provides an assurance to the importer even if the food control safety structures in the country are not in place. It also gives the farmers with a very clear set of rules to attain quality and a certification procedure which provides confidence to the buyer. The EurepGap protocol has 250 rules or control points. The key rules and the inputs needed to comply with them are described in a.

The key issues the protocol focuses on are food safety and traceability. It also includes, however, several of the requirements in terms of environmental and labour standards (although these have been criticized as being vague). In terms of food safety the key concern is pesticide use. This implies requirements in terms of product choice and application decisions based on integrated pest management practices, training on IPM and on safety for applicators, personal protection equipment, application equipment and infrastructure for storage. It requires the implementation of soil, water and biodiversity conservation. In that respect, it introduces the need for risk assessments and management plans, all of which must be clearly documented.

The costs of compliance

The costs of compliance with EurepGap were estimated through discussion with certified producers and other producers in the study countries. In each country section a summary of the costs is provided in the form of a table. The EurepGap protocol requires considerable investment and know-how. Firstly, the farms visited had qualified personnel that had received specific training in implementing the EurepGap protocol. The first task was to adapt the EurepGap checklist so that it was relevant to the context and produce a manual for field procedures adapted to the production system.

Growers faced high initial investment costs in constructing and upgrading structures such as toilets and baths, stores, shelters and offices. Pesticide stores were reported to be the more expensive ones in all cases owing to the stringent specifications for their construction. Some growers (who were already exporting before certification) had some infrastructure already in place and spent relatively less money on this.

Some producers foresee that the adoption of the protocol may lead to a decrease in variable costs owing to the reduction in pesticide use and the rational use of fertilizer, water and soil. However, this may only become visible in the long term. In fact, in the short term, variable costs may also increase owing to the increase in labour costs resulting from the recruitment of specialized professionals and extra worker time for record keeping, as well as management of conservation plans, provision of training and medical examinations. Other ongoing costs include annual costs of soil, water and pesticide analysis as well as inspection and certification costs.

Recommendations

The EurepGap protocol is easily adapted to large producers who have the human and financial resources to implement and monitor the EurepGap system. This has been the experience in most countries.

However, it is also possible to obtain a group certifications for produce marketing organizations (PMOs), which can be “a co-operative or other group of growers that have a legal entity that takes over responsibilities of EurepGap implementation for the associated and contracted growers through an internal control system”.

This possibility has led to the adoption of the protocol by smallholders in many parts of the world, including Europe and Africa. In Kenya, for instance, support from the Government, NGOs and producers' associations allowed more than 50,000 small outgrowers to apply for certification of various vegetables and fruits (avocado, fruit passion and mango). Examples exist for fruits in other African countries, such as pineapples in Ghana. The protocol has shown some degree of flexibility and producers have been able to devise their own strategies to implement protocol rules in accordance with their own conditions.

In the study countries selected, only large producers have so far adopted the protocol. Some are, however, developing plans to set up outgrower schemes with smallholders which will apply for certification as PMOs. For such schemes to be successful and multiply, it is necessary that Governments provide their support or an enabling environment for others to take the lead.

One of the constraints on the adoption of the protocol identified during this study is the lack of knowledge about it. It is, therefore, important to provide information to producers and public officials about the protocol. These activities should not be restricted to EurepGap as it is not the only protocol; however, owing to its uptake in the world and comprehensiveness it is a good example to start with.

Another important constraint is the absence of local certification companies for EurepGap. Certification bodies wishing to certify against EurepGap need to be accredited by FoodPLUS, the company which serves as the legal owner of the protocol. A prerequisite for accreditation is an ISO 65/EN 45011 accreditation. Exporters contacted in Tanzania and Mozambique said they have had to resort to multinational companies for certification. This is often expensive. One way to address this problem would be to promote the creation of local certification companies which can provide certification services to farmers at adequate prices. Creating local technical assistance companies would also help farmers achieve compliance.

Developing country stakeholders need to participate actively in the EurepGap to ensure that their particular conditions are taken into account in the development of the standard. The organization has, for instance, set up Technical Working Groups to bring its activities closer to the grower and to gain input from national experts. There are, however, no African delegates in the fruits and vegetables working group. Another avenue is to participate as a supplier member or associate member. At present there are only a few supplier members from developing countries and a couple of European and African NGOs as associate members. Participation at this level should therefore be increased so that the interests of African producers are adequately represented.

Lastly, it has to be pointed out that, although the study focused on EurepGap, this does not mean that certification with this protocol will give the producer advantages. Before making the requisite investments, individual growers must decide which set of rules or which protocol will serve their specific objectives. Other protocols such as Fairtrade or Organic Standards may give them a better advantage in the market. The EurepGap is used here only as a proxy for calculating the costs for producers of complying with quality and safety standards, and for making recommendations on what support producers may need.

1.3 Principal tools developed

This study has developed a set of tools that can be used by stakeholders to improve their food safety control system and to participate in world markets.

For the public sector

(1) Information on the key elements of a food control system (as required by international standards) that the public sector needs to implement. This information is provided for each of the key institutions of a food control system.

(2) An estimation of the costs of implementing such a system.

For the private sector

(1) Information on the key requirements set by the EurepGap protocol, one of the key protocols required by European buyers.

(2) Information on the costs of compliance based on discussions with certified producers.

The grids describing the key elements of the food control system (appendix 2), the activities to achieve them and the inputs required are useful tools to evaluate the capacity and needs of food control systems in other countries. Likewise, the EurepGap requirements grid (appendix 3) provide a useful tool for farmers to carry out a self-assessment to estimate the costs of compliance with the protocol for their specific case. It also provides them with information on costs incurred by other farmers in implementing the protocol.

The quantification of compliance costs is also useful in defining the position of the countries studied in international negotiations. Equally importantly, the costs analysis provides a real and current picture when trying to obtain support from international institutions and developed countries for efforts public and for private sector compliance with international standards.

2 INTRODUCTION

In recent years, agricultural exports to developed-country markets have emerged as a potentially major source of export growth for many developing countries. Exploiting this potential, however, poses many challenges. The capacity of developing country exporters to enter these markets depends critically on their ability to meet stringent food safety standards imposed by developed countries. Not only are these standards stringent, but they are increasingly so. They now go well beyond traditional quality standards, as suppliers must pay closer attention to the responsible use of agrochemicals, energy, water and wastes, as well as social and environmental impact. These standards are significantly higher than those prevailing in developing countries, they are subject to frequent changes and are, ultimately, often difficult and costly to meet.

It has to be noted, however, that the globalization of markets and the acceleration of technological changes has led to a definite redirection by most developed countries in their food control organization. Governments and economic agents in developed countries are also having to invest heavily in the reform of their food control systems (see, for instance, the costs of the implementation of new food safety legislation in the EU and establishing food safety agencies). In some developing countries, however, and particularly in some African cases, the levels of difficulty and cost are heightened by the lack of legislation, lack of facilities to implement food legislation (regulatory infrastructure and laboratories), lack of trained people and lack of funds to strengthen such systems.

This study aims to identify and quantify the compliance costs for tropical fruits faced by a group of African LDCs. It will present a framework that will facilitate estimation of costs of compliance for exporters that are associated with agricultural safety standards and SPS. These costs of compliance will be understood as additional costs incurred by exporters in meeting the requirements laid upon them in complying with a given regulation in the importing country.

Compliance with agricultural standards and SPS in export markets can also impose costs on public institutions. For instance, Governments may be required to invest in upgrading of conformity assessment facilities and procedures to certify (e.g. laboratories, certifiers, etc.) that exported products are in conformity with the importing country's requirements.

The study focuses on three African LDCs (Tanzania, Mozambique and Guinea Conakry) and was prepared in cooperation with producers, exporters, business bodies, enterprises and institutions. It aims to contribute to the formulation of concrete recommendations for capacity-building to ensure the compliance of production and distribution systems in the countries concerned. National workshops will be conducted on the basis of the findings stemming from the studies undertaken in each country.

3 METHODS

3.1 General methodology

In order to fully capture the costs of quality standards and SPS measures for exports of African tropical fruit it is necessary to gather data on both “macro” costs and the firm-level expenses. Macro costs are those incurred by the public administration to meet the demands of importing countries while micro costs are those incurred by producers and traders for the same purpose.

1. Identify the quality standards and SPS measures applicable in the major export markets by importing countries and firms (distributors); analyse their key features and the key requirements set by these standards.
2. Analyse the food quality control systems in the selected countries. At the public level, determine which are the procedures in place to implement them: examine institutional capacity, adequacy of legislation and analytical capacity.

At the private level, identify the key producers with export capacity, describe their organization and the constraints they face. Identify those producers and exporters which comply with international standards.

3. Develop an inquiry grid defining the key activities which need to be implemented by the public sector (macro level) and by the private sector (micro level) in order to meet the requirements of international standards.

   - "Macro" compliance costs. These are the costs incurred by public and quasi-public agencies and include costs of legislation development, training, infrastructure and equipment upgrading, inspection, testing, and other monitoring and control mechanisms.

   The cost inquiry grids for public institutions define:

   - The **key components** that should be present in a food control system;
   - The **activities** that need to be carried out to implement these components; and
   - The **inputs** needed to carry out these activities.

   The inquiry grids for each of the institutions analysed are presented in detail in appendix 2.

   - Firm-level "micro" compliance costs. These are the costs incurred by producers and exporters in order to comply with demands of importing countries and private clients. They include changes in producing systems, infrastructure building and upgrading, training, consultancy services and certification costs. This study has focused on the costs of compliance with the EurepGap protocol, owing to its comprehensiveness and wide acceptance. The EurepGap was designed to accommodate the requirements of set out by international standards as well EU regulations. It is based on concepts such as HACCP, risk analysis and the field-to-fork approach. It is, for these reasons, a good proxy to estimate costs of compliance with standards incurred by producers.

   A cost inquiry grid, based on the key requirements of the EurepGap protocol, was developed and is presented in detail in Table 23.

4. Conduct a field mission to interview key stakeholders and collect relevant documents (previous project documents and budgets) on the key cost components. Cost estimates for public institutions were obtained during the interviews conducted with the staff in each institution.

   Given that, in the three countries selected for the analysis, very few fruit producers are exporting, and costs of compliance are based on the analysis of specific case studies. In Mozambique and Tanzania, inputs and cost estimates for each of these requirements were obtained through discussions with producers already complying with the protocol. In Guinea, given that there are no certified producers yet (only one exporter undergoing the certification process), costs were estimated during group discussions with producers' organizations and public authorities.

5. Identify how developed countries can best assist the selected countries (and other developing countries) with appropriate technical support and expertise to improve domestic capacity in this area.

6. Conduct a regional workshop based on the findings stemming from studies undertaken in the three selected countries.

Finally, in analysing the results of the analysis it is important to note that the cost estimates presented are only valid under a particular set of assumptions. The most important results are the cost inquiry grids developed which are useful tools for:

- Each institution to analyse in detail its own requirements and compliance costs;
- Private producers to identify the requirements of EurepGap and to estimate how much it would cost them to meet these requirements.

This methodology and tools developed may be used in other countries to estimate compliance costs.

3.2 Field mission

In coordination with the focal person in each country, the key respondents were identified in each country. Key interviewees were contacted in advance, and a summary of the project was sent to them as well as the list of questions and documents needed (see appendix 1). The respondents were informed that the project aimed to collect costs of compliance with food quality standards and were asked to produce previous or planned budgets for governmental institutions, and documents (e.g. project proposal to international donors) with cost estimates for institutional strengthening.

The interviews with the key governmental institutions (Bureau of Standards, Ministry of Agriculture and Ministry of Health) lasted two to three hours. The other interviews were shorter. A visit was organized to a key producing area in each country to meet producers who are exporting and also those medium- to large-scale farmers who are not exporting, so as to assess the constraints they face.

During the interviews the respondents were queried about the changes needed to comply with international standards. For each activity identifies, an estimate of the inputs and costs was sought. The interviews with public institutions were based in the inquiry grids presented in appendix 2. The interviews conducted with producers were based on the inquiry grids presented in appendix 3.

3.2.1 Mission to Tanzania

The mission took place in Tanzania from 28 November to 7 December 2004. It was organized and conducted with the support of a senior trade officer of the Tanzanian Ministry of Industry and Trade, Mr. Ismael Mfinanga. The interviews with the governmental institutions, associations and private firms were carried out in Dar es Salaam.

A visit was organized to the key producing areas around Arusha and Moshi to interview producers. Interviews were conducted with senior personnel at Tanzania Plantations, a large mango-producing farm that is not exporting, and with the Executive Director of Swan Agricultural Investments, who is in the process of developing an export-oriented company. Estimations of the costs of compliance with EurepGap were collected through interviews with managers and quality officers in two large vegetable exporting companies- Gomba Estates and Serengetti Fresh.

3.2.2 Mission to Mozambique

The mission to Mozambique took place from 7 until 18 December 2004. It was organized and carried out with the support of a representative of the Institute for the Promotion of Exports (IPEX)[3], Mr. Ricardo Trindade. A meeting was held with the Director of the Trade Information and Market Development Division to identify the key stakeholders to interview.

Key producers interviewed included the only company exporting at the present time to Europe, Citrum, and the manager of Vanduzi, a company which established itself in the Chimoio area and is EurepGap- and BRC-compliant. Two senior managers at the fruit producers' cooperative, Frutisul, were also interviewed to identify the key problems that fruit producers face in Mozambique.

3.2.3 Mission to Guinea

The mission to Guinea took place from the 8 to 20 January 2005. It was organized and carried out with the support of the Ministry of Commerce, Industry and SMEs represented by Mrs. Zenab Diallo, Governor of the Common Fund for Commodities (CFC), and Mr. Abdoulaye Barry, Coordinator of CFC project. Dr. Souleymane Berete, of the National Directorate of Commerce and Competition, also accompanied the mission closely.

[3] IPEX is under the authority of the Ministry of Industry and Trade

The interviews with public institutions were conducted in the capital, Conakry. An interview was also conducted with senior managers at the headquarters SOGEPAM, a large company which is organizing the sector in order to start fruit exports in the near future. It already exports other commodities such as coffee and cocoa.

Two field visits were organized to meet producers and producers' organizations in Coyah and Kindia. A meeting was also held with scientists from the Agronomic Research Institute of Foulaya in Kindia. A visit was organized to the packing house of the sole company exporting fresh fruits to Europe at the present time, SIPEF. No senior manager was met because they were out of the country. SIPEF is an exporting company in the process of obtaining EurepGap certification. Equally important was the visit to Nabekambio, a company which used to export organic fruits to Europe. The problems of standards compliance were discussed at length. Discussions were also held with farmers' associations such as UPFGM, the Cooperative of Banana Producers and APEK, and with the FABIK integrated farm. Despite the fact that these associations are not exporting, they have plans to do so. During the group meetings, EurepGap requirements were presented and the costs of compliance with EurepGap were estimated.

4 ANALYSIS OF REQUIREMENTS SET BY FOOD QUALITY STANDARDS

4.1 Inventory of standards

There are an increasing number of standards including standards set by international organizations, national governments or regional organizations, producers and retailers, and NGOs. In addition, consumers' concerns have given rise to a number of certification or labelling initiatives. These standards apply to different levels in the food chain, and some reach down the commodity chain to producers. The following table identifies the key standards governing tropical and horticultural crops.

Table 1 Inventory of standards applicable to African fruit exporters

TYPE OF STANDARD	INSTITUTION	STANDARDS
International agreements related to trade and standards	World Trade Organization	Agreement on SPS Agreement on TBT
	Codex Alimentarius Commission Regional Coordination Committee for Africa	Codex Standards, Guidelines and Codes of Practice Maximum Residue Levels of Pesticides
	International Plant Protection Convention	International Standards for Phytosanitary Measures (ISPM)
	International Standardization Organization (ISO)	ISO Standards on: Agriculture Environment, health protection and safety Food technology Packaging and distribution of goods
	Southern Africa Development Community	SADC Trade Protocol SPS/Food Safety Annex
Importing country rules	European Union	Legislation on food safety Legislation on crop protection products Legislation on phytosanitary requirements
Producer protocols	COLEACP (EU–ACP stakeholders in the horticultural trade)	COLEACP harmonized framework
Importing firms' requirements (key protocols applied)	EurepGap Euro-Retailer Produce Working Group British Retail Consortium (BRC)	EurepGap (European Retailers Protocol for Good Agricultural Practice) BRC Protocol
	Other retailer protocols*	Global Foods Safety Initiative (GFSI) Assured Produce Scheme (APS) Marks & Spencer Farm to Fork Tesco's Nature's Choice Shoprite
Consumers' preferences	Fairtrade labelling	Fairtrade labelling organizations International (FLO) standards
	Organic agriculture	International Federation of Organic Agricultural Movements (IFOAM) – IFOAM Basic Standards (IBS) EU organic standards
International Conventions, "codes of conduct" or guidelines	EU/USA/FAO/Codex	HACCP (Hazard Analysis and Critical Control Point)

The following section analyses in more detail the requirements that national food control quality systems have to meet in order to comply with key food standards. The analysis presents those standards which are the most prevalent in Africa and which have the most significant impact on the countries to be studied.

