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PRIVATE STANDARD SCHEMES AND DEVELOPING COUNTRY ACCESS TO GLOBAL VALUE CHAINS: CHALLENGES AND OPPORTUNITIES EMERGING FROM FOUR CASE STUDIES

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PREFACE

This study discusses the effects of private voluntary standards on market access for selected developing countries. It is based on case studies of selected fruit and vegetables for four countries, Chile, Ghana, Peru and South Africa, as well as relevant literature. Each of the case studies is based on a common interview framework. Its purpose is to improve understanding of how private standards operate as governance tools in global value chains. It also seeks to understand the challenges and benefits which these bring to the different agents in the value chain.

It complements and extends previous OECD work on the economics of private voluntary standards schemes and the shaping of the agro-food economy by exploring challenges and benefits which private standards hold for developing countries in accessing global value chains. This paper is part of Activity F of the programme of work 2005-2006: *The Impacts of Private Voluntary Standards on Market Access*. A scoping paper was presented in fall of 2005 where the approach and general themes were discussed.

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Part I: Executive summary

1. This study examines the impacts of private voluntary standards (PVS) on developing country access to global value chains. It is based on interviews with fruit and vegetable (F&V) producers and exporters in `Chile, Ghana, Peru and South Africa. The fruit and vegetable sector was chosen because these are high value products with favourable export growth prospects and may allow developing countries to exploit their abundant resource – labour in their production. The four case studies were chosen so as to represent as wide a variation as possible in levels of economic development to permit assessing how this influences firm capacity to meet private standards in fresh produce sector. Although the sample is limited, it provides initial empirical work on the private standards issue across different developing countries using a common framework.

2. Preliminary findings indicate that compliance with PVS schemes is increasingly mandatory for accessing Global Value Chains (GVCs). Furthermore, from previous interviews with major retailers these are here to stay and will likely continue to increase in scope and stringency. Retailers with their buyer power will enforce them, along with commercial requirements, such as minimum volumes and flexible delivery schedules.

3. The interview results find that exporters are a key link between importers/buyers on the one hand and producers in the developing countries on the other. Exporters are responsible for transmitting demand specifications to producers and ensuring that these are fulfilled. In the case of small and even medium sized producers, they frequently assist in organizing, financing and overseeing technical aspects of production as well as assisting them in the audit and certification process. Thus, they play a vital role in the integration of small and medium sized growers in the global value chain.

4. Even when the constraints, internal to the producer/farm, such as human/ physical capital and finance necessary to comply with PVS, can be relaxed, numerous constraints external to the producer/farm may remain. These include the general public infrastructure and services at the macro and sector level, such as transportation and telecommunications systems, energy supplies and testing facilities among others. To the extent these are limiting producers'/exporters' effective capacity to meet commercial export demands they are also impeding market access. These may be particularly binding constraints for small and medium producers, who cannot use their private resources to overcome these systemic constraints.

5. The case studies suggest that large producers or exporter-producers are able to adapt to meeting private standards for market access. However, small-holders have an increased risk to be excluded from GVCs, due to human and physical capital constraints in complying with PVS as well as not being able to circumvent efficiently any infrastructure or service constraints.

6. Government's role in the higher income developing countries is seen as one of accompanying the producer and export industries through the provision of an appropriate infrastructure that enables industry

to operate competitively and efficiently. This public/private collaboration has been particularly successful in Chile, and to some extent in South Africa and Peru, but much less so in Ghana and thus leaves space for further policy discussions

Part II. Introduction

7. Private voluntary standards (PVS) play an increasing role in global agro-food system and are closely linked to the evolving economic environment as well as to the institutional and legal framework of the country. Private standards are set by the buyers - most often retailers, even if operating through intermediaries. Furthermore, in the food sector these are increasingly set by coalitions of firms which are harmonizing their requirements to facilitate sourcing and regulatory compliance. These (PVS) relate to both product and process attributes for which compliance is verified through third party audits and certification. Sellers that cannot or choose not to meet these standards do not participate in these markets. The most important reasons for the development of private voluntary standards include: the desire to reduce in-house monitoring and inspection costs as well as reduce information asymmetry between retailers and producers which has increased with global sourcing, increased responsibility of firms to ensure food safety and increased competition between firms domestically and internationally. A recent analysis of role of private standards in the food chain can be found in OECD, 2006.