The international framework regarding food safety is guided principally by the International Plant Protection Convention (IPPC), the Codex Alimentarius and the International Office of Epizootics

(OIE) under the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement), the World Health Organization (WHO) and the Food and Agriculture Organization (FAO).

SPS – The most important international agreements related to food standards are those of the WTO, which include the agreement on the application of sanitary and phytosanitary (SPS) measures. Compliance with the conditions of the SPS Agreement is a basic requirement of countries seeking to export agricultural produce. Tanzania, Mozambique and Guinea are all members the WTO (Table 2) and therefore have to comply with the requirements of the SPS agreement.

Table 2 Membership of international organizations

	WTO	IPPC	CODEX	ISO	ARSO
TANZANIA	Member	Member	Member	Member body	Member
MOZAMBIQUE	Member		Member	Corresponding member	
GUINEA	Member	Member	Member	Corresponding member	Member

IPPC – The International Plant Protection Convention (IPPC) is a multilateral treaty deposited with the Director General of the FAO. The SPS agreement identifies the IPPC as the organization responsible for elaborating the standards that will help ensure that the measures implemented by each country to protect plant health are harmonized and that they do not constitute barriers to trade. It is therefore an important treaty in international trade. Guinea became a member in 1991 and Tanzania in 2005. Mozambique is not a member.

Codex Standards – The Codex Alimentarius is the recognized international body for food standards. Codex standards, guidelines and codes of practice are recognized by the WTO as references for the settlement of disputes in international trade. For that reason, the food safety standards of most countries are based on the Codex. All three countries in this study are members of the Codex.

Other standards of importance for African exports include the standards set by EU legislation and private protocols such as EurepGap.

EU legislation – Developments in markets such as the Middle East, the US and Japan are an important for the diversification of African countries' export market. However, at present, EU legislation is of particularly importance for African countries as the EU is the main destination of agricultural exports. The fruit industry is especially dependent on the EU market with 80 per cent of total exports going to the EU (TSG, 2004). Given that most exports from LDCs enter the EU market duty-free, changes in EU quality policies are the most likely to influence export capacity.

EurepGap In the area of fruits and vegetables, retailers are advocating compliance with standards such as EUREPGAP, BRC, Nature's Choice and others. Given the increasing role of large supermarkets in importing food into Europe (these retailers currently represent around 80 per cent of imports), the protocols they impose are now of paramount importance. Of these, one of the most widely accepted is the EurepGap.

4.2 Requirements set by the SPS agreement

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) took effect in January 1995 when the WTO began its operations. This Agreement addresses the proper application of food safety, animal health and plant protection measures as they relate to international agricultural trade. Article 3 states that "members shall base their phytosanitary measures in international standards or justify deviations through risk analysis".

Compliance with the SPS agreement constitutes a commitment on the part of the member States of the WTO in this field. Compliance with SPS regulations involves several macro costs that correspond to particular features of the WTO Agreement on SPS measures, which are described below:

The SPS contains 14 articles and three annexes.

Standards development: Firstly, the agreement recommends that SPS measures be based on established standards or be recommended by the appropriate bodies. This involves the development of standards with costs in terms of, amongst others, staff time, training and consultation exercises.

Risk analysis: The requirement under the SPS agreement that technical measures be allowed only when scientifically justified establishes the need for a risk-based food control system in order to comply with trading requirements.

Participation in international standard setting: Secondly, the agreement recommends that developing country members participate actively in international standard-setting. This implies meeting attendance and, more importantly, a technical and negotiating capacity to participate in the standard-setting process. The development of this capacity requires that people be trained and provided with the means to access information.

Strengthening of national conformity assessment bodies. Despite the fact that the SPS agreement encourages importing countries to accept the results of conformity-assessment procedures carried out in exporting countries, exports from developing countries encounter market access problems due to the lack of credibility of conformity assessment bodies. In most LDCs, these bodies are usually under-resourced and costs must therefore be incurred to upgrade them.

4.3 Requirements set by the IPPC

The convention, adopted in 1952, aimed to "secure common and effective action to prevent the spread and introduction of pests of plants and plant products and to promote appropriate measures for their control (article 1 of the IPPC)". The agreement has, however, changed significantly since then and its scope is wider.

The last amendment was made in 1997, to reflect the complementary role of the Convention in relation to the SPS agreement: "the SPS agreement makes provision for plant protection in a trade agreement, the IPPC makes provisions for trade in a plant protection agreement". The IPPC also interacts very closely with the Codex.

The 1997 amendment establishes the convention as a forum for harmonizing phytosanitary measures used in regulating international trade. The changes also reflected the need to update some phytosanitary concepts. The Convention also gives particular importance to the provision of technical assistance and information exchange.

The Convention's aim is to ensure that "countries establish and implement effective phytosanitary systems that are consistent with international obligations, particularly, but not exclusively, as regards the application of phytosanitary measures that affect trade". It describes the key elements of national plant protection responsibilities and is responsible for elaborating International Standards for Phytosanitary Measures (ISPM). The Convention is legally binding but the standards are not. The Convention has also a dispute settlement mechanism under which measures set by one country may be challenged as unjustified barriers to trade.

Key obligations of the IPPC are:

- To set up and administer a National Plant Protection Organization (NPPO);
- To have an IPPC contact point;
- To certify exports;
- To regulate imports;
- To cooperate internationally through information sharing on pests and phytosanitary regulations;

- To develop and certify conformity with phytosanitary standards.

Given that the ISPM standards are recognized by the WTO, it is very important that all members participate in the standard-setting process. The Convention meets annually.

There are three different types of standards: reference, concept and specific (commodity or pest). Twenty-one ISPM have been adopted since 1992. The full list can be found at www.ippc.int.

Table 3. International standards for phytosanitary measures

Type of standard	ISPM
Reference	Glossary of phytosanitary terns
Concept	Principle of plant quarantine as related to international trade
	Pest risk analysis
	Guidelines for phytosanitary certificates
	Export certification system
	Surveillance
	Use of integrated measures in a systems approach for pest risk management
Specific	Guidelines for regulating wood packaging (not relevant in the context of fruit production)

4.4 Requirement set by the Codex Alimentarius

The Codex was created by FAO and WHO in 1963 to develop food standards and guidelines that will protect consumer health. It is intended to guide the elaboration of national legislation. Codex standards are an important instrument for the harmonization of food standards and therefore have a great impact on international food trade. Given that they have become an international reference, health and food control authorities often base legislation on these standards. Where this is not the case, Governments are urged to consider the Codex when developing their national legislation.

The Codex comprises standards for commodities. In this category are included 21 standards for fresh fruits and vegetables, including pineapple, mango, and bananas. Each Codex standard defines essential quality factors. It also includes provisions for food hygiene, food additives, methods of analysis and sampling, standards for pesticides (evaluation and maximum residue limits) and contaminants.

There is also a general standard for labelling. This general standard is based on an international consensus on what information the label should contain. Countries are thus urged to use it as the basis for their legislation, keeping differences to a minimum.

A country may be accepted in the following way:

Full acceptance: This means that the country will ensure that a commodity complying with the standard will be freely distributed (unless there are concerns about health risks which are not dealt with by the standard). The country will, in the case of full acceptance, be responsible for ensuring that distribution of products not complying with the standard will not be permitted.

Acceptance with specified deviations: The country may accept with specified deviations which must be clearly stated. The country must then guarantee that products complying with the standard as qualified by the deviations can be freely distributed and that non-compliant produce does not circulate.

A country which accepts a standard is responsible for the application of the provisions of the standard as accepted to all locally produced and imported products. The country is also responsible for promoting the standards and providing assistance to exporters to enable them to comply with standards accepted by importing countries.

The Codex also includes recommendations in the form of codes of hygienic and technological practice. This is the case for the recommended code for general principles of food hygiene which includes a section on primary production and packaging and transport of tropical fresh fruits and vegetables.

4.5 Requirements set by the EU legislation

Increased concern about food safety, fuelled by high-profile food scares in 2000, led to the revision of the EU food safety legislation. A new comprehensive food safety policy was developed to guarantee food safety from "farm to fork". This involves the adoption of an integrated approach to food safety covering all aspects of the food chain, from primary on-farm production, on-farm and off-farm storage, processing, transport and sale. The key difference with previous safety systems lies in the fact that safety assessment is not limited to product inspections as before but implies an assessment of the effectiveness of national food safety control systems.

Failure to comply with the legislation may lead to complete exclusion from EU food and agricultural products markets. This would be particularly damaging in the case of African countries.

The increased stringency in the requirements presents a challenge both for public authorities and the private sector producers and exporters in third-party countries. The EU is financing a number of projects to help ACP (African, Caribbean and Pacific) countries meet these requirements. However, the European Commission acknowledges that more should be done and that the new regulation expands the scope for EU assistance. Within the context of the Economic Partnerships Agreement (EPA) negotiations there are provisions for the allocation of resources for capacity building. For these to be realized, however, there is an urgent need to identify and quantify the key costs involved in meeting the EU food safety standards. Such information would be an important tool for EPA negotiators to apply for additional European Development Funds (EDF).

This revision has led to the consolidation of several directives. The key bodies of legislation are the following:

Food and Feed Regulation. This requires that all exporting countries have a food safety control system providing the same level of guarantees as those in the EU. It also requires the existence of a single authority to oversee all food safety issues.

This regulation involves high costs for the public sector in terms of human, equipment and infrastructure resources.

General Food Law. The law aims to ensure the safety of all food consumed in the EU. It imposes the requirement of traceability, which means that there have to be records making it possible to trace all products back to their origin. This imposes costs on the public and private sectors as additional records have to be kept, and further analysis and risk assessments have to be conducted.

Maximum Residue Level Directive. This seeks to harmonize the different MRL levels in the EU countries. This requires a revaluation of all the substances, leading to the withdrawal of several components. Very often the new substances are more expensive than the older ones. This directive imposes additional costs in the establishment of internationally accredited laboratories, laboratory analysis, acquisition of modern and usually more expensive pesticides.

4.6 Requirements set by EurepGap

The key retailer protocol, EurepGap, was developed by the Euro-retailer produce working group (Eurep), a group formed by 22 of the more demanding retailers, especially British, Scandinavian and Swiss, together with large-scale fresh produce suppliers and producers.[4] The EurepGap protocol (Eurep Good Agricultural Practice) sets the standards for the production of fruits and vegetables at farm level. It is accredited by ISO 65 (EN 45011). Certification bodies wishing to certify producers against EurepGap need to be accredited by FoodPLUS, a company that serves as legal owner of the normative document and hosts the EUREP secretariat. There is no product label associated with EurepGap certification and no premium; however, certification may become a prerequisite for exports to Europe.

[4] There are associate members such as suppliers of agrochemicals, certification bodies and consultancy firms, which may participate in the meetings.

The main focus of the EurepGap norms is on food safety and traceability. Half of the criteria refer to the correct use of chemicals during crop production and post-harvest treatment. It also addresses environmental (integrated pest management (IPM) practices) and some social (issues on workers health) dimensions.[5]

This protocol covers 258 different aspects of production, including training, soil characteristics, climatic conditions, infrastructure, machinery and equipment, personal hygiene, seeds and planters, soil and other operations. The key requirements of the protocol are analysed in detail in Table 23.

These requirements imply high investment costs in terms of infrastructure, namely construction and upgrading of structures such as toilets and baths, chemical stores, shelters and offices. These will vary according to the infrastructure that was already in place. It requires equally costs with adaptation of the EurepGap checklist and systems development, recruitment of qualified staff and training in the implementation of the protocol, IPM and safety issues. These costs are easier for large commercial farmers to meet. In most African countries, however, and in particular the countries studied, there is a large number of medium sized to very small growers. In some cases, these growers act as outgrowers to large farmers. In order to facilitate compliance and certification of these types of systems, the revised EurepGap regulation has developed a mechanism which allows the certification of producers' organizations.

However, the constraints to compliance are clearly higher for smallholders given that they do not dispose of the technical qualification necessary nor the capital to invest. Such farmers will need support in terms of systems development, qualified services and financial support for infrastructure development and input acquisition. This support is very important if the economic benefits of exports oriented agriculture are to be redistributed.

In the countries studies, there are only isolated cases of EurepGap certified firms: the field mission revealed two EurepGap certified vegetable producers in Tanzania, one vegetable producer in the assessment phase in Mozambique and one fruit exporter in Guinea. There are, however, two countries, Kenya and South Africa, neighbouring two of those selected for the project, Tanzania and Mozambique, where EurepGap certification is well underway. They provide an important example to demonstrate how certification may work in the African context. The Kenyan case is especially interesting to illustrate how small-scale farmers' certification schemes can be operated.

[5] These concerns are addressed in more detail by other retailer protocols and consumer concerns

Kenya

A large number of farms are EurepGap-certified in Kenya. The Horticulture Crops Development Authority (HCDA) has had a leading role in driving EurepGap compliance, which is seen as an opportunity to improve the competitiveness of the horticultural sector in Kenya (Dr. Wilson Songa, HCDA, Freshinfo, 2004). Not only are the large farms certified but also more than 50,000 small outgrowers are moving towards compliance (Freshinfo, 2004). The key products include fine beans, mange tout, Asian vegetables, avocado, passion fruit and mango.

Dr. Stephen New, director of the USAID-financed Horticultural Development Centre (HDC), sees EurepGap and traceability requirements as an opportunity to reduce rural poverty since the horticultural sector now employs more than 100,000 farmers and employees.

The Ministry of Agriculture and the HCDA have organized EurepGap training programmes for smallholders. ICIPE was also involved in training private sector service providers to provide advice and training on traceability aspects and inputs to smallholder outgrower groups associated with export companies. ICIPE also supported the creation of a local certification company for EurepGap, Africert.

The HDC provide further support to test and set up outgrower certification schemes which will require the collaboration of all stakeholders. The first models for EurepGap certification of outgrowers started being tested in May 2004 and the first group of growers was certified in November. The initial certification cost was estimated at US$ 25–30 million.

It is reported that a study by the Ethical Trade Initiative in Kenya has confirmed the positive impact of horticulture in rural communities. There are three certification companies in Kenya.

South Africa

In South Africa, it is indicated that there are almost 2,000 EurepGap certified growers - the third largest number after Spain and the United kingdom and the second in terms of area after the UK. The Department of Agriculture has gone a step further and introduced the “official export food safety control system for regulated products of plant origin” to be implemented in March 2005. Thus, all fruits and vegetables exports from South Africa will be following the standards required by the EU markets. As far as fresh produce goes, the system requires that:

- GAP be followed at farm level;
- There be GHP for packing houses on farms;
- There be HACCP principles for packing houses off farm.

The Perishable Products Export Control Board (PPECB) is responsible for auditing all actors in the food chain to ensure compliance with national and EU food safety legislation.

Other retailers' protocols

Tesco has developed its own protocol, Nature’s Choice. It is so far only followed by a very limited number of producers, but all those selling to Tesco may be forced to comply with it in the future. This protocol integrates many of the EurepGap requirements but is more demanding regarding pesticide control and labour. Furthermore, Nature’s Choice is reviewed every year and the number of requirements is increasing. It requires one inspection per year and the certification fee is lower than that of EurepGap. During this study, only one company, Gomba Estate, mentioned its intention to adhere to this protocol.

Fair trade protocols concentrate on labour conditions, taking a step further the requirements of EurepGap concerning this aspect of production. A number of conditions regarding how workers are treated, work contracts and permits must be fulfilled. The field missions revealed that measures are being taken in Mozambique to certifie vegetable farmers to this protocol.

BRC Food Standards concentrates on the packing house and are followed widely across the world, mainly by producers exporting to the UK. It is revised every two years and the new version is to be

implemented in June 2005. The new version reflects changes in EU legislation, including traceability, products segregation, and the process through which the product is managed across the supply chain. The German equivalent of the BRC is International Food Standard (IFS). Producers certified by EurepGap and exporting to Europe, in general, also have their packing house operation certified by BRC. This is, for instance, the case for the EurepGap producers in Tanzania.

5 TANZANIA

5.1 Trade and agricultural production

Agriculture is the major economic activity in Tanzania, contributing to almost 50 per cent of GDP (www.sadcreview.com). It is mainly a subsistence, traditional, smallholder-based and rain-fed activity. A majority of small-scale producers undertake horticulture production; however, 80 per cent of production is for local consumption. The remaining 20 per cent is processed or exported to neighbouring countries, for example avocado exported to Kenya.

There is, however, a high potential for fruit exports owing to favourable climatic conditions. The fruits identified as having the highest potential are pineapples, passion fruit, citrus fruits, mangoes, peaches, pears and bananas. Vegetables with export potential include tomatoes, spinach, cabbage and okra (see Sector Strategy for Horticultural Production and Exports).

Government spending in the sector has increased in recent years in a bid to promote production and exports. Several measures, including an Export Credit Guarantee Scheme, have been set up to expand access to financial resources and reduce agricultural taxes.

Export destinations could come to include neighbouring countries, the Middle East and Europe. The Middle East offers opportunities on account of its proximity. This market is less strict than the other markets on SPS requirements, although the Ministries of Health in each importing country have strict food safety standards. Exports to the United States are difficult because conditions are very strict and the final price do not pay the costs of meeting them. The Japanese market is also difficult to access as significant market research is needed to identify client preferences, and language is also a barrier.

At the present time, there are few players in the fruit sector. The cut flower market is more developed, representing a US$ 20 million market. According to the Board of External Trade (BET), however, Tanzania has the potential to become a key supplier of fruits to Europe. India and Pakistan can supply mangoes until September and Tanzania can supply after that window. Kenya supplies Europe during the same period, but quantity is not enough to satisfy the needs of the market. There is also a good potential for passion fruits, although in smaller quantities.

The following problems have been identified as the key obstacles to exports:

Supply side

- Lack of commercial farming;
- Low productivity due to dependence on unreliable and irregular weather conditions. Both crops and livestock are adversely affected by periodic droughts. The lack of irrigation makes it difficult to ensure the constant production required by export market;
- Falling land productivity due to application of poor technology. Little use of inputs, namely pesticides, which leads to high fruit losses;
- Varieties inadequate to the international market;
- Market information not available.

Export logistics

- Lack of storage capacity: a small cool storage facility was recently built at the airport but the capacity is not enough; lack of a good road network;
- Cargo capacity is not in place;
- Airlifting: there are no consecutive flights; an agreement was recently signed with KLM for the transport of fruits and vegetables from Kilimanjaro airport to the Netherlands.
- Freight charges prohibitively high;
- Absence of accredited laboratories;

- Lack of technical support: it was reported, for instance, that insects have been found in shipments of cut-flowers.

5.2 Food safety control system

5.2.1 Institutions

In Tanzania, the institutions involved in the regulatory system and standard-setting system are the Tanzania Bureau of Standards (TBS) , under the authority of the Ministry of Industry and Trade, the Plant Health Services (PHS) in the Ministry of Agriculture and the Tanzania Food and Drugs Authority (TFDA) under the Ministry of Health.

- The **Tanzania Bureau of Standards** (TBS) is the institution responsible for standard setting in Tanzania. It is a member of ISO and is a certification body for ISO standards. The TBS is the designated WTO–TBT/SPS National Enquiry Point for Tanzania and is also the National Codex Focal Point. The institution was a test house with the capacity to carry out chemical and biochemical analysis. The requirements of the laboratories are analysed in section 5.2.2.

  Fruit standards are developed by the Agriculture and Food Section in line with Codex standards. At present, a draft version of the standards for citrus production and pineapple production has been produced and the consultation process is under way. Several other standards need still to be developed.

  The TBS has a section on technical assistance to importers and exporters, under the Quality Management Unit, which is closely linked to the SPS National Enquiry Point. These two structures are responsible for providing trade information about local and foreign standards. For these sections to be operate efficiently they need to be strengthened in terms of human resources and IT and communication systems.

  The attributions of technical assistance to importers also include the organization of training sessions for food industry quality control managers in food quality assurance systems such as HACCP. TBS is also responsible for the promotion of standards through the organization of seminars throughout the country. Financial resources need to be sought for that purpose.

- The **Plant Health Services** (PHS) in the Ministry of Agriculture is the National Plant Protection Organization. These services are responsible for surveillance, quarantine, inspection and issuing of the Phytosanitary Certificate. The Post Entry Quarantine Station at the Tropical Pesticide Research Institute (TPRI) also issues Phytosanitary Certificates to farmers in the Arusha region. These certificates certify the absence of pests and pest damage at product level. At present, process inspections are carried out for seeds and flowers only. There is no inspection during the production process.

  To implement inspection procedures at field level, the PHS would need to recruit additional staff. The PHS has around 150 inspectors at key border points. It was estimated that at least 30 more would be needed to cover the key fruit production areas. The inspectors would also need to be equipped with field testing equipment.

  The PHS is also responsible for promoting quality of the production. To achieve this, the PHS should have the resources to provide training to farmers on quality systems such as HACCP, and to organize workshops on each commodity to inform producers about market requirements they have to meet and on appropriate production practices.

  During 2003, Tanzania participated in a regional workshop organized by FAO to promote understanding and application of the Phytosanitary Capacity Evaluation (PCE) tool.[6] It is also

[6] The FAO has developed the Phytosanitary Capacity Evaluation (PCE) tool to enable countries to undertake assessment of the capacity of their plant protection organizations.

believed that FAO carried out a PCE in Tanzania during the same year. This evaluation could be valuable for any subsequent evaluation exercise.

- The **TFDA** is the body responsible for controlling the quality, safety and effectiveness of drugs, herbal drugs, cosmetics, medical devices, and food. It was established in 2003 as a semi-independent body under the Ministry of Health and is therefore only in its infant stage. Its mission is to ensure the protection of national consumers' health. Regarding foodstuffs, it regulates import, production, distribution, storage and sale. It conducts inspection to ensure that the food is of the required standard. Its role to date has been, however, at product and processing levels.

  It collaborates with the Regional and Local Authorities to enforce the Tanzania Food, Drugs and Cosmetics Act, 2003.

  The Authority has equipped laboratories which provide analytical services. They analyse pesticides, microbiological contamination and hygienic handling. These laboratories are well resourced in terms of infrastructure, staff and equipment. They need, nevertheless, to acquire specialized equipment and to complete the process of accreditation.

- At the local level, the Ministry of Regional Administration and local governments also have a role to play as they are working at grass-roots level.

- **Customs inspections**: The Government subcontracts private companies to certify exports (Cotechna and SGS). This was previously done by the Customs Department. Their role is to certify that buyers' requirements (as expressed in the letter of credit) are met. These companies certify quality, quantity, price and packaging.

- The **Bureau of External Trade** (BET) is the government agency responsible for export promotion. In collaboration with UNCTAD/ WTO, the Bureau formulated a strategy for the development of the horticultural sector. The strategies include programmes to

  (1) Improve the supply base through the establishment of Pilot Export Production Villages;

  (2) Improve product development through the development of nurseries with appropriate varieties;

  (3) Improve technical support services in order to provide farmers with information on suitable cultivation, harvesting, handling, storage and distribution;

  (4) Accredit local certifying agents. This is seen as especially important for organic certification since costs are high;

  (5) Invest in cold storage facilities;

  (6) Support the organization of sector associations.

  The strategy is under implementation with support from the Programme for Building Africa Capacity for Trade (PACCIA/PACT), a Canadian line of support coordinated by the International Trade Centre (ITC) and the Trade Facilitation Office Canada (TFOC). This funding has been made available to address packaging issues, quality management and market development. However, funding has still to be sought to finance the key constraints in the supply side.

A number of other institutions contribute directly or indirectly to the implementation of food quality systems. The following table presents the key actors and the activities they develop in the quality domain.

Table 4 Key Institutions Tanzania

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
Governmental Institutions		
Ministry of Industry and Trade	Tanzania Bureau of Standards (TBS) National Technical Committee on fresh fruits and vegetables	Develop standards Standards promotion Conformity assessment
	Department of Trade	
	National Export Technical Team on SADC, EC, EPA negotiation	
	Tanzania Industrial Research Development Organization (TIRDO)	Organization of workshops 1. Trade issues, including SPS 2. on traceability in coffee, tea and cashew, the key commodities exported to the EU (in collaboration with DANIDA, Plant Health and a South African consultant)
Ministry of Agriculture	Plant Health Services	Conformity assessment Inspection and Phytosanitary certificates Training Development of regulation Participate in standard setting
	Tropical Pesticide Research Institute (TPRI)	Inspection and Phytosanitary certificates Registrar of pesticides (with FAO) Activities to establish a PIC procedure in Tanzania
Ministry of Health	Tanzania Food and Drugs Authority (TFDA)	Inspection of end products (markets mainly) Revision of food legislation: Food and Drug Act Participate in standard setting
Ministry of Marketing and Cooperatives		Study on potential for exports of fresh fruits
Tengeru Research Station		Dealing with fruits and vegetables research and training Participation in standard setting
University of Sokoine		Production of mango seedlings
	Board of External Trade (BET)	Supports exporters List of exporters
International Institutions		
	WTO/SPS	Organization of regional workshops on the application and implementation of the SPS Agreement (last data were 11/2003)
	FAO FAO/IAEA	Implementation of PIC programme Implementation of FAO code of conduct Monitoring of pesticide impacts
	UNIDO	Implementation of projects of capacity building to enhance food industry and promote trade facilitation and market access Projects on quality, standardization and metrology
	Danish International Development Agency (**DANIDA**)	Strengthening TBS capacity (5 years project from July 2003) • Participation in standards • Traceability • Accreditation of laboratories • Packaging skills
	SECO	SECO has projects in Tanzania to reduce poverty. Financed projects food standards upgrade with UNIDO.
	USAID	Survey of laboratories in Tanzania Development of a pro-forma checklist for

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
		lab self-audits; checklists for completing the survey; techniques to determine lab capacity, infrastructure, and level of competence
	USDA/FSA	Training on trade policy implications of the implementation of SPS regulation (regional workshop)
Private institutions		
Producers/ Exporter	Swan Entreprises	Fruit production and exports Participate in standard setting
	PO (producers' organizations): AMAGRO (Association of Mango Growers)	Fruit production and exports
	TANEXA (Exporters association)	
	TANCERT	Certification of organic products
	Tanzania Chamber of Commerce Industry and Agriculture (TCCIA)	Evaluation of potential of the fruit sector Promotion of products Participate in standard setting Communication of standards Study on production and potential for exports
	TLL packaging company	Participate in standard setting

5.2.2 Analytical services

There are a number of private and public laboratories with the capacity to perform plant and food analysis. The key laboratories include the TBS Test House, composed of several laboratories, including a chemical laboratory and food and microbiological laboratory, the laboratories of the TFDA and of the Government Chemistry Laboratories Agency (GCLA), and the TIRDO laboratories..

At present there are no accredited laboratories in Tanzania; however, an accreditation assessment programme for several of them is being conducted by SANAS (South African National Accreditation System). A number of test methods have been submitted for accreditation in each of the laboratories, out of a total of 144 methods.

Public laboratories have received support from the DANIDA Business Support Project. Within that programme, an accreditation awareness workshop was held in Zanzibar (29–30/3/2004). Also in Zanzibar a meeting of the Task Force on Accreditation (31/3/2004) was held. Workshops were subsequently organized to provide training on laboratory quality management systems based on ISO/ICE 17025. Forty-seven people have already been trained. At least 100 people are expected to receive training under this programme. The workshops should also provide an opportunity for the development of procedures manuals for the beneficiary institutions (TBS, TPRI, TFDA, GCLA and TIRDO).

Table 5. Number of laboratories per institution and test to be accredited

LAB. ORGANIZATION	NUMBER OF LABS	TEST METHODS	QUALITY MANUALS
TBS	4	57	Ready
TPRI	2	18	In preparation
TFDA	2	13	In preparation/requires assistance
TIRDO	2	30	Ready
GCLA	2	4	Ready
TFNC	3	14	In preparation

An assessment of the capacity of the laboratories reports that these are staffed with qualified personnel but need specialized training (Tibanyenda, 2004). TBS, for instance, requires training to operate new equipment. All laboratories require training in measures uncertainty and methods validation and additional training on ISO 17025.

In terms of equipment needs, TBS is planning to acquire testing equipment to perform pesticide residue analysis. The TPRI laboratory needs to upgrade some of its equipment to gain accreditation.

5.2.3 National legislation

The key legislation governing food safety are the Food and Drug Act and the Plant Protection Act 1997. In order to comply with the EU legislation, this legislation has to be revised to incorporate requirements such as HACCP, MRLs, contaminants and pests limits. The Plant Protection Act, dating from 1997, needs to be revised to incorporate the review of the IPPC. More challenging will be the incorporation of the farm-to-fork requirements, which will demand the assistance of an expert consultant and extensive stakeholder consultation to decide what obligations producers and traders will have to meet.

The Plant Protection Act includes a list of registered pesticides developed by the TPRI. This list is available at www.kilimo.go.tz.

National fruit quality standards are being established. These are based on CODEX and UN/ECE Standards for fresh fruits and vegetables and standards from other SADC countries such as Botswana and Kenya. The following standards have been developed or are under development:

- Citrus fruits specification;
- Tomatoes – specification;
- Pineapples;
- Mangoes;
- Cabbages;
- Code of Practice for harvesting, storage, transportation and preservation;
- Sampling methods.

There is a need to invest in the completion of all these standards and develop standards for other fruits of potential economic interest. It is equally important to promote these standards by carrying out information and education campaigns. These are costly activities.

5.2.4 Projects

- **DANIDA** has several projects for capacity-building of the TBS. They may be summarized as follows:
  a. Upgrade testing labs to international accreditation. In the next two and a half years, 144 tests will be accredited; the Danish Standards Association will provide the training (training of managers and staff on European Approach for one year).
  b. Support participation in the technical committee of CODEX and membership of ISO.
  c. On the traceability issue, DANIDA supports industries in four sectors, including coffee, tea and cashews. It trained six “trainers of trainers” from TBS, the Ministry of Agriculture and the Ministry of Natural Resources. It has established a working group in each sector with representatives of all stakeholders (including the private sector) to work on the details of traceability. It has contracted a local expert on publicity to prepare brochures on traceability in Kiswahili.
  d. On packaging: DANIDA held workshops to demonstrate how to pack fresh fruits in accordance with the requirements of international markets. Papaya was used as a case study.
  e. On certification: Danida is supporting the establishment of a consultancy company which will assist small and medium-sized entreprises in meeting standards.
- Martin Doherty, a consultant, was recently recruited to assess the effect of EC sanitary and phytosanitary measures on Tanzanian exports to the EU. He was recruited by the National Export

Technical Team on SADC, EC and EPA negotiation. This team is under the Ministry of Trade and is composed by several stakeholders.

A workshop was held from 8 to 13 November 2004 in Dar es Salaam to discuss Tanzania's position in the SADC EPA negotiation.

- A South African consultant is developing a traceability system. Traceability is a key EU requirement which will lead other countries to require the same standard. The difficulty lies in the fact that most producers are small farmers: a system has to be developed whereby a community will be considered as a farm. They would have to develop their own bylaws. The second meeting with the consultant to be held in March.
- A team of consultants was organized to develop a pilot scheme to address the problem of traceability for small scale producers. It is composed of two staff members of the Ministry of Agriculture and two from the Ministry of Trade (TRIDO). This project is, however, waiting for funds. Several pilot projects will be needed.

DANIDA's advice is that a donor meeting be organized to avoid duplication and create synergies. All needs should be assessed and prioritized and the role of each donor defined.

Table 6 Macro costs of compliance (Summary) – Tanzania

ORGANIZATION	OBJECTIVE	COSTS (US$)
TBS	Review and update legal framework	120,000
	Develop standardisation capacity	80,000
	Develop Certification Capacity	130,000
	Promote implementation of quality standards	400,000
	Improve Participation in International Standards Setting	130,000
	Recruitment	10,000
	Sub-total	**870,000**
MINISTRY OF AGRICULTURE PLANT HEALTH DIVISION	Review and update legal framework	160,000
	Develop capacity to deal with SPS issues	30,000
	Develop inspection and quarantine capacity	220,000
	Develop Export certification capacity	140,000
	Strengthen information, surveillance systems	130,000
	Modernise procedures for registering and control of pesticides	30,000
	Promote implementation of quality standards	210,000
	Improve Participation in International Standards Setting (SPS)	90,000
	Upgrade infrastructure to allow efficient implementation of phytosanitary systems	30,000
	Recruitment	50,000
	Sub-total	**1,090,000**
MINISTRY OF HEALTH DEPARTMENT OF ENVIRONMENTAL HEALTH	Review and update legal framework	80,000
	Develop inspection capacity	100,000
	Improve information systems	80,000
	Promote Implementation of safety standards	40,000
	Improve participation in international standards setting	80,000
	Infrastructure development	160,000
	Recruitment	20,000
	Sub-total	**560,000**
	TOTAL COSTS	**2,520,500**

5.2.5 Macro costs of compliance

To improve its food safety control system, the regulatory institutions need to develop appropriate standards and legislation, develop systems for assessing conformity to standards, train its staff and promote standards, improve information flows, develop effective mechanisms for the control of imported and exported produce, and improve participation in international standards setting.

The details of the requirements for the key institutions analysed and the type of inputs necessary to meet them are presented in detail in appendix 2. The cost estimates were collected during the interviews with key stakeholders. A summary of the costs of compliance is presented below.

5.3 Producers and private sector

5.3.1 Key players

Two companies are the example of conformity with market requirements for vegetable production: **Gomba Estates** and **Serengeti Fresh**. These companies, located in the Arusha region, are EurepGap-compliant. Gomba Estates are also planning to get certification for Nature's Choice. Both are exporting directly to Europe, benefiting from the existence of the new cold storage facility at Kilimanjaro airport. In the same region, several cut flower producers are also exporting to Europe. These producers are up to date with the requirements of European markets and standards.