8. Access to OECD markets remains one of the leading demands of developing countries in the negotiations for agricultural trade liberalization.[1] For many exporters this means access to high value retail chains in industrialised countries but whose access is becoming more difficult rather than less. Products must now meet not only the importing country regulations, but also those set by major importers and retailers which are often more complex and stringent than those of governments (OECD, 2006; Henson and Reardon, 2005). Although these private standards are voluntary and not required by law, they are required for doing business, thus are *de facto* mandatory (Henson and Northen, 1998; Fulponi, 2005). The role of private standards has raised concerns about market access for developing country producers, in particular small and medium producers, Many of these are constrained in terms of human/physical and financial capital at the farm level and operating in countries whose lack of adequate infrastructure and services make it too difficult and costly for them to comply with these private standards.

9. Recently, complaints on private voluntary standards (PVS) as trade barriers in the agricultural sector were expressed at the WTO, for instance at the 2004 WTO symposium and the WTO SPS meeting in June 2005.[2] The PVS referred to in the complaint are those most often demanded by leading retailers in their sourcing of food products. However, being set by the private sector as product specifications, these have not been within the remit of the WTO. Such complaints, nonetheless, signal the apparent importance of these standards schemes for a number of exporting developing countries and raise a number of issues on the evolution of global sourcing, in particular that undertaken by lead firms within a global value chain (GVC) framework. Since private standards schemes are expected to continue to evolve, increasing in stringency and extending over wider sets of attributes (OECD, 2006), what does this mean for access by developing countries to global value chains?

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1 While the goal of trade agreements is to facilitate trade and to make doing business easier for producers of goods and services, yet allowing governments to meet their social and environmental objectives, the potential for trade is not always realised when supplies do not match specific product demands http://www.wto.org/english/thewto_e/whatis_e/whatis_e.htm

2 Report of the meeting of the WTO Sanitary and Phyto-Sanitary Measures Committee, 29-30 June 2005 http://www.wto.org/english/news_e/news05_e/sps_june05_e.htm

10. To gain some insight into the constraints, challenges and benefits of meeting private standards in developing countries, empirical studies on four developing countries were undertaken. The following analysis is based on interviews with producers and exporters of fresh fruits and vegetables in Chile, Ghana, Peru and South Africa with respect to their experience in the dealing with private voluntary standards. The fruit and vegetable (F&V) sector was chosen because these are high value products with favourable export growth prospects and allow developing countries to exploit their abundant resource - labour. Fresh F&V trade accounts for about 15% of total agricultural trade and is expected to increase (Huang, 2004:3), thus it is likely to remain important for agricultural trade.

11. The study is limited in that it aims is to shed some light on the issue of private standards and access to global value chains based on experiences of actual exporters and producers in meeting standards in selected countries. It does not purport to be a global or in depth analysis of the issue, but is one of the first empirical comparative studies on the topic and should be followed with more in depth country studies.

12. The rest of this paper is organized as follows: Part III discusses some of the important issues in developing country access to the global value chain; Part IV describes the method of analysis; Part V presents what was learned from the case studies; Part VI discusses the relation between private standards and small holder agriculture, and Part VII draws conclusions.

Part III. Major issues in developing country access to the global value chain

A. Sourcing along the supply chain: the various roles of exporters

13. Trade in the fresh produce sectors is increasingly managed by global buyers that are linked to major retail chains.[3] Although these retailers only source about 25% of their fruits and vegetables from developing countries, primarily for off-season and tropical products, their imports are sizeable, thus providing a significant earnings opportunity for those developing countries who can comply with the standards (OECD, 2006). Supermarkets now account for the major share of fresh F&V sold in North America, Australia and most European countries.

14. Developing country producers can be linked to retailers either directly or through exporters dealing with retailers or global buyers/importers. Generally global buyers/importers link retailer demands to producers through exporters based in developing countries. These exporters, often in close contact with the importers, are responsible for ensuring that products meet private standards' requirements, quality specifications and the volume and delivery schedules set by foreign buyers. Where producers are large or even medium-sized but experienced, the task for exporters is simply that of a trader - managing supply logistics.