The producers interviewed who are not exporting, however, did not have detailed information about EU requirements and EurepGap protocols. And neither did the public authorities.

Gomba Estates are planning to expand their business by setting up an outgrowers' scheme, benefiting from the possibility of certification of farmers' associations provided by EurepGap. This scheme may provide a good model for the integration of smallholders in the export market. Another example of this kind is the company Tanzania Spices, organized by the **TCCIA**, and composed of a limited number of small farmers exporting paprika to the Spanish market.

There is one EurepGap certification company in Zanzibar, but none exists in mainland in Tanzania. Certified producers use international certification companies such as CMI or National Britannia to certify EurepGap and BRC. In Tanzania, producers may also occasionally use Kenyan certification companies.

There are, however, companies in Tanzania with experience of food quality control in sectors other than fruits. One such company is **ACE,** which is, for instance, involved with quality control of cereal production and has operated in collaboration with the National Development Corporation (NDC). ACE may be a good source of information about how a quality control system could be set up in Tanzania for fresh fruits and about the costs of operating such a scheme.

The problem of the lack of national certification companies has also affected organic producers. These producers have incurred significant costs to bring in a certification company from abroad. To address this problem, a company was recently set up to certify organic products (Tanzania Certification of Organic Products **TANCERT**). It will certify tea, coffee and vegetables.

5.3.2 Micro costs of compliance

The cost of compliance with food standards for private producers were calculated using compliance with EurepGap as a case study. The validity of the approach is demonstrated by the importance of the EU as the preferential market of African exports and by the importance of this retailers' protocol in the EU. Additionally, given the comprehensiveness of this protocol, it is a good model for the analysis of the costs of compliance with other protocols as well.

The requirements of EurepGap are presented in detail in appendix 3. A summary of the costs of compliance with EurepGap, based on the interviews held with producers in Tanzania, is presented below.

Table 7 Micro costs of EurepGap compliance (summary) – Tanzania

EUREPGAP REQUIREMENTS	SETUP COSTS (US$)	ONGOING COSTS (US$)
1. Traceability	4,300	100
2. Record keeping and self-inspection	6,000	3,600
3. Site management	900	0
4. Risk assessments	1,500	300
5. Technical services	0	2,000
6. Laboratory analysis	0	3,000
7. Soil and substrate management	1,000	100
8. Fertilizer use	2,500	750
9. Crop protection	10,400	1,250
10. Irrigation/fertirrigation	600	0
11. Harvesting	9,800	200
12. Produce handling	11,300	100
13. Waste & pollution management	800	50
14. Worker health, safety and welfare	47,490	4,250
15. Environmental issues	1,100	200
16. Certification costs	1,000	2,000
17. EurepGap procedures	0	2,600
TOTAL COSTS	**98,690**	**20,500**

6 MOZAMBIQUE

6.1 Trade and agricultural production

Agriculture accounts for 20 per cent of GDP and employs over 75 per cent of the population. Most of it is traditional, smallholders' agriculture. Commercial, export-oriented agriculture occupies only 10 per cent of the agricultural area. Production and exports are constrained by a number of important obstacles. There is a lack of infrastructure and trading network, in particular of logistical transportation and storage infrastructure. Other constraints that need to be addressed include lack of access to finance and bureaucratic procedures.

However, if these issues are addressed, Mozambique has a very strong agricultural potential with 36 million ha of arable land, of which only 10 per cent is currently used. The total potential irrigated area is 3.3 million ha. Fruit and horticultural production in particular have great potential in Mozambique with over 550,000 ha in the Beira corridor with favourable agro-ecological conditions for high-value horticulture exports.

Recent developments in the sector include the redevelopment of large-scale state farms.[7] including citrus-producing ones, through Foreign Direct Investment and Joint Venture companies. In the Manica region, where there is high potential for horticultural production, several Zimbabwean farmers have established new farms. There are projects to establish industrial free zones that could benefit exports of semi-processed horticultural products.

6.2 Food safety system

6.2.1 Institutions

The competent authorities responsible for food quality are the National Institute for Normalization and Quality (INNOQ[8]) under the authority of the Ministry of Industry, the Department of Plant Protection in the Ministry of Agriculture, and the Department of Public Health within the Ministry of Health.

- The **INNOQ** is the institution responsible for standard setting. It is organized into Sectoral Technical Commissions (CTNS[9]) which are split into Normalization Technical Commissions (CTN[10]) and working groups. There is one working group on fruits and vegetables which develops draft standards, and these are subsequently submitted to the CTN, a group with a larger membership. INNOQ has established as one of its priorities the development of standards for fruits.

  SIDA has financed the largest foreign assistance programme directed at improving quality control systems. The project run from 1997 and 1999 and achieved a number of results. These included training and awareness seminars for almost 1,000 participants, assistance to six firms, improvement of the documentation centre and improvement of INNOQ financial management systems.

  However, analysis of the institution has highlighted a series of constraints that the institute needs to address to meet international standards. These include for instance the lack of appropriate infrastructure, the lack of trained personnel and the lack of efficient financing mechanisms (the institution does not have an independent budget). Another problem highlighted was the lack of

[7] After independence, the agricultural development model was based on large State farms This model was abandoned in the 1990s.
[8] Instituto Nacional de Normalização e Qualidade
[9] Comissão Técnica de Normalização Sectorial
[10] Comissão Técnica de Normalização

appropriate legal framework: there are directives such as Directive INNOQ 1, which are a good basis for the development of the standardization subsystem. Some texts, however, need to be updated and new legislation and regulations need to be elaborated.

- The National Plant Protection Organization is the **Department of Plant Health** (DSV[11]), which is responsible for quarantine, inspection and emission of phytosanitary certificates. The DSV and Customs are responsible for the operation of the quarantine Group. The shortfalls in legislation have led to the recent review of the plant protection regulation. Other regulatory texts such as the Diploma Ministerial 143/92 need urgently to be reviewed. This legislation must include a new quarantine pest list and guidelines for pest risk assessment.

  Department officials have highlighted the need to set up new border points to ensure effective inspection of imports and exports. The EU requirements of field to fork also dictate the need for recruitment of more inspectors who will ensure inspection at field level. These inspectors would have to be trained, equipped and provided with means of transport.

- The **Department of Public Health** (RHP[12]) is responsible for establishing and enforcing food legislation. It cooperates directly with institutions responsible for exports (e.g. it participated with the fisheries sector in the revision of the legislation to comply with international rules). In the case of agricultural products, the RHP works with the Ministries of Agriculture and Industry. The Department has a section responsible for border inspections and foodstuffs. Technicians from CHAEM,[13] Local Centres for Environmental and Health Tests (and also arms of the RHP at provincial level) are members of the Quarantine Group. The Department is responsible for issuing sanitary certificates to firms. Within the context of the fresh fruit industry, this would mean, for instance, inspection of workers in the packing houses. Despite its being required by law, however, many firms operate without the sanitary certificate of the RHP. In reality, the department operates on demand from the companies and does not have a routine inspection procedure. Constraints include the conflicting roles between local power and CHAEM.

- In addition to the institutions and departments cited above, which are directly responsible for food safety and SPS issues, there are a number of other institutions involved with developing the quality of the fruit and vegetable sector. The Fruit Sector of the **Production Department** of the Ministry of Agriculture is the key institution responsible for the promotion of the sector and extension activities. The **Office for the Promotion of Commercial Agriculture** (GPSCA [14]) has also played an important role in promoting the fruit industry. The GPSCA owing to its involvement in the EPA negotiations, has expressed its interest in obtaining a list of needs with the quantification of costs for the public authorities of upgrading the food safety system. This would assist them in negotiating the Mozambican position. The **National Institute for Agricultural Research** (INIA[15]) is responsible for the maintenance of gene banks and research into fruit varieties. The Faculty of Agronomy of the University Eduardo Mondlane has also had an important role in the development of training materials and provision of training courses for farmers.

- **TechnoServe**, a development company working under contract to the USAID/Mozambique mission, plays an important role in the development of many commodities and specifically in the horticultural sector. TechnoServe has a team of experts specializing in a number of sectors such a business, market and quality.

The list of the key actors who contribute directly or indirectly to the implementation of food quality systems and the activities they develop in the quality domain is presented below.

[11] Direcção de Sanidade Vegetal
[12] Repartição de Higiene Pública
[13] Centro de Higiene Ambiental e Exames Médicos
[14] Gabinete de Promoção do Sector Comercial Agrícola
[15] Instituto Nacional de Investigação Agrária.

Table 8 Key institutions – Mozambique

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
Governmental Institutions		
Ministry of Industry and Trade	INNOQ National Institute for Normalisation and Quality	Develops standards Standards promotion Conformity assessment
	Department of International Relations	Participation in EPA negotiations
	National Directorate of Industry	Control of some agro-industrial production
	Institute for the Promotion of Exports (IPEX)	Provides information to exporters List of exporters
Ministry of Agriculture	Department of Plant Protection	Conformity assessment Inspection and phytosanitary certificates Training Development of regulation Participates in standard setting
	Department of Plant Production	Oversees activities of the Ministry of Agriculture involved in the development of the fruit production sector
	Office for the Promotion of Commercial Agriculture (GPSCA)	Promotion of the fruit and vegetables sector Participation in EPA negotiations
	National Institute of Agricultural Research (INIA)	Rehabilitation of gene bank, namely mango varieties
	Marketing Boards	Participates in setting and promoting standards
Ministry of Health	Department of Public Health	Codex Focal Point Participate in standard setting and promotion
Inter-ministerial working groups	National Council of Quality	Not operational yet Secretariat: Ministry of Industry
	SPS working group	Not operational yet Ad hoc work Secretariat: DPV (Dr. Varimelo) Participants INNOQ, RHA
	SADC Trade Protocol Committee	Deals with the implementation of the SADC Trade Protocol and other trade policy matters
	External Market Task Force	Discusses and investigate interest in exporting to South Africa. Included analysis of quality requirements
International institutions		
	WTO/SPS	Organization of regional workshops on the application and implementation of the SPS Agreement (last data were 12/2002; amount US$ 70,000)
	SADC	Apply several protocols related to standardization, quality assurance, accreditation and metrology. Enables the sharing of infrastructures by its member-country. Organizes Consultative Forum on SPS/Food Safety Organizes workshops
	FAO	Implementation of PIC programme Implementation of FAO code of conduct Monitoring of pesticide impacts
	WHO	Supports Codex activities Financed publication of Code of Conduct
	UNIDO	Cooperation programme with public institutions for improvement of food safety standards in agro-processing industries

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
		Support for the formulation of the National Quality Policy
	USAID	Survey of laboratories in Mozambique Development of a pro-forma checklist for lab self-audits; checklists for completing the survey; techniques to determine lab capacity, infrastructure, and level of competence
	USDA/FSA	Training on trade policy implications of the implementation of SPS regulation (regional workshop: 09/2002; amount: US$ 18,000)
	SIDA	Supported upgrading of INNOQ, including standards development, promotion, training information services and publications (1997–1999).
	SECO	SECO has financed poverty reduction projects in Mozambique.
	TechnoServe	Development NGO funded mainly by USAID. Has acquired an important role in the sector. Its mission is to help entrepreneurs in rural areas build successful business that will benefit them and their communities Working on many commodities from the production side It has assisted CITRUM with management and technical support MozLink project: provided entrepreneurs with mentor from international companies such as Cargill, Ernest & Young.
Private sector		
	Producers/ Exporter: for example: Vanduzi Kondozi Vilmar (rose production)	Participate in standard-setting Invest in the development of quality systems and infrastructures.
	Frutisul (producers' organization) Confederation of Business Associations (CTA)	Lobbying to ensure government policies favour the development of the local private sector. Promote quality, participate in national quality events

- The fisheries sector: it is in the fisheries sector that the implementation of quality systems is more advanced. The HACCP system is being implemented in a systematic way in this sector.

6.2.2 Analytical services

The National Laboratory of Hygiene, Water and Food (LNHAE[16]) coordinates several laboratories with food analysis capacity. One important task to be carried out is to assess the needs of the dependent laboratories. This is the responsibility of the LNHAE.

There is no GLP accredited-laboratory in Mozambique. For that reason, producers need to rely on MRL tests done in foreign laboratories or tests performed by the importer.

[16] Laboratorio Nacional de Higiene, Aguas e Alimentos.

6.2.3 Legislation

Mozambique's legislation includes procedures for import, export and local consumption of agricultural and food products. There are few laws and mostly what regulates food safety are regulations implemented by public institutions. The key bodies of legislation governing food safety in Mozambique include:

- Crimes against public health in the context of food hygiene;
- Decree N5/80 of 22 October, requiring that all food workers obtain a health certificate;
- Hygiene and sanitary requirements in the production, transport and trade of foodstuffs;
- Regulations of hygiene requirements of food establishments;
- Regulations on imported foodstuffs;
- Regulations on food additives;
- Pesticide regulations.

Most of the regulations were enacted prior to 1980 and are under revision. This is the case, for instance, of the regulation on pesticides and fertilizers developed by the Ministry of Agriculture and the food safety regulations developed by the Ministry of Health. Despite the revision efforts, the existing legislation is clearly not enough. There are few standards and regulations relating to specific products. Additionally, there is a shortage of trained personnel to carry out this task. There is equally a lack of awareness on how standards can benefit producers (Silva & Carrilho, 2003).

6.2.4 Projects

There are several projects running in Mozambique dealing with fruit production and quality standards.

- **TechnoServe** commissioned, in September 2003, a 10-week study to assess the competitiveness of the horticulture industry in the Beira Corridor. In March–April 2004, TechnoServe, in collaboration with other stakeholders such as the CTA, organized the Horticultural Investment Forum: Building a Globally Competitive Industry in Mozambique. Several experts presented the findings of the competitive analysis of horticulture. Key requirements for horticultural development such as infrastructure, access to finance, public sector support and capacity building were discussed. Barry Linton, of the IATC (International Agriculture & Technology Centre), presented standard requirements for import of fresh produce into the UK and Europe. Several private producers presented their businesses (see producers' section).
- **PoDE** (Project for the Development of Enterprise) Sector Strategic Initiative (SSI) Project:. PoDE has commissioned the development of a "Market access manual to facilitate the growth of Mozambique horticultural exports into the European and Middle East markets". The manual was developed by Peter Greenhalgh, Tiago Wandschneider and Andrew Graffham from the Natural Resources Institute, UK.

  The project intends to organize a workshop to launch the manual around June. The contact person for the project in Mozambique is Mohan Nair (Mohan@cimpogest.com).
- **UNIDO** is operating in Mozambique within the Mozambique Integrated Framework, Food Processing component. A plan of action was developed to enhance food processing and also strengthen food safety systems. A project document "Assistance for Food Action Plan for Improved Processing and Food Safety" was prepared in September 2001 by Ravi Aswathi (Backstopping officer Victor Hinojosa-Barragán, SES/AGR United Nations Development Organization). Ravi Aswathi was in Mozambique at the same time as this UNCTAD mission and was preparing a new plan of action to support the processing sector and food safety systems.
- Several studies on SPS were developed at the **SADC** level.

SADC (2000). SADC High Level Consultation on Trade, SPS/ TBT, 4–6 September 2000, Harare, Zimbabwe. SADC (2000). SADC Trade Protocol.

Recently, a study on quality systems and compliance costs was organized by Mr. Keneedy Mbebeania at **BIPDA**.

- **EDF** (European Development Fund) has recently selected consultants to carry out an analysis of NTBs for agricultural products (for consultant name see Ministry of Industry).
- A mission from the **World Bank** was also in Mozambique carrying out a value chain analysis for a few key commodities, including fruit production. The consultants are also planning to hold a workshop to present their results.
- Other studies include those of the **RAPID** task force (Regional Activity to Promote Integration through Dialogue and Policy Implementation). See for instance:

  RAPID (2001–2002) SADC-SPS Country Analysis Reports: Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe.
- Two assessments of the capacity of laboratories have been conducted by USAID and UNIDO. Costs of upgrading infrastructure and certification costs have been estimated. However, these documents are not in the public domain.
- **Bridging the standards divide**. A thorough investigation of the impacts of the standards for market access in Mozambique, concentrating on the fruit and vegetable sector, has been carried out by Gabriela Rebello da Silva and Lara da Silva Carrilho (Silva & Carrilho, 2003). It provides comprehensive information on legislation, projects to strengthen local capacity and key institutions involved in the food control system. It evaluates the needs of the country in terms of complying with national and international standards.

There is duplication and a lack of coordination between projects. The effectiveness of international agencies could be improved by establishing an information system, and defining priorities together and collaborations.

The organization of the workshop should take into account all the projects running at the same time. The number of workshops/year in Mozambique seems to be extremely high. Participants may lose interest if several workshops on similar topics are organized.

6.2.5 Macro costs of compliance

As explained for the Tanzania case study, the macro costs of compliance were estimated by identifying and costing the improvements which public institutions need to make to comply with the international food safety requirements. A summary of the costs of compliance is presented below. A detailed table of requirements is presented in appendix 2.

Table 9 Macro costs of compliance (summary) – Mozambique

ORGANIZATION	OBJECTIVE	COSTS (US$)
INNOQ	Review and update legal framework	220,000
	Develop standardisation capacity	240,000
	Develop certification capacity	520,000
	Promote implementation of quality standards	740,000
	Improve participation in international standards setting	170,000
	Upgrade infrastructure to allow efficient implementation of quality control systems	3,600,000
	Recruitment	100,000
	Sub-total	**5,590,000**
MINISTRY OF AGRICULTURE PLANT HEALTH DIVISION	Review and update legal framework	30,000
	Develop capacity to deal with SPS issues	30,000
	Develop Inspection and Quarantine Capacity	530,000
	Develop Export Certification Capacity	1,470,000
	Strengthen information, surveillance systems	440,000
	Modernise procedures for registering and control of pesticides	30,000
	Promote implementation of quality standards	90,000
	Improve participation in international standards setting (SPS)	90,000
	Upgrade infrastructure to allow efficient implementation of phytosanitary systems	30,000
	Recruitment	100,000
	Sub-total	**2,840,000**
MINISTRY OF HEALTH DEPARTMENT OF ENVIRONMENTAL HEALTH	Review and update legal framework	150,000
	Develop inspection capacity	270,000
	Improve information systems	70,000
	Promote implementation of safety standards	50,000
	Improve participation in international standards setting	80,000
	Infrastructure development	200,000
	Sub-total	**820,000**
	TOTAL COSTS	**9,250,000**

6.3 Producers and private sector

6.3.1 Key players

Despite its potential, Mozambique's horticultural sector is relatively undeveloped, with only half a dozen of commercial producers. Recently, the entry of Zimbabweans farmers in Manica and the rehabilitation of commercial farms in the South have given a new visibility to the industry.

The key produce includes flowers, paprika baby corn, chillies, mange tout peas and flowers destined for the EU market. There are very few producers exporting fruits.

One of those is **CITRUM**, a company formed in 2002, that rehabilitated two large abandoned citrus farms. Since 2003, CITRUM has been exporting 250 tonnes of grapefruit (Star Ruby) to the UK and is also selling to the local processing market. Production is expected to surpass 3,000 tonnes of grapefruit at the same time as the company tries to diversify its production into limes, lemons, lichees, mangoes, bananas and strawberries. CITRUM exports to Europe are through CapeSpan, a South African company with large market share.

Another key producer is the **Vanduzi** company, which has EurepGap/BRC certification. Vanduzi' experience has revealed that compliance with the BRC protocol is more expensive than EurepGap. EurepGap is not considered an inhibiting cost, but more as a necessary requirement to obtain a production of quality. Vanduzi is audited by a South African company.

It is also important to mention several projects, at different stages in their development phase, which were presented at the horticultural investment workshops. Of particular interest to this study is the mango production project directed by Mr. Mike Scott of **EAM**. Other projects include Paprika production (presented by Mr John Lewis, Pimentas de Moçambique) and vegetable production (presented by Mr. Piet de Klerk, Kondozi).

There are also cut flower producers in Chimoio, Manica Province, exporting to Holland (e.g. **Vilmar**, Mr. Derek Hinde). They can be a source of information in market access mechanisms, although the quality requirements are, of course, different from those for fresh fruits. EurepGap is at present developing a protocol for cut flowers.

Most of the production is based on commercial farms, but some of the crops are being, or will be, acquired from outgrowers (i.e. paprika, baby corn, etc.). Some efforts are being made in Mozambique to certify some smallholders with the Fairtrade Label. It is believed that the Fairtrade Organization is looking into the possibility of setting up an office in Mozambique.

Producers consider that there are very serious obstacles to production, which need to be solved before starting addressing quality issues. These include the lack of support for commercial agriculture and the lack of infrastructure, including phone communications. One example is the problems that producers face in importing packaging material, which is not available in Mozambique, from South Africa.

Producers have, however, repeatedly expressed the idea that the first challenge is to produce and exports requirements should only be addressed after the production side is solved.

There is no EurepGap certification company in Mozambique. However APCER (Portuguese Association for Certification) and SABS (South African Bureau of Standards) provide certification services for standards such as ISO 9000, which have been implemented in some Mozambican firms.

6.3.2 Micro costs of compliance

The following table presents an example of the costs of compliance with EurepGap requirements based on the discussions held with several producers in Mozambique.

Table 10 Micro costs of EurepGap compliance (summary) – Mozambique

EUREPGAP REQUIREMENTS	SET-UP COSTS (US$)	ONGOING COSTS (US$)
1. Traceability	4,300	100
2. Record keeping and self-inspection	7,000	3,300
3. Site management	900	0
4. Risk assessments	1,500	300
5. Technical services	0	2,000
6. Laboratory analysis	0	3,000
7. Soil And substrate management	1,000	100
8. Fertilizer use	7,500	1,000
9. Crop Protection	23,900	2,200
10. Irrigation/fertigation	600	0
11. Harvesting	12,000	800
12. Produce handling	11,300	600
13. Waste & pollution management	5,800	300
14. Worker health, safety and welfare	28,500	6,100
15. Environmental issues	1,100	200
16. Certification costs	4,000	1,000
17. EurepGap procedures	0	2,600
TOTAL COSTS	**109,400**	**23,600**

7 GUINEA

7.1 Trade and agricultural production

Despite favourable agro-ecological conditions, agricultural production has been in decline in Guinea since the 1960s.[17] Guinea moved from being an exporter (in 1958, Guinea exports of bananas reached 100,000 tonnes) to being an importer of agricultural products. Today, of the 6 million hectares of arable land, only an estimated 1,5 million ha are under cultivation. Agriculture is traditional and extensive. Consequently, an enormous amount of food products are imported into the country.

The declining trend continues until today. Pineapple production, which reached around 6,000 tonnes in 2000/2001, is now down to around 3,000 tonnes. Exports amounted to slightly more than 300 tonnes in 2004.

The potential for fruit production, is, however, high. The potential for mango production, for instance, is estimated at 65,000 tonnes, of which at least 30,000 tonnes could be destined for foreign markets. These markets could include Europe and countries in the region, such as Mali and Côte d'Ivoire. At present, exports to Europe (and namely to France, the key destination market), amount to approximately 550 tonnes, most of it transported by boat. The key exporter, the company SIPEF, has plans to increase its exports to more than 1,000 tonnes.

Given this potential, several programmes have been set up to relaunch agriculture and, mainly, horticulture. Diversification is seen as one of the keys to success. Some projects have exploited the interest of fruits such as avocados, which have shown great potential.

These efforts are, however, insufficient as there are a number of constraints to be addressed.

The key constraints to production, identified by the Ministry of Agriculture, include

- Lack of irrigation infrastructures;
- Lack of equipment and access to inputs. Stocks are frequently disrupted and distribution networks are highly ineffective. The costs of inputs are higher than in other countries in the region;
- Lack of access to quality seeds and seedlings;
- Lack of access to credit;
- Fragmentation of supply.

At the marketing level, constraints include:

- Lack of infrastructures for processing, storage and transport;
- High airfreight and maritime cargo costs;
- Lack of packing materials of international standards produced nationally;
- Lack of access to market information; lack of knowledge about SPS and importers' quality requirements;
- Lack of training of market operators; lack of knowledge of commercial rules leading to lack of bargaining capacity;
- Lack of commercial legislation

[17] http://www.fao.org/giews/french/basedocs/gui/guigen1f.stm

7.2 Food safety system

7.2.1 Institutions

The key institutions responsible for the production and control of food quality are presented in Table 11. Institutions directly responsible for food safety in Guinea include the the INNM[18] (National Normalization Institute), the SNCQN[19] (National Service for Quality Control) and the CAFEX[20](Centre for the Support of Export Formalities) under the Ministry of Commerce, Industry and SMEs[21]; the Plant Protection Division[22] and the National Laboratory of Plant Protection[23] (LNPV) under the Ministry of Agriculture and the Department of Food and Nutrition, Public Health Section[24] of the Ministry of Health. Another important player is Agrimex, a consultancy company responsible for the implementation of the Pesticide Initiative Programme in Guinea. Other companies such as Bureau Veritas are involved in quality control of commodities such as coffee and cocoa. There is no coordinating organism for food safety control.

Table 11 Key institutions – Guinea

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
Governmental institutions		
Ministry of Commerce and Industry (MCI)	National Normalization Institute (INNM)	Responsible for implementation of quality policy Develop standards Standards promotion Conformity assessment
		Participation in EPA negotiations
	National Service for Quality Control (SNCQN)	
	Centre for the Support of Export Formalities (CAFEX)	Facilitation of exports Inspection and Phytosanitary certificates Members of the PIP Task Force
	Chamber of Commerce	Technical and financial assistance to exporters
	Chamber of Agriculture/Fruit and Vegetables Section	
Ministry of Agriculture National Directorate of Agriculture[25] (DNA)	Plant Protection Division	SPS focal point Conformity assessment Inspection and phytosanitary certificates Training Development of regulations Participate in standard setting
	Division of Seeds, Seedlings and Fertilizers[26]	Responsible for the elaboration of legislation on seed production
	National Laboratory of Plant Protection (LNPV)	
	Agronomic Research Institute/ (IRAG/CRAF[27])	Research Production of vegetative material
Ministry of Health	Public Health Section	Codex Focal Point

[18] Institut de Normalisation.
[19] Service National de Contrôle de Qualité et des Normes.
[20] Centre d'Appui aux Formalités d'Exportation.
[21] Ministère du Commerce de l'Industrie et des PME.
[22] Division Protection de Végétaux.
[23] Laboratoire National de protection des Végétaux et des Denrées Stockées.
[24] Section Hygiène Publique.
[25] Direction Nationale de l'Agriculture.
[26] Division de semences, plants et fertilisants.
[27] Institut de Recherche Agronomique de Guinée / Centre de Recherche Agronomique de Foulaya.

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
		Participate in standard setting and promotion
Inter-ministerial committees/groups	National Nutrition Committee[28]	Not operational yet Secretariat: Ministry of Health
	National Committee for Food Safety [29]	Established by Presidential Decree.[30] It is presided over by the Ministry of Commerce
	CODEX Committee	
	PIP Task Force	Organized with the support of the PIP to address SPS issues
International Institutions		
	WTO/SPS	Organization of regional workshops on the application and implementation of the SPS Agreement
	WHO	Financing of activities related to food safety, namely Codex activities and support for organization of meetings
	FAO	Financing of projects for improvement of seed and seedling quality Financing of agricultural research
	World Bank	Promotion of horticultural sector through organization of seminar Support for potato production project
	UNIDO	Support for the establishment of the INNM
	USAID	Support for the upgrading of IRAG's biotechnology laboratory for production of healthy seedlings Support agricultural development projects Organization of seminars
	CIDA	Supported upgrading of CERE
	French cooperation	
Private sector		
Producers/ exporters: for example	SOBRAGUI (export pineapple to EU)	
	SOGEPAM	Supported SNCQN for the development of analytical capacity. Support development of infrastructure
	SIPEF	Invest in the development of quality systems and infrastructures Beneficiary of PIP programme
	Nabekambio (used to export organic products to Europe)	Participate in the PIP task force
	SIPEB **Cooperative of Banana Producers**	Benefits from support of the PRCB[31]
Producers' organization	UGPAM UPFGM **Federation of Mango Producers**[32]	Lobbying to ensure government policies favour the development of the local private sector. Promote quality of production
Service providers	AGRIMEX	Accreditation assessment
	ECOCERT	Certification of organic products through its representative in Dakar
	Private extension agents (APTP)[33]	Responsible for choice of pesticides and application

[28] Comité National de la Nutrition.
[29] Comité National de la Sécurité Sanitaire des Aliments.
[30] Décret Présidentiel.
[31] Project de Relance de la Culture de la Banane.
[32] Fédération de Planteurs de Manguiers.
[33] Agents Privés de Traitements Phytosanitaires.

ORGANIZATIONS	KEY ACTORS	ACTIVITIES
		Provide advice to producers
NGO	HYCOVE[34] (consumers and sellers hygiene)	Protection of consumer rights
Other organizations	Confédération Nationale du Patronat Fédération Patronale de l'Agriculture	Support development of infrastructure (i.e. calibrating machinery)

- The **INNM,** established in 1989 with the support of UNDP and UNIDO, is the institution responsible for standard setting in Guinea. It is also responsible for control and certification of quality and for standards promotion. A National Quality Brand (LABEL GUINEE) has been developed to certify conformity with standards. It is based on the emission of a certificate of quality to attest conformity. The requirements and management of the brand are the responsibility of INNM. A Certification committee for this National Brand has been set up.

  The INNM elaborates fruits standards based on Codex standards as well as on other national standards such as Tunisian and Côte d'Ivoire standards. The standards are developed by a technical committee for agro-industrial products composed of key stakeholders such as the INNM, the SNCQN, the Fruit and Vegetables Section of the National Directorate of Agriculture (DNA), the CAFEX, research institutions (IRAG, DNRST/MERS), certification bureaux (SGS & Bureau Veritas) and private operators (REFLEG, F.Horticole, Maguiprof, Salguidia).

  The INNM is a corresponding member of ISO and member of ARSO.

  The EU is supporting the upgrade of standard-setting institutions in UEMOA countries. Despite not being part of the union, Guinea wants to be included in the negotiations to benefit from this support. A request for assistance has been submitted to the EU.

  The INNM is not an accredited institution to facilitate recognition of quality standards. It is in the process of negotiating mutual recognition agreements with key partners.
- The institutions responsible for exports certification are the CAFEX and the SNCQN. The **CAFEX** was established to facilitate exports procedures by grouping different institutions under a single umbrella. It brings together experts from the Ministry of Industry and from the Plant Protection and Quarantine section of the Ministry of Agriculture, operating from single offices based at key ports and airports.
- The CAFEX issues Phytosanitary Certificates and quality and conformity certificates. CAFEX receives Field Inspection Certificates,[35] issued by the Plant Protection Division and the LNPV, which are analysed by CAFEX inspectors while re-evaluating the product before issuing the Phytosanitary Certificate.
- Private Certificates following requests by importers are issued by **SGS** or **Bureau Veritas**.

CAFEX OFFICES	NUMBER OF OFFICES	NUMBER OF STAFF
Airport	2	4
Port	1	4
HQ	1	2

- The **SNCQN** was created in 1997 with the mission of verifying the application of the laws and regulations pertaining to food safety. Its attributions include:
  - Quality control of food imports and exports. (The SNCQN has staff at border inspection points, working independently from CAFEX). It is responsible for issuing certificates of origin.

[34] **HY**giène des **CO**nsommateurs et **Ve**ndeurs.
[35] Certificats d'Inspection à la Base.

- Assess conformity with food quality and safety standards of products consumed locally and risk assessment. The Codex Alimentarius standards are used as a reference.
- Perform chemical and microbiological analysis.
- Investigate product conservation strategies and promote them.

The SNCQN has a strong workforce of 627 staff, distributed over the whole of the country.

The SNCQN requires the upgrading and extension of its infrastructure, including the office and laboratory area. It owns a mobile laboratory with the capacity to perform microbiological analysis. The remaining equipment and material are, however, obsolete and need upgrading. Furthermore, extremely low detection limits set by the EU legislation require high precision equipment which is not available.

- The institutions responsible for plant protection are the Plant Protection Division and the National Laboratory of Plant Protection (LNPV). The **Plant Protection Division** has the attribution of a National Plant Protection Organization. It is, amongst the general attributions of the NPPO, responsible for inspections and for issuing Field Inspection Certificates. It is also the focal point for SPS. The Division staff includes several inspectors at central level (26 staff), plus one per *prefecture* and one head of service for each of the seven regions.

  The Division's strategy to implement quality has been to certify producers, distributors and pesticide applicators. With that purpose, and with the support from the World Bank in the context of the National Project for Agricultural Services (PNSA[36]), the Division trained private operators in pesticide application and farm management. Three operators per *prefecture* received training, one was certified (APTP). These types of schemes should be extended to all actors in the food chain.

  The legislation and regulations pertaining to phytosanitary products and quarantine have been recently reviewed. The Division does not, however, have available the tools (equipment and training) required to verify compliance with the European standards on MLRs. There is therefore an urgent need to set up or equip an existing laboratory with the capacity to perform the necessary pesticide residue analysis. The Division made efforts to obtain funding for a pesticide and aflatoxin residue analysis laboratory to attend to the pressing needs of exporters. They already have staff specialized in aflatoxin analysis.

  The traceability requirements of the EU legislation imply a close monitoring of phytosanitary applications during production. To comply with this requirement, the Division requires equally the reinforcement of its staff numbers and further training. Inspectors, especially if they are to carry out field inspection to a large number of farms, need vehicles and rapid diagnosis kits. Mini laboratories may also need to be set up in the areas of concentrated production destined for exports.