15. Exporters in developing countries are very often not simply traders, but are also closely involved in production, either through their own production or through that of out-growers who are generally small-scale producers. They can also exclusively manage production of medium and small-scale producers and not produce themselves. They thus often have the key role in integrating small and medium size producers into export markets. Where small producers dominate production, such as in much of Africa and parts of Latin America, the role of exporters is a combination of a farm manager, safety inspector and trader. How

[3] Procurement of fresh F&V has been consolidating with the rest of the food chain, centralised distribution centres have begun to serve chains over wide geographic areas. International trade in F&V is also handled by fewer agents as alliances between traders and grower-shippers (integrators) across continents begin to emerge in part to counter balance the market power of the retailers At the same time specialisation is also emerging where a specialised seller, sourcing from different producers and countries, will provide year-round availabilities of products following strict criteria from quality, to food safety and traceability.

is this done? While there are variations, the exporters provide inputs, supervise, or at times undertake pesticide applications, product testing and field level record-keeping as well as ensure that all PVS requirements are met. In this hands-on management model they are the drivers behind the certification process for small and medium size producers, just as they are the drivers for bringing these small producers into the non-traditional F&V sector.

B. The role of industry and public-private sector associations

16. Regulatory frameworks, government agencies and industry associations define the business environment in which the F&V sector in developing countries operates. Industry associations, particularly the large ones with lengthy experience, are invaluable aids to members through engaging in marketing and promotional activities, providing technical assistance and collecting, analysing and disseminating industry information. At the same time, they keep members abreast of key regulatory changes in export destination markets, initiate and/or manage R&D programmes of value to all members and lobby governments for special needs. Where the government and industry see the role of the public sector to 'accompany' private sector initiatives, such as in Chile, they have together been able to find solutions to problems faced by industry, without resorting to excessive regulatory oversight or government subsidies. This public-private collaboration has proved very effective in helping the Chilean agricultural sector to make the transition from a small bean, lentils and wool sector, to one of the world's leaders in the temperate fresh fruit export markets.

17. From the interviews undertaken, exporters in South Africa would like the government to adopt a policy similar to that of PROCHILE, and to assist industry indirectly but more actively. Peru has developed a number of industry associations and public-private partnerships which resemble those of its successful neighbour, Chile, and these have certainly helped create its fresh asparagus export sector, which is now the world's largest. They have made use of the Chilean model in development of their producer and exporter associations as well as using Chilean experts in the early stages. Industry associations in these two countries have also been heavily involved in technology transfers from the United States often channelled through government agencies. Ghana also has a number of industry associations which are helping to develop the export sector. However, these are still in their early stage of development. The general export promotion agency is now engaged in more industry collaborative efforts, but these are still far from what is being done in South Africa, Chile and Peru.

18. The increasing levels of technical know-how and management required throughout the production process, as well as in product delivery needed by exporters/producers, raise the issue of effective market access (Wilson *et al.*, 2003; Dolan and Humphrey, 2001; Farina, 2003; Reardon and Farina, 2002; Raynolds, 1994). Major buyers deal only with the best and well-established exporter/suppliers, capable of providing consistently adequate supplies and quality (Thrup, 1995; Dolan and Humphrey, 2004; Reardon *et al.*, 1999; Reardon and Farina, 2002; Reardon and Timmer, 2004). Even where small producers are able to produce according to PVS, it is not clear they can retain their access to exporters given their size. It may be simply too costly, in terms of transactions/management costs, for them to deal with many small producers. The Kenya green bean experience is often cited as an example of the results of increasing standards on small farmer access to markets (see box 1).

C. Meeting the private standards challenge

19. Private standards are here to stay and large retailers with market power will enforce them, along with other commercial requirements, such as volumes and flexible delivery schedules. This new environment means that producers in developing countries will need to be able to adapt to the resulting evolution in demands. The largest and most able producers operating in countries with good infrastructure, and services as well as experienced industry associations fare quite well in export markets. They are

equally as competent and successful as any OECD producer. There may be periodic adjustment costs, but these demands are often viewed as just another element in doing business.

BOX 1. Green Beans and Supermarkets

Green bean production for UK markets was originally undertaken in the 1970s-80s by many small farmers who delivered their production to local markets where exporters purchased them and sold them in turn to importers for wholesale markets. As food safety standards rose and supermarkets gained a larger share of fresh produce sales, making quality and scheduling of quantities an imperative, wholesale markets were no longer a reliable source for green beans of the type, quantity and quality necessary for retail sales. Direct purchases through integrators/exporters increased in the 1990s and the UK FSA 1990 spurred large retailers to develop written procedures laying out their precise requirements. These were then followed up with audits of products and farms, exchange of information and on-site inspections. The retailers also began to use annual contracts which gave suppliers and farmers stability and incentives for investments to upgrade. This is a radical change in the way of doing business, from open markets to contractual supplies. Consequently, those small-holders unable to meet new retailer requirements were no longer able to supply the UK and other similar demanding markets, and were marginalised. Only those that could remain tightly integrated with large exporters, through contracts, remain linked to the lead retailer trade (Jensen, 2005, Dolan and Humphrey, 2001).

20. A very large segment of producers in many developing countries that is the small and even medium sized producers, are firms with limited resources-technical, financial and managerial. For these producers, the new commercial economic environment often becomes an impediment to accessing the global value chains. They frequently face simultaneous sets of constraints in complying with private standards. Some of these are internal to the producer or farm, and some of them are external and cannot be relaxed through the farmer's own actions. These external constraints are those that relate to poor infrastructure and lack of public services including such factors as lack of reliable energy supplies, deficient transport and telecommunications systems, limited cold storage and testing facilities, and insufficient technical assistance and extension. The internal constraint to the producer is that related to his own physical and human capital, which can be severe in case of small-scale producers.

21. According to the exporters-producers interviewed in the case studies, meeting PVS's is essential, it is an entry ticket to accessing GVCs. Similar conclusions are found in the literature (Jensen, 2005; Gibbon and Ponte, 2005; Henson and Reardon, 2005). What is needed to relax the constraint for small and medium-sized producers? The investment required to upgrade and thus relax the constraint, will depend on the producers' initial set-up, or how 'far away' he is from the required one set by the standard scheme. For small producers who cannot benefit from economies of scale, these fixed, up-front costs may be too large and not be an economically viable option given their lack of economies of scale. For large producers, upgrading is generally not a constraint, since they have access to credit. In addition there are the costs of annual audits and certifications, along with constant upgrading, to keep pace with the new demands.

22. Other requirements of PVS schemes, such as record keeping, traceability and tracking systems as well as many good agricultural practice GAPs are part of the difficulties faced by smallholders in being certified and thus accessing markets for high value products. These latter difficulties reflect the fundamental lack of human capital, engrained cultural habits and lack of a 'market mindset', as well as a heritage of persistent poverty.

23. There are also a number of successful experiences of small scale growers of high value agricultural products which have been integrated into value chains. For instance, in Zambia, Agroflora and York Farms use small scale growers for vegetable exports to European retailers. They ensure that the production meets not only private standards requirements and quality levels but also delivery schedules needed by importers and retailers.

24. In Kenya, many small scale growers are still supplying high end retailers with high value vegetables. James Finlay Limited (formerly Flamingo Limited-Homegrown) ships 500 tonnes of vegetables out of Kenya each week. About 140 tonnes are from the 600 small scale growers who grow for them (http://www.f-h.biz/outgrowers.asp?bandwidth=big). Each group of 13 to 15 outgrowers is assisted by a technician who provides technical support and training needed to grow vegetables to the high standards demanded by the supermarket. All producers are certified EurepGap and thus eligible to supply major retailers demanding this private standard. Each crop is grown from seed provided by Homegrown, and is regularly checked and logged by the technical assistant and the farmer. They grow a wide range of vegetables from mange tout, baby corn and carrots to courgettes. This is a highly managed set-up and the question as to its economic viability in the medium term has already arisen among experts.

25. Small scale growers contribute to exports of fresh produce in many developing countries, however most are not producing under the regime of private standards that is increasingly being demanded by lead retailers in developed OECD countries. It is these markets which pay premiums for premium products and thus it is these that many exporters from developing countries wish to enter.