  In the international arena, there is a need to build the capacity to participate actively in international standard setting. Of great importance is also the evaluation of the constraints on the application of international standards and how they can be adapted to the conditions of Guinea.

  The National Laboratory of Plant Protection (**LNPV),** operational since 1980, was created and received extensive support from UNDP and FAO. First set up as a project, it was incorporated into the Ministry of Agriculture to become a key element of the National Plant Protection strategy. The LNPV achieved several objectives, including:

  –Identification of pests and diseases in Guinea and study of their biology and ecology.

  –Development of integrated pest management strategies.

  –Training programmes for LNPV technicians, staff of the Plant Protection Division, NGOs and other stakeholders.

[36] Projet National des Services Agricoles.

–Reinforcement of phytosanitary capacity by the establishment of one office, equipped and staffed in each of the four natural regions and an additional one in Kissidougou.

The attributions of the LNPV include also the implementation of surveillance systems and rapid alert systems and the determination of economic injury level (EIL). The LNPV also collaborates with the DPV in R&D projects.

The phyto-pharmaceutical section is responsible for another key element of the phytosanitary systems: the evaluation of eco-toxicological characteristics of pesticides for homologation purposes. With the DPV and the phytosanitary officers at *prefecture* level it participates in pest control operations, pesticide efficacy tests, surveillance of respect for harvest intervals and training of stakeholders. The LNPV has four staff issuing Field Inspection Certificates.

A project is been set up to develop the LNPV capacity to carry out pesticide residues analysis as part of a COLEACP project involving all food chain stakeholders in order to increase food quality by implementing traceability in mangoes.

The LNPV has thus an important part to play in the national phytosanitary system and in compliance with international standards. To be able to fulfil its role, the LNPV needs to upgrade its infrastructure and equipment as well as staff capacity.

- The **Ministry of Health** shares with the SNCQN the responsibility of ensuring the quality control of food consumed locally. It participates in the elaboration and follow-up of food standards, and is responsible for food standards promotion and conformity assessment. Other attributions of the Ministry include issuing sanitary permits for new companies.

  Within the Ministry, the Public Health Section[37] has several activities planned for 2005 with the aim of improving food safety, including an analysis of the food safety situation in Guinea; the development of a food control system adapted to the conditions/resources of Guinea (carried out by one international and one national consultants); and the elaboration and adaptation of directives on food hygiene.

  The Ministry is also in charge of coordinating several committees concerned with food safety (see Table 11), including the National Nutrition Committee. This committee was established to develop the National Food Policy and Food Standards.

  One of the key constraints on the development of an effective food quality control system was identified as the lack of coordination between ministries and departments dealing with food safety standards. A meeting of stakeholders was programmed for the beginning of 2005 to address this constraint.

At food production level, the key institutions responsible for ensuring and promoting quality are under the Ministry of Agriculture.

- The **Division of Production,** which comprises a section on fruits and vegetable, aims to contribute to the improvement of the production to ensure food security and promote export crops. The Fruits and Vegetable Section has benefited from the support of FAO for the promotion of urban horticulture. The **Centre for Promotion of Horticulture** (**CDH**) was instituted by the Ministry of Agriculture to promote and support the development of the horticultural sector in Guinea. An IT system for information exchange on different horticultural varieties is being set up. This system will benefit from access to the FAO **HORTIVAR** database, which in turn provides links to other databases with information on seed producers, research and programmes. Guinea is a member of the **RADHORT** (African Network for the Development of Horticulture).

  Despite the existing programmes in support of horticulture, there is no detailed plan for horticulture development. A strategy for the sector should be elaborated to allow coordination of programmes. A coordination mechanism should also be created.

[37] The Ministry is organized into the National Directorate of Public Health, the Division of Health Promotion and the Public Health Section.

- The **Division of Seeds, Seedlings and Fertilizers**, is responsible for the control of the quality of these three types of inputs. It has a collaborative project with FAO for the development of a Bill (Project de Loi) regulating seed production. This project, which is estimated to last for one year, will be conducted of a team composed by an FAO consultant, a national consultant and a group of ministry staff. Consultation meetings are also planned to validate the legislation thus developed. After the elaboration of the Bill, a technical regulation will have to be developed. The same procedure will have to be followed for the development of a law for the control of the quality of fertilizers (chemical and organic). Other critical elements of seeds and seedlings quality control that need to be put in place include (1) the construction of a Seed and Seedlings Certification Laboratory, (2) the renovation of four mini-labs, and (3) the training of inspectors.
- The **CRAF** is one of the six centres of IRAG responsible for research into aspects of fruit production. It is organized into four fruit research programmes: pineapple, banana, citrus and other fruits (this section aims at exploring potential niche markets with products such as litchis and mangosteens). Mango research is carried out in High Guinea, where most of the producers are located. The Centre is staffed with 27 researchers, of whom two are in training abroad. Its research is driven by the needs of producers and the centre has several contracts with producers' organizations.

  The CRAF has achieved significant research, namely the identification of 11 varieties of mango, productive and resistant to diseases. It is, however, necessary to promote and make these varieties available to producers.
- The **Common Fund for Commodities** is supporting various projects to promote the development of specific-sector commodities in Guinea. CFC funds integrated projects addressing all the needs of the production chain, including training, research outputs, inputs, soil management, seed selection, production, adequate harvesting techniques and tools, packaging and labelling, transport, storage and marketing. Projects have targeted seed potato production, banana production and fruits and vegetable production.

7.2.2 Analytical services

There are no accredited laboratories in Guinea or laboratories with the capacity to perform pesticide residue analysis. The laboratory of the CERE[38] (Centre for Environmental Research) is the one closest to accreditation level, being the better equipped and staffed. Quality systems are being implemented to obtain certification for some of the methods. Technicians are being trained abroad to reinforce their capacities. This laboratory has been supported by the Canadian International Development Agency (CIDA). It has been selected by the INNM as one of the laboratories to be included in the network of the standard-setting institution. It also performs analytical work for several other institutions, including the National Service of Water Management (SNAP[39]), the Ministry of Health and the Ministry of Agriculture.

The laboratory may also be used for a pesticide residue surveillance programme to be established by the Plant Protection Division with FAO support. It may also be included in a network of quality laboratories that the EU wants to support in the region.

In order to attain certification, the CERE needs technical training (3/4 weeks training abroad for 3 staff). English-language courses are equally required for technicians to be able to understand technical documents. The laboratory needs also to repair some of its equipment and acquire some new equipment. Equally important is to ensure continuous electrical supply by acquiring an emergency generator. The laboratory will need technical support for the upgrading of systems and procedures.

[38] Centre d'Etude et de Recherche en Environnement.
[39] Service National d'Aménagement des Points d'Eaux.

However, most other laboratories are heavily underequipped and in need of staff training. Analytical procedures need also to be developed, documented and accredited.

- The laboratory of the SNCQN is heavily underresourced.
- The National Laboratory of Plant Protection (LNPV) is seeking to upgrade its laboratories and build capacity to perform pesticide residues analysis. They too are, however, heavily underfunded.
- The IRAG has a small laboratory, which also needs to be equipped.
- There is a project financed by the African Development Bank to equip the National Laboratory of Public Health, but it is not operational yet. The aim is to upgrade it to the quality of a reference laboratory.
- Finally, the INNM aspires to build capacity to perform different kinds of analysis with the objective of acting as a reference laboratory. Their key needs are in terms of equipment and training of personnel.

There is an urgent need to upgrade infrastructure and equipment of at least one of these laboratories to the level of international accreditation.

Table 12 List of laboratories – Guinea

INSTITUTION	LABORATORY ORGANIZATION
MIC	SNCQN
	INNM
DNA	LNPV
	IRAG
	DPV
Ministry of Health	Toxicology laboratory
	National Laboratory of Public Health[40]
University	CERE
	Chemical Laboratory

7.2.3 National legislation

There are a number of regulatory texts relating to food safety. Some of those are, however, contradictory and many do not conform with international regulations. Additionally, their dissemination is limited. Specific procedures and guidelines have been laid down to regulate food sampling procedures, sealing, storage and transportation of samples, collection of evidence of non-compliance, import and export inspections and food-processing plant inspectors.

The INNM has developed standards, based on the Codex and other international standards, for the production of the following fruits: pineapples, mangoes and bananas. Standards have also been developed for vegetable such as tomatoes and green beans.

The legislation on phytosanitary products has been developed on the basis of the International Convention for Plant Protection (signed by Guinea in 1991 and adopted in 1992). The regulation for its application was implemented in 1994. Subsequently, and within the context of the InterAfrican Phytosanitary Registration[41] Project, several texts were developed to regulate registration (1996), packaging and labelling (1996), sale authorization (2000), transport, storage and distribution (2000), list of pesticides for registration fast stream (2001), and publication of a list of registered pesticides (2001). A National Pesticides Committee was formed to advise the Ministry of Agriculture on which pesticide trials to conduct, issuing of provisional sale authorization, registration and banned substances.

[40] Laboratoire National de Santé Publique.
[41] Homologation Interafricaine Phytosanitaire (HIP). Other signatories include Benin, Côte d'Ivoire, Ghana and Togo.

The regulations regarding quarantine are being developed.

7.2.4 Projects

The COLEACP/PIP has set up a task force in Guinea to address SPS issues. The participants include the DPV, the INNM, the SNCQN, SIPEF and importers of inputs.

A programme of action has been developed by an COLEACP expert and has identified the following needs:

- Reinforcement of the institutions responsible for quality control;
- Reinforcement of support structures, including private service providers (private extension agents, pesticides providers and applicators and others);
- Development of a decentralized information system;
- Support to small-scale producers to promote the implementation of GAP.

Other projects financed externally include:

- The Fruits and Vegetable Project of Mamou Kindia,[42] government-funded, which aims at promoting production, increasing know-how about production technology and marketing to international level standards.
- The Project for the relaunch of Banana Productions (PRCB) [43] is managed by UNOPS.
- The RADHORT, established with the objective of elaborating a National Horticulture Development Plan and producing quality fruits and vegetables.

7.2.5 Macro costs of compliance

Following the analysis of the food control system, its needs in terms of infrastructure, equipment, systems development, personnel recruitment and training and technical assistance were assessed. A summary of the costs of compliance is presented below. Detailed requirements are presented in appendix 2.

[42] Projets Fruits et Légumes de Mamou Kindia.
[43] Projet de Relance de la Culture de la Banane.

Table 13 Macro costs of compliance (summary) – Guinea food safety institutions

ORGANIZATION	OBJECTIVE	COSTS (US$)
INNM	Review and update legal framework	140,000
	Develop standardisation capacity	130,000
	Develop certification capacity	200,000
	Promote implementation of quality standards	170,000
	Improve participation in international standards setting	20,000
	Upgrade infrastructure to allow efficient implementation of quality control systems	0
	Recruitment	10,000
	Sub-total	**670,000**
MINISTRY OF AGRICULTURE PLANT HEALTH DIVISION	Review and update legal framework	0
	Develop capacity to deal with SPS issues	25,000
	Develop inspection and quarantine capacity *(includes CAFEX needs and costs)*	340,000
	Develop export certification capacity	180,000
	Strengthen information, surveillance systems	60,000
	Modernise procedures for registering and control of pesticides	80,000
	Promote implementation of quality standards	50,000
	Improve participation in international standards setting (SPS)	90,000
	Upgrade infrastructure to allow efficient implementation of phytosanitary systems	710,000
	Recruitment	20,000
	Sub-total	**1,555,000**
MINISTRY OF HEALTH DEPARTMENT OF ENVIRONMENTAL HEALTH	Implement coordination systems	50,000
	Review and update legal framework	70,000
	Develop inspection capacity	30,000
	Improve information systems	80,000
	Promote implementation of safety standards	60,000
	Improve participation in international standards setting	80,000
	Infrastructure development	200,000
	Sub-total	**570,000**
	TOTAL COSTS	**2,795,000**

Table 14. Macro costs of compliance (summary) – Guinea food quality institutions

ORGANIZATION	OBJECTIVE	COSTS (US$)
DIVISION OF PRODUCTION	Elaboration of the Horticultural Development plan	200,000
	Consultation Meetings (*3)	600
DIVISION OF SEED AND SEEDLINGS	Development of Bill of Law	20,000
	Development of regulations	20,000
	Construction of a National Laboratory for Seed Certification	1,200,000
	Renovation of mini-laboratories (*4)	100,000
	Training of inspectors *1 university level training* *2/3 months course/commodity*	40,000
	Production of healthy seedlings	0
CRAF	Development of Inputs market	0
	Produce productive and quality seedlings	0
	Upgrade infrastructure – technical offices	200,000
	Upgrade research laboratory	600,000
	Renovate/build cold chambers	350,000
	Equipment *IT and communication systems* *Equipment for independent communication*	100,000
	Materials	60,000
	Transport *Motorbikes + maintenance*	63,000
	Temporary staff for field trials	2,000
	Ensure continuous energy supply *Generator*	0
	Training (2 months)	50,000
	Reinforce quality control institutions	0
	Production of training materials *Consultancy for development of production manual* *Translation into local languages* *Printing*	60,000
CFC	Equipment *IT and communication systems* *Office furniture and materials*	36,000
	Transport *Vehicle + maintenance*	35,000
	Recruitment	5,000
	TOTAL COSTS	3,141,600

7.3 Producers and private sector

7.3.1 Key players

The only large company exporting mangoes today is a Belgian company, **SIPEF**, established in Maritime Guinea. SIPEF markets the mangoes produced by smallholders and collected by intermediaries (know as "pisteurs"). It has a packing house and is applying for EurepGap certification. The payment scheme organized by SIPEF, which pays for the product at its arrival at the packing house, has increased awareness about fruit quality among producers and intermediaries.

SIPEF has benefited from the support of the Pesticide Initiative Programme (PIP) for compliance with EU quality standards.[44]

[44] Five other companies have applied for PIP support in Guinea.

SOBRAGUI, whose main activity is beverage production, namely beer, exports pineapple in order to finance the acquisition of inputs for its main activity.

SOGEPAM is an exporting company, set up in 2004, grouping several operators. It has drawn up contracts with pineapple and mango operators, but fresh fruit exports have not started yet. The company's strategy is to first establish itself through the marketing of less perishable products such as coffee and cocoa. The main target market is the EU and particularly France, given the market links that exist with the former colony. They are equally investigating the opportunities offered by AGOA to export to the United States and the opportunities offered by Middle Eastern markets. In its efforts to market a product of high quality, SOGEPAM hired the services of the SNCQN, SGS and Bureau Veritas. It also benefits from the support of the IRAG. SOGEPAM has also provided support to the SNCQN for the acquisition of testing equipment and supported the locust control campaign.

The **SIPEB** and the **Cooperative of Banana Producers** benefit from funding to develop 100 ha of bananas (25 ha for SIPEB and 75ha for the Cooperative). The funding covered expenses in inputs, machinery, micro-dams and other land improvements, technical assistance, training of producers, storage and a packing house.

The **UGPAM**[45] (Union of the Producers of Ananas of the Maférenya) is a producers' association which comprises four producers' associations with 140 members in total. This organization is a member of the Federation of Farmers of Basse Guinée.

The **UPFGM**[46] (Union of the Fruit Producers of Maritime Guinea), established in 2000, groups producers of banana, pineapple, avocado, mangoes and other fruits. Its mission is to promote local resources and exports. Union members benefit from access to an inputs-selling store, agricultural machinery and information systems. The Union also provides training, technical assistance for soil management, choice and acquisition of improved varieties, information on production techniques including plant protection and market information.

Nabekambio is a company set up to export organic products (of which pineapple was the key one) to the EU. It did so for many years, growing from 11 tonnes of pineapple to 300 tonnes. Nabekam organized an outgrowers' scheme with three producers' association of 150 members. The company financed the producers' associations and provided them with inputs, technical advice, training. Production was then bought at an agreed price.

Nabekam benefited from EU and French bilateral support to carry out variety tests and to develop procedures manuals for organic production of pineapples and bananas. NabeKambio signed a protocol with the PIP in 2003. Following this preliminary research, Nabekam's strategy developed in several phases, starting with identification and establishment of commercial contacts with clients in France, Netherlands and the UK, construction of a unit for product drying and training of workers certification and exports.

The ban on the use of calcium carbide, used for induction of flowering, for organic products in the EU, and the non-existence of a viable alternative, led to the end of exports.

Ecocert certifies organic producers in Guinea. Certification costs amount to 30,000 French francs, including auditor expenses.

In High Guinea, the **Federation of Mango Producers**[47] is extremely well organized, benefiting from the support of the Centre for the Support for Producers' Organizations[48] in Kankan. Marketing, which was geared towards Côte d'Ivoire exporters, suffered heavily owing political crisis in that country. The sector is finding it difficult to reorganize and reach new markets.