26. In all likelihood, PVS will continue to increase in scope and stringency overtime (OECD, 2006). This fact coupled with trends in global sourcing, raises the question of whether small-holders can be integrated into the commercial export system and remain in the system in the long term. Given the sums necessary to be certified under the PVS schemes and the management efforts required, some may ask about development strategies postulated on smallholder production of high-value F&V for export. This evolution may also raise the issue of the possible divergence in income and capacities over time between those who can be part of the global value chains and those who cannot.

Part IV: Method of Analysis

A. Case Study Approach

27. Few, if any, empirical analyses of private standards and market access for developing countries on a comparable basis exist, thus this study contributes to providing information on the topic. The case studies focus on the effects of PVS on the fresh fruit and vegetable (F&V) exports of developing countries. The fruit and vegetable sector was chosen because exports have experienced significant growth in recent years and the trend is likely to continue. Furthermore, the F&Vs are put forth as products for which many developing countries have a comparative advantage due to natural agro-climatic conditions and abundant labour supplies, and hold income generating potential for small-holders.

28. Specific product selection was done in collaboration with country experts to identify those products where private standards are applied. Selecting only exporters/producers using private standards biases against finding private standards to be exclusionary or a significant constraint to market access. It does however permit to identify many of the challenges that have had to be overcome to access these markets. Furthermore, the questionnaires did contain questions specific to small-holders potential to enter high value export markets. In addition the issue was specifically addressed by country experts.

29. Countries with different income levels and geographic locations were selected, in order to understand how private standards might differentially affect potential market access. Economic development was measured by GDI per capita with data taken from the World Bank. The countries selected for study are Ghana and Peru (low income), South Africa and Chile (middle income). See Annex I for a brief summary of general economic characteristics of the selected countries.

Table 1. Product coverage in the country case studies (figures in brackets are GDI per capita)

Chile (USD 6500)	South Africa (USD 5200)	Peru (USD 2200)	Ghana (USD 600)
Table grapes Apples Cherries	Table grapes Apples and Pears Citrus Avocados	Asparagus Mangoes	Pineapple Mangoes Papaya

30. The interviewees were chosen so as to reflect some of the diversity in production and export sectors; both large and small operators were interviewed in each country. To understand the institutional framework in which firms operate interviews were also undertaken with public authorities and producer and export associations dealing with specific issues, such as food safety, GAP, quality control and general infrastructure.

31. Exporters and producers were considered the two main categories of agents affected by PVS schemes. The case studies discuss the results of the interviews with producers, exporters, industry associations and government agencies. Country expertise was brought in through consultants who were responsible for selecting interviewees - exporters and producers - within the criteria of diversity of agents in each category. Producers were chosen from those supplying to exporters that have been interviewed. Interviews were done in person, using a common set of questions modified for country specific conditions.

Part V: What was learnt?

A. Synthesis of main issues

32. This section discusses the main findings from the case studies, underlying common constraints and benefits of compliance with private standards as a means to access GVCs. A synthesis of each of the four case studies is provided in Annex II.

33. While all case studies followed a common framework in terms of exporter and producer interview questionnaires, there were substantial differences in the synthesis of the materials and their presentation. This makes simple tabular comparisons subject to misinterpretation and, consequently, this is not undertaken in a systematic manner. A common set of issues, challenges and benefits clearly emerge from the case studies. Nonetheless, the specificity of each product-country pair and market structure within the general economic and institutional setting can be determinant to accessing the GVCs.

34. For instance, South Africa with almost one hundred years of experience in exporting F&V to Europe and well developed trade supporting infrastructure provides an edge to their access to global value chains. Likewise Chile, which since the 1980s has become a major world fruit exporter, has been aided by previous profound economic, infrastructure and institutional restructuring. This is in contrast to Peru, which has little more than a decade of experience for a very limited set of high value products, and operates under infrastructure and institutional constraints. Ghana faces not only severe constraints with respect to infrastructure and general overall economic development but also has limited in experience in the high value product market.

35. The case studies also indicate that the differential stock of social and physical capital that has accumulated in the sectors can be crucial to a sector's capacity to access GVC. Those who are already operating in the value chain may need only to make marginal adjustments as new demands are required of them in terms of standards and commercial activities. Those attempting to enter the GVC however have to

make major efforts to do so and as standards evolve they may be always trying to just to catch up.[4] Simply said, history does matter. While there are common challenges to being a player in GVC their differences lie in the extent to which these are binding constraints and how much effort, at the individual, sectoral or national level is needed to relax them.