[45] Union des Groupements de Producteurs d'Ananas de Maférenyan.
[46] Union des Producteurs de Fruits de la Guinée Maritime.
[47] Fédération de Planteurs de Manguiers.
[48] Centre d'Appui aux Organisations Paysannes Agricoles (CAOPA).

7.3.2 Micro costs of compliance

The prevailing model in Guinea is the export company acquiring products from small producers and intermediaries. For that reason, this analysis estimated the costs of compliance that such an exporter would have to incur to obtain certification for the company and the outgrowers. This model requires a different type of organization and inputs. For instance, to address the requirements of traceability, SOGEPAM, established an Inter-professional Confederation of food chain actors. A membership card was given to each producer,[49] collector, transporter, intermediaries transporting the products, storing and marketing, etc. This model also requires that all actors in the food chain be trained. A growers' organization also needs to be established. The estimated costs presented in Table 15 include acquisition of certified planting material, land improvements and irrigation infrastructures (small dams), the construction of a packing house, cold chambers and the acquisition of machinery such as a spraying vehicle.

Table 15 Micro costs of EurepGap compliance (summary) – Guinea

EUREPGAP REQUIREMENTS	SET-UP COSTS (US$)	ONGOING COSTS (US$)
1. Traceability	4,500	100
2. Record keeping and self-inspection	5,000	3,500
3. Propagation material	50,000	
4. Site management		900
5. Risk assessments	1,500	300
6. Technical services		2,000
7. Laboratory analysis	5,000	5,500
8. Soil and substrate management	300,000	
9. Fertiliser use	200,000	300
10. Crop protection	210,000	1,500
11. Irrigation/fertirgation	300,000	400
12. Harvesting	5,000	500
13. Produce handling (including construction of storage rooms and packing house)	1,000,000	15,000
14. Waste & pollution management	300	
15. Worker health, safety and welfare	9,000	8,000
16. Environmental issues	1,000	1,000
17. Certification costs	10,000	5,000
18. EurepGap procedures	900	2,000
19. Establishment of farmers organization	90,000	6,000
20. Establishment an inter-professional Confederation of food chain actors	60,000	4,000
21. Train intermediary food chain actors	6,000	1,000
TOTAL COSTS	**2,197,200**	**27,000**

[49] Carte de Planteur, Carte de Collecteur.

8 SOURCES OF ASSISTANCE FOR SPS AND AGRIFOOD SAFETY STANDARDS COMPLIANCE

Numerous meetings and conferences on food quality and safety, including the 1991 FAO/WHO Conference on Food Standards, Chemicals in Food and Food Trade, recognized the needs of developing countries for technical assistance to establish or strengthen their food control systems, and have recommended that FAO, WHO and developed countries strengthen their efforts to provide training and other support in this area.

It is, in fact, recognized that it is only through the upgrading of food control systems in developing countries that they would be able to ensure the conformity of their food exports with international requirements and those imposed by the importing countries.

The WTO's SPS Agreement itself recognizes that certain African countries may experience difficulties in fulfilling their obligations. For that reason there are provisions (such as those in Articles 9:1 and 9:2) which offer technical assistance, especially in the areas of processing technologies, research and training, as well as infrastructure.

The technical assistance, which should be provided by developed countries, could take the form of advice, credit, donation and grants and should apply particularly "where substantial investments are required in order for an exporting developing country Member to fulfil the SPS requirements of an importing Member". These technical assistance provisions have, however, remained largely a statement of good intentions. There is a need, nonetheless, for these provisions to be realized.

The EU has made provisions so that financial assistance is made available (1) to producers wanting to conform to EU requirements; and (2) to the public sector to upgrade conformity assessment bodies. The COLEACP (Liaison Committee Europe Africa Caribbean and Pacific) is an inter-professional association of exporters, importers and other stakeholders, financed by the EU and responsible for implementation of the Pesticide Initiative Programme (PIP). PIP was set up to help producers and exporters meet the requirements of EU food safety legislation.

- EDF;
- The Cotonou/EPA agreement provisions.

Support for upgrading of food safety control systems can also be sought through:

- The World Bank, which is becoming increasingly involved in providing SPS-related technical assistance, through both training and infrastructure development;
- World Bank programme of support for rural infrastructures;
- The STDF;
- The international standards setting organizations, Codex and IPPC;
- The FAO, technical cooperation projects;
- The USAID support for PRA;
- Bilateral agreements with importing countries;
- NEPAD;
- AFDB;
- NGOs;

An information system should be set up to facilitate contacts between donors and beneficiaries.

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Appendix 1. Questionnaire and documents

Table 16 Questionnaire and documents needed

KEY QUESTIONS	RESPONDENTS	DATA SOURCES
1. STAKEHOLDER ANALYSIS		
Identification of the key institutions/firms and their role Identification of key producers/traders	Focal person	Ministries' organigram Institutions statutes (ie, Bureau of Standards statutes) Lists of exporters
Identification of international organizations working in the country in food production and quality aspects Identification of projects carried out or proposed dealing with food quality		
2. FRUIT INDUSTRY OVERVIEW		
Fruits area Identification of most important production regions Crop utilization (Sold for fresh consumption (domestic, exported fresh, Used for processing) Export countries and quantities per country Evolution of exports Potential for growth	Ministry of Agriculture National Statistic Institute	National Agricultural Policy Reports of task forces/ Interministerial Groups Governmental websites International databases
3. EXPORT CAPACITY		
Identify the key factors influencing export capacity [50]What are the reasons for which firms are not exporting	Ministry of Agriculture Ministry of Industry and Trade Producers/traders	Reports
4. NATIONAL FOOD QUALITY LEGAL AND REGULATORY FRAMEWORK		
	National Standards Agencies Ministry of Agriculture Ministry of Health	Food quality policy Plant protection legislation Phytosanitary inspections regulation Pest status reports Quarantine legislation Food quality legislation
5. STANDARDS INVENTORY		
For institutions/organizations: Which standards are being (should be) applied in the country? Relate to export destination country For each producer/firm: Which protocols are they applying to themselves, and to suppliers? What is the status of implementation? What standards should they comply with if they wish to export? Key changes/per standard applied Certification procedure and conformity assessment	National Standards Agencies Ministry of Agriculture Certification Bodies/firms Producers/traders	Consultancy reports International agencies' reports
6. ASPECTS COVERED BY STANDARDS		
7. COSTS OF COMPLIANCE WITH THE DIFFERENT STANDARDS		
7.1. Macro costs	Ministries National Standards Agencies Laboratories	Institutional plans Reports of projects carried out or proposed to strengthen phytosanitary capacity (project proposals, budgets) Inventory of laboratories' capacities and needs

[50] E.g. Low demand, high production costs, low quality, lack of technical expertise /knowledge, shipping schedules (timing and quantities), lack of storage facilities, tariffs and quotas, marketing and distribution costs, lack of information about and contacts with exporters/importers.

KEY QUESTIONS	RESPONDENTS	DATA SOURCES
		Projects to upgrade laboratory capacity (proposals, budgets)
7.2. Micro costs What proportion of total costs does this represent and is this regarded as a significant cost by the producer?	Producers Exporters Certification bodies/firms	Fees schedule for certification firms Fee schedule for lab: soil analysis, water analysis, pesticide analysis Fees charged for phytosanitary certificates
7.3. Costs of non-compliance		
How many firms have been prevented from exporting due to agrifood standards, SPS measures? What are the penalties for non-compliance? (how many actual and threatened suspensions, remedial action and timescales)		
8. CONSTRAINTS ON COMPLIANCE/PROBLEMS AND WAYS STAKEHOLDERS OVERCAME THEM		
What special problems do members have in following the different protocols? What is their opinion on how to overcome the obstacles identified? What could be done at regional level? What could be done at international level? Knowledge about standards (if standards are not being applied, what information do stakeholders have about them?) How difficult is it to obtain information about regulations (difficult/not difficult)?	All respondents	
9. BENEFITS OF THE SCHEME		
Are the international standards beneficial/detrimental to the success of exports? What is the opinion of growers using these protocols on their value and future prospects? Is there any price premium? Does the scheme provide preferential market access, enhanced food safety, any other benefits (e.g. enhanced food quality, environmental protection, worker health/safety/welfare or ethical trading benefits)?	All respondents	
10. WORKSHOPS		
Identify the key issues that stakeholders would like to see addressed in the workshop	All respondents	

Appendix 2: Requirements for a national food safety control system: Example of typical activities and inputs.

Table 17 Requirements for standard-setting organizations

REQUIREMENTS	ACTIVITIES		*INPUTS*
REVIEW AND UPDATE LEGAL FRAMEWORK	Formulation of a national quality policy		*Already available*
	Revision of food safety legislation Develop new legislation.		*International consultant (8 months)*
	Revision of statutes Development of legislation for metrology, certification, accreditation Inventory of existing technical regulations and revision		*International consultant (16 months)*
	Training for those involved in developing and applying the legislation		*Train 6 technicians* *International consultant (*1)* *National consultant (*3)* *15 days/2 courses*
			Train 50 participants from other institutions and companies *National consultant (*2)* *Secretarial services (*1)* *5 days/2 courses*
DEVELOP STANDARDIZATION CAPACITY	**Training**	Train staff and members of technical committees on fresh fruits and vegetables	*Train 15 staff/members* *International consultant* *National consultant (*2)* *Secretarial services (*1)* *1 week*
	Strategic planning	Identification of priorities for standards development	*National consultants (*2)* *Local staff per diems (*2)* *Travel to production zones* *6 weeks*
	Data and documentation collection	Field survey to collect data about commodities (varieties grown, size, colour, shape, production systems, pesticide application and harvesting times) Develop checklist of all requirements	*National consultants (*3)* *Local staff per diem (*2)* *Travel to production zones* *5/6 months*
		Translation of international standards into local language	*5 standards* *10 pages/standard*
		Acquisition of Technical documents	*Document costs*
	Elaboration of standards	Standards development Meetings of the working group	*5 participants* *Travel* *3/4 meetings*
		Meetings of the National Technical Committee on fresh fruits and vegetables	*15 participants* *Travel* *2/3 meetings*
		Produce final standards	*Printing* *Distribution* *Stationery*

REQUIREMENTS	ACTIVITIES		*INPUTS*
	Facilitate elaboration of technical regulations and SPS measures	Inventory of existing regulation Establish a framework for the development of technical regulations	*International consultant (9 months)*
		Training of technical staff involved in the development and implementation of SPS regulation	*Train 10 participants of other institutions* *National consultant* *10 days/2 sessions*
		Create awareness of technical regulations and the need for institutional coordination	*20 participants* *1 day* *3 seminars*
		Support the SPS Working Group	*15 participants, travel* *2 meetings*
DEVELOP CERTIFICATION CAPACITY	**Increase conformity assessment capacity**	Reinforcement of auditing capacities	*Train and certify 10 auditors* *International consultant* *National consultant* *2 weeks*
		Reinforcement of inspection capacities of inspection bodies	*Train 25 inspectors* *National consultant (*2)* *Secretarial services* *2 courses*
	Develop certification systems	Develop and implement specific certification schedules for fruits; develop and promote a quality label Create specific legislation	*Consultant (8 months)* *Label design, promotion and communication*
	Get institution accredited as a certifying body	Implementation of quality system to get accreditation	*International consultant (5 months)*
		Accreditation from regional accreditation organizations: (e.g. SANAS)	*Accreditation costs* *Fees, costs of travel and inspectors' expenses*
	Support laboratory certification	Inventory existing laboratory capacities Action programme for certification	*Consultant (7 months)*
	Create a focal point to accredit laboratories, inspection and certification bodies, training organizations	Create legislation Prepare systems Equip the focal point	*International consultant* *IT systems*
		Train staff for the focal point	*Train and register 2 auditors for accreditation* *Short course abroad*
PROMOTE IMPLEMENTATION OF QUALITY STANDARDS	**Promote standards**	Preparation and/or acquisition of training materials	*Training publications and videos*
		Training of trainers sessions	*Train 30 participants* *National consultant/trainer* *3 days* *2 sessions*
		Promotion seminars for fresh fruits standards	*20 participants* *1 day* *3 seminars (North, Centre, South)*
		Promotion events:	*Continuation and upgrade of Quality Week*

REQUIREMENTS	ACTIVITIES		*INPUTS*
		Publication of bulletins and other information documents	*Printing equipment* *Software* *Materials*
		Support for participation of producers in international meetings/fairs	*20 participants/5 days* *Flights* *Per diem*
	Set up training courses on quality management	Preparation of training course	*International consultant (14 months)*
		Staff training	*Training 6 technicians* *3 months training course abroad*
		Training food industry quality control managers in food quality assurance systems, including GMP, HACCP, EurepGap (part of these costs may be recovered through service delivery)	*Training on quality management systems, Environmental Management and HACCP* *Train 200 participants/year*
	Technical assistance to exporters and importers	Provide support to companies for the implementation of quality management systems and certification (part of these costs may be recovered through service delivery)	*Support 20 companies*
	Develop Information Systems	Design an information centre of standards and quality systems	*National consultant (*2)*
			Develop/buy the information system database and input information database
			Collect/buy data
		Install modern IT systems	*IT systems* *Other equipment*
		Train staff	*Train 1 staff* *Short course abroad*
IMPROVE PARTICIPATION IN INTERNATIONAL STANDARDS SETTING	Strengthen enquiry and notification points (SPS, CODEX and TBT)		*International consultant (9 months)*
			IT systems: *2 computers, photocopier, printers* *Communications systems: modems, phone, internet connection*
	Capacity building to challenge SPS standards of other countries based on risk assessment: Training on negotiation capacity and SPS issues		*Training 5 staff* *Short course abroad*
	Financial support for participation in international and regional meetings (TBT, SPS meetings)		*2 participants/7 days* *Flights (intercontinental/regional)* *Staff per diem* *4 meetings*
	Membership of international organizations ARSO, IAEA Full membership of ISO		*Membership fees*
UPGRADE INFRASTRUCTURE TO ALLOW EFFICIENT IMPLEMENTATION OF QUALITY CONTROL SYSTEMS	Upgrading infrastructure (including premises and transport fleet)		*Project design, selection of building company, construction* *Equipment for the new infrastructure: office furniture*

REQUIREMENTS	ACTIVITIES	*INPUTS*
		and equipment *Vehicles*
RECRUITMENT	Staff recruitment	*Professional* *Administrative/technical*

Table 18 Requirements for Ministry of Agriculture – Plant Health Division

REQUIREMENTS	ACTIVITIES		*INPUTS*
REVIEW AND UPDATE LEGAL FRAMEWORK	Revise plant protection and quarantine regulation to comply with farm-to-fork and HACCP requirements Update quarantine pest list Guidelines for pest risk assessment Revise legislation to allow enforcement of penalties Develop regulation for user charge and cost recovery mechanisms to be applied to plant health services		*International consultant (2 months)* *National consultant (3 months): (university agronomist/biologists with experience in the field)*
			Consultation workshops
DEVELOP CAPACITY TO DEAL WITH SPS ISSUES	Develop the capacity to conduct risk analysis to provide justification for SPS measures applied to imports and for claim regarding absence of pests/pest free areas		*Train 5 staff in risk assessment and SPS* *Short courses abroad*
	Carry out PRA for key pests		
DEVELOP INSPECTION AND QUARANTINE CAPACITY	**Evaluation of inspection capacity**	Identify needs and develop guidelines for systems upgrading Produce list of infrastructure, equipment, staff and training needs	*International consultant (Phytosanitary expert *2 month)* *National consultants:* *–Project Coordinator (3 months)* *–Consultants (3*1 month)* *International travel)* *travel to key phytosanitary point + miscellaneous expenses*
	Develop inspection system	Implement system for inspections starting from field	*National consultant (2*5 months)* *Transport to production zones + miscellaneous expenses*
		Acquire equipment for reporting accessible to plant health inspectors at provincial level	*IT systems (1 per province = 20)* *Communications systems*
			Vehicles (cars or motorbikes)
			Testing equipment for inspectors (see infrastructure development)
		Prepare and publish manuals for inspection procedures	*International consultant (1 month)* *Editing of manuals*
	Train staff on modern phytosanitary methodologies	Preparation of training programmes	*International consultant (1 month)* *National consultants (3*1 month)*
		Training of senior staff at central and regional level on ISPM and their application Standard requirements of key export markets Inspection, surveillance and certification procedures Data management	*Train 35 senior staff* *International consultant (1 month)* *3 weeks*
		Training of plant health inspectors, namely on pest and diseases diagnosis technique	*Train 15 inspectors* *International consultant* *National consultant (*1)* *5 days*

REQUIREMENTS	ACTIVITIES		*INPUTS*
		Training of trainers for extension agents from Ministry of Agriculture Workshops for groups of commodities Training on standards Good Agricultural Practices HACCP Safe use of pesticides	*Train 20 extension agents* *National consultants (*3)* *Secretarial services (*1)* *1 day*
DEVELOP EXPORT CERTIFICATION CAPACITY	**Develop certification systems**	Setting up of an electronic system of certification	*International consultant (1 month)* *National consultant (2*3 months)* *Information expert (1 months)* *Transport to inspection points + miscellaneous expenses*
	Upgrade border inspection points	Upgrade infrastructure or set up new inspection points: at borders and international airports	*Project design, selection of building company, construction* *Equipment for the new infrastructure:* *Office furniture*
		Equip border inspection points	*IT and communication systems (*20)*
			Testing equipment
		Establish adequate destruction facilities	*Construction costs* *Incinerator*
STRENGTHEN INFORMATION, SURVEILLANCE SYSTEMS	**Implement a pest and disease monitoring system**	Develop and implement monitoring system	*National consultant (2*5 months)* *Transport to production zones + miscellaneous expenses*
		Prepare and publish manuals for PRA and pest monitoring	*International consultant (Phytosanitary expert* 1 month)* *Editing of manuals*
	Update pest status list	Organize a team to collect information about pests and diseases present in the country	*International consultants (2 consultants * 2 months)* *National consultants (4 *18 months + 2 Plant Health officials/ province)*
			Equipment e.g. t *Photographic equipment* *GPS* *Prospection kit*
			Identification (send samples to South Africa)
			Transport fuel
	Improve information flow	Develop pest information database, including system for surveillance data management Develop information network for plant health officials	*National consultants:* *–Information expert (2 months)* *–Phytosanitary expert (3*1 month)*
			Subscriptions to journals, databases

REQUIREMENTS	ACTIVITIES		*INPUTS*
	Control and eradicate pests and diseases that hinder trade	Develop and implement emergency action plans for exotic pests	*National consultant (2*5 months)* *Transport to border zones + miscellaneous expenses*
MODERNIzE PROCEDURES FOR REGISTERING AND CONTROL OF PESTICIDES	Develop a system for control, inspection and approval of pesticides		
PROMOTE IMPLEMENTATION OF QUALITY STANDARDS	**Promote standards**	Train stakeholders on SPS issues, traceability, HACCP	*Seminar for 40 policy level stakeholders* *International consultants – Phytosanitary expert (1)* *National consultants (4)* *1 day*
	Technical assistance to exporters and importers	Set up a Joint Commission of private operators and government authorities (Ports Authority, Customs, Ministries of Environment, Trade and Health	*Seminar for 40 policy level stakeholders* *International consultants – Phytosanitary expert (1)* *National consultants (4)* *1 day*
		Establish a costs recovery programme for services to the private sector	*Phytosanitary expert (1)* *Plant health officer (4)*
		Provide technical assistance to companies	*Can be recovered through service provision* *Assist 10 companies*
	Assistance to small-scale farmers	Develop pilot schemes for implementation of quality standards by smallholders	*4 national consultants* *6 months*
IMPROVE PARTICIPATION IN INTERNATIONAL STANDARDS SETTING (SPS)	Strengthen SPS inquiry and notification point		*International consultant (4 months)*
			IT and communication systems
			Develop a website SPS
	Training on negotiation capacity and SPS for plant health officials Implementation of transparency provisions (establishment of inquiry points, notification procedures) Application of risk analysis Dispute settlement procedures and analysis of SPS related disputes		*Training 3 staff* *Short course abroad*
	Financial support for participation in international SPS meetings		*2 participants/7 days* *Flights* *2 meetings*
UPGRADE INFRASTRUCTURE TO ALLOW EFFICIENT IMPLEMENTATION OF PHYTOSANITARY SYSTEMS	Upgrade equipment central level		*IT and communication system*
			Vehicles
	Upgrade Border Inspection Points		See development of certification capacity
HUMAN RESOURCES DEVELOPMENT	Staff recruitment at central level; border inspection points, recruitment of inspectors		*Professional* *Administrativ/ technical*

Table 19 Requirements for Ministry of Health – Department of Environmental Health

REQUIREMENTS	ACTIVITIES		*INPUTS*
REVIEW AND UPDATE LEGAL FRAMEWORK	Revision of existing legislation on food hygiene Revise penalties for non-compliance		*International consultant (8 months)* *Consultation meetings*
DEVELOP INSPECTION CAPACITY	**Collection of information**	Identification of production sites and fruits Identification of export agents (formal, informal, private, state); develop database Develop a system for reporting for new market operators	*National consultants (*4)* *6 months* *Communication and travel to production sites*
	Develop inspection systems	Develop procedures and manuals	*National consultants (*4)*
	Train inspectors	Training of food safety inspectors (there is one per province)	*Train 10 inspectors* *International consultant* *National consultant* *5 days* *Equipment for field testing* *IT and communication systems* *Vehicles for inspectors*
STRENGTHEN INFORMATION SYSTEMS	Conduct epidemiology studies		*Consultant*
	Risk assessment of foodstuffs		*Consultant*
	Development of a database on mortality/morbidity associated with food contamination		*Data collection* *IT consultant* *IT and communication systems*
PROMOTE IMPLEMENTATION OF SAFETY STANDARDS	Awareness of food safety issues. Trainer of trainers sessions		*Train 30 inspectors* *Field visit* *National consultants (trainers ,facilitators, secretariat, drivers)* *3 days* *Editing of manuals*
	Dissemination of Codex standards		*Seminar for 40 polic-level stakeholders* *International consultants – Phytosanitary expert (1)* *National consultants (4)* *1 day*
IMPROVE PARTICIPATION IN INTERNATIONAL STANDARDS SETTING	Strengthen Codex focal point		*International consultant (4 months)* *IT and communications*
	Capacity building for participation in Codex activities		*Train 2 staff* *Short course abroad*
	Financial support for participation in Codex meetings and in meetings of the international working groups		*2 participants/7 days* *Flights* *Per diem*
	Support Codex working groups		*15 participants* *Travel* *4 meetings*
INFRASTRUCTURE DEVELOPMENT	Upgrade National Laboratory of Hygiene, Water and Food.		*(See laboratories section)*
HUMAN RESOURCES DEVELOPMENT	Staff recruitment		*Professional* *Administrative/technical*

Table 20 Requirements for laboratories

OBJECTIVE	ACTIVITIES	*INPUTS*
EVALUATION OF LABORATORY CAPACITY	Evaluation of staff, equipment and training needs Development of a programme of action for certification	*Consultant*
UPGRADING OF LABORATORY	Support for implementation of action programmes	*Consultant*
	Infrastructure upgrade/ establishment of new laboratories	
	Equipment upgrade	*For example* *Pesticide testing equipment* *Gas liquid chromatographs* *High-performance chromatographs* *Atomic spectrophotometer* *General lab appliances and reagents*
	Specialized training	*Masters abroad* *In-house training*
	Accreditation/certification	*Accreditation/certification assessment*
		Accreditation/certification costs

Table 21 Requirements for Ministry of Agriculture – Plant Production Division

OBJECTIVE	ACTIVITIES	*INPUTS*
IMPROVE PRODUCTION QUALITY	Production and distribution of certified improved plants, resistant to pests and diseases Improved crop management	*Certified plants* *Research* *Train producers on quality production* *Train extension agents* *Extension*
IMPROVE QUALITY DURING PROCESSING, STORAGE AND MARKETING	Improve quality management systems during processing and marketing Assist the establishment of cold storage facilities Provide transport with cold storage	*Training* *Extension* *Development of procedure manuals* *Packing house* *Cold storage* *Refrigerated trucks*
STRENGTHEN FARMERS' ORGANIZATIONS	Support to farmers' associations	*Training* *Management support*

Table 22 Requirements for other organizations – Business support organizations

OBJECTIVE	ACTIVITIES	*INPUTS*
PROVIDE INFORMATION ABOUT THE REQUIREMENTS OF EXPORT MARKETS	Data collection	*Consultant/staff* *Subscriptions to databases* *Books and other materials*
	Development of a database	*IT Consultant* *Web page development costs*
	Database maintenance	*IT systems*
		Website maintenance online
		Communication systems
		Staff recruitment and training
	Financial assistance for the participation in International fairs	*Flights* *Per diem*

Appendix 2. EurepGap compliance criteria and inputs required

Table 23 EurepGap compliance criteria and inputs required (Detailed)

EUREPGAP REQUIREMENTS	*INPUTS*
1. TRACEABILITY	
Establishment of a traceability system that allows product to be traced back to the registered farm Identify every orchard physically, e.g. using description, map	*Stationery/forms* *Sign posting (label and stickers)* *Mapping* *Computers (hardware and software)*
2. RECORD KEEPING AND SELF-INSPECTION	
Keep up-to-date records for a minimum of two years Keep records that reference each area covered by a crop with all the agronomic activities Records of all fertilizer applications Records of irrigation/fertigation water use. Record all crop protection product applications Complete self-inspection and document it (annually)	*Develop record-keeping sheets* *Hire personnel to complete them* *Build offices* *Consultant services*
3. SITE MANAGEMENT	
Prepare soil maps for the farm	*Consultant services*
4. RISK ASSESSMENTS (revised annually)	
Food safety, operator health and environment risk assessment Potential risks for organic fertilizer (disease transmission) Risk assessment for irrigation water Hygiene risk analysis for harvest and pre-farm gate transport process Risk assessment of hygiene aspects of the produce handling operation. Identify all possible waste products produced Risk assessment for working conditions	*Technical services for risk assessment*
5. TECHNICAL SERVICES	
Advice on quantity and type of fertiliser: Use a trained technician to determine quantity and type of fertilizer to use Use trained technician for choice of pesticides Use systematic methods to calculate water requirement of the crop Use technician with recognized certificates or formal training to advise/carry out post-harvest treatments Development of procedures for water management hygienic product handling (physical, chemical and microbiological contaminants) Waste and pollution action plan	*Hire specialized staff*
6. LABORATORY ANALYSIS (Laboratory should be accredited to ISO 17025 or equivalent standard)	
Annual pesticide residue testing Check maximum levels for heavy metals established by the Codex Alimentarius Check microbiological contaminants criteria (CAC/GL 21–1997) Contents of N·P·K of organic fertilizer Analyse irrigation water at least once a year to be done by a suitable laboratory Carry out annual analysis of water for post-harvest washing Soil analysis	*Laboratory analysis*
7. SOIL AND SUBSTRATE MANAGEMENT	
Use cross line techniques on slopes, drains, sowing grass or green fertilizers, trees and bushes on borders of sites, etc.	*Consultancy services* *Seeds and other materials*
8. FERTILIZER USE	
Fertilizer application machinery	
Carry out verification of calibration by a specialised company, every year	*Services of a specialized company*
Fertilizer storage Covered area free from waste, and does not constitute a breeding place for rodents	*Build storage* *Maintenance costs*

EUREPGAP REQUIREMENTS	*INPUTS*
Dry Well ventilated and free from rainwater or heavy condensation At least 25 metres away from direct water sources	
9. CROP PROTECTION	
Implement IPM techniques	*IPM training*
Modern application equipment	*Acquire machinery and sprayers*
Annual maintenance check of state of application machinery	*Services of a specialized maintenance company*
Pesticide storage and handling	
Crop protection products storage Sound and robust Secure Lockable A source of clean water no more than 10 metres distant and eye washing facility appropriate to the temperature conditions: built of materials or located so as to protect against temperature extremes Fire-resistant Well lit Shelving made of non-absorbent material Utensils, e.g. buckets	*Build chemical store* *Buy equipment*
	Dedicated vehicle for pesticide transport
Chemical mixing area	*Build area*
Separate storage for empty containers	*Build storage*
Disposal of empty crop protection product containers in a safe manner	*Build chemical disposal site*
Application machinery with pressure-rinsing equipment for containers	*Special machinery*
Dispose of obsolete crop protection products securely	*Support national programme to dispose of obsolete products*
10. IRRIGATION/FERTIGATION	
Implement a water management plan to optimize water use and reduce waste	*Consultancy services*
11. HARVESTING	
Hygiene	
Removed packed produce from field overnight	*Build storage for produce* *Temporary holding shades* *Main holding shade with refrigerator*
Packaging/harvesting containers on farm	
Use containers complying with recommended International Code of Practice for Packaging and Transport of Tropical Fresh Fruit and Vegetables (CAC/RCP 44–1995).	*Costs of containers*
Label in accordance with CODEX STAN 1–1985, Rev. 2–1999 plus: Produce variety and/or commercial type Name and address of exporter, packer and/or dispatcher. Identification code Country of origin	*Costs of labelling*
12. PRODUCE HANDLING	
Implement an hygiene procedure	
Post-harvest washing	
Where water is recirculated for final produce washing, it is filtered and disinfected, and routinely monitored	*Water filtering system*
On-farm facility for produce handling and/or storage	*Packing house* *Cold storage*
Floors designed to allow and ensure drainage with slopes, drainage channels Light bulbs protected/shielded so as to prevent contamination of food in case of breakage	*Build storage*
Separate storage for waste material	*Build storage*
13. WASTE & POLLUTION MANAGEMENT, RECYCLING AND RE-USE	

EUREPGAP REQUIREMENTS	*INPUTS*
Waste and Pollution Action plan	
Implement a plan that covers wastage reduction, pollution and waste recycling	*Consultancy services*
Farms have designated areas to store litter and waste	*Build waste disposal facilities*
Treat waste water	*Water treatment facilities*
14. WORKER HEALTH, SAFETY AND WELFARE	
Training	
Training workers operating dangerous or complex equipment Train personnel handling pesticides Train at least one person in first aid Basic hygiene training for fruit handling by qualified people	*Training courses*
Facilities, equipment and accident procedures	
Toilets and hand-washing equipment for harvest workers	*Build toilets* *Build hand-washing facilities* *Build shower facilities*
Medical equipment (packing house and coldstore)	*First aid kits*
Fire equipment (packing house)	*Fire extinguishers*
Signs warning of potential dangers placed on access door panels with emergency procedures	*Signs*
Separate storing for all protective clothing	*Build storage*
Acquire protective clothing (e.g. rubber boots, waterproof clothing, protective overalls, rubber gloves, face masks etc.)	*Buy personal protective equipment*
Welfare	
Health checks on staff working with pesticides	*Medical care*
The living quarters on farm are habitable sound roof, windows and doors, and they have potable water, toilets and drains.	*Build quarters for workers*
15. ENVIRONMENTAL ISSUES	
Carry out a base line audit of the fauna and flora on farm	*Environmental consultancy services*
Develop a wildlife conservation statement.	*Environmental consultancy services*
Training farmers on environmental impacts of agricultural activities	*Training course*
Implement wildlife and conservation measures	*Costs of corrective actions*
16. CERTIFICATION	*Certification assessment*
	Certification costs
17. EUREPGAP PROCEDURES	*Hire specialized staff and train in EurepGap procedures*
	Adapt EurepGap checklist to local/crop conditions
	Training course for growers

Appendix 3. Glossary and definitions of key terms associated with certification programmes (FAO DEFINITIONS)

Accreditation The evaluation and formal recognition of a certification programme by an authoritative body.

"The system of rules, procedures and management for carrying out certification, including the standards against which it is being certified, is called the certification programme. One certification body may execute several different certification programmes. To ensure that the certification bodies have the capacity to carry out certification programmes, they are evaluated and accredited by an authoritative body. Certification bodies may have to be accredited by a governmental or parastatal institute, which evaluates compliance with guidelines set by ISO, the European Union or some other entity for the operation of certification and inspection bodies. In addition, standard-setting bodies might accredit certification bodies for the scope of their particular standard. When the standard-setting body has developed normative standards, they will evaluate whether the specific standard used by the certification body is in line with the generic standard and whether they are satisfied with the method of verification."

Audit, auditor, auditing body See: inspection, inspector, inspection body.

Certification A procedure by which a third party gives written assurance that a product, process or service is in conformity with certain standards.

Certification is a procedure by which a third party gives written assurance that a product, process or service is in conformity with certain standards. The certificate demonstrates to the buyer that the supplier complies with certain standards. Certification is always done by a third party. The verification is done and the assurance is provided by a party without direct interest in the economic relationship between the supplier and buyer. An internal control is a first-party verification. When a buyer verifies if the supplier adheres to a standard, it is a second-party verification.

Certification body An organization performing certification. Sometimes referred to as the certifier or the certification agency. The certification body may use an existing standard or may set its own standard, perhaps based on an international and/or normative standard. *The certification body might do the actual inspection, or contract the inspection out to an inspector or inspection body. The certification decision, i.e. the granting of the written assurance or "certificate", is based on the inspection report, possibly complemented by other information sources.*

Certification label A label or symbol indicating that compliance with specific standards has been verified. Use of the label is usually controlled by the standard-setting body.

Certification programme A system of rules, procedures and management for carrying out certification. Sometimes referred to as a certification system. One certification body may execute several different certification programmes.

Inspection An on-site visit to verify that the performance of an operation is in accordance with specific standards of a certification programme.

Inspector The person appointed to undertake the inspection, and may be an independent operator or an employee of the certifier.

Inspection body The body performing the inspection part of certification. Where a certification body performs its own inspections, the certification body is also the inspection body.

Standards Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions, to ensure that materials, products, processes and services are fit for their purpose. Standards include environmental standards; organic standards; labour standards; social standards; and normative standards.