B. Which standards?

36. Most private standards required at the farm level take the form of 'Good Agricultural Practice' (GAP) scheme, with the objectives of ensuring food and worker safety and minimizing environmental damage. The actual requirements of the GAP standard applied will also incorporate not only domestic regulatory requirements but also those of the importing country, particularly where their application is intended to facilitate trade. Box 1 describes the general Gap standard.

Box 2. Good Agricultural Practices (GAP)

Private standard schemes for good agricultural practices (GAP) use a 'quality management' approach, with checks at key activity points to monitor production processes. The focus is on critical control points similar to HACCP systems to ensure food safety, but extended to include worker safety and to minimize environmental damage. Many countries, both OECD and non-OECD, have been adopting voluntary GAPs for agricultural production.

While adhering to a general risk management approach in agricultural production, these schemes in terms of protocols can be quite different. They may not only differ in objectives emphasized but also in terms of traceability, range of permitted agricultural practices, farm structures, hygiene and safety procedures, etc. They all require recording of pre and post harvest agronomic practices, as well testing procedure results. These GAPs have increased in importance globally as demands for traceability of foods has increased in the 'farm to fork 'optic.

37. EurepGap was the most frequently cited standard with which exporters-producers are compliant. This is largely due to the large share of fruit and vegetable sales of these exporters to Europe, and the fact that EurepGap represents the standard developed by the Euro-retailers fresh produce working group in order to harmonize minimum food safety standards. The results of the interviews support the growing global reach of this standard and, moreover, the importance of buyer driven global value chains in shaping the food system (see Box 2). EurepGap appears to be the most widely applied standard in the chains supplying European retailers, though it remains unclear what percentage of total fruit and vegetable imports are compliant. From discussions with importers it is clear that EurepGap is a growing in its reach at least for Europe

Table 2. Private Standards schemes applied by exporter-producers

Farm level private standards	Chile	South Africa	Peru Mango	Peru Asparagus	Ghana
EurepGap	100%	100%-exporters	100%	100%- to EU	EurepGap
SQF1000	Some	8%		-	-
Pro-Safe	To US				
GAP-US				100%-to US	-
ChileGap	75%				
Retailer schemes: Natures choice				Some	

[4] This should not be read to imply that newcomers cannot enter markets and be successful, only that it may be more difficult to do so.

38. Where exports have several destinations and/or buyers, they must frequently comply with several standards simultaneously. This often means that multiple certificates attest to the same attributes and this is costly in time and money. Where some processing is undertaken by either exporter or producer, such as packaging, washing and cutting, firms must also comply with private manufacturing standards. These activities are most often defined through standards schemes approved by retailers, such as the British Retail Consortium Global Standard (BRC) or the International Food Safety (IFS) developed by German and French retailers. Other frequently named standards were the Dutch-HACCP, SafeQuality Food (SQF2000), Pro-safe-Davis Technologies and BASC, an anti-terrorism standard for exports to the US.

Box 3. EurepGap

Developed by the Euro-Retailer Produce working group (Eurep), EurepGap is a widely applied standard for Good Agricultural Practices whose objective was to reassure consumers that food was being produced in a safe and sustainable manner within the context of a globalised food economy. Given the dominance of these retailers on the global markets for fresh fruit and vegetables, it is natural that their scheme dominates the market compared to others.

EurepGap is a quality and safety management system, or metasystem, providing tools for verifying best practices in a systematic and consistent way. This is done through the use of product protocols and compliance criteria applied to food safety, environmental sustainability and worker health and safety. These protocols, and the fact that national GAP schemes can be benchmarked by EurepGap extending participation under the scheme, are seen as important in fulfilling a basic aim of facilitating trade in safe and sustainable farm produce. For a listing of the specific criteria according to product scheme, see critical control points documents at www.eurep.org.

EurepGap certified producers have grown substantially in the recent years. In summer 2002 there were 3 889 EurepGap certified growers in 20 countries in the world. EurepGap is now used in over 50 countries and has certified upwards of 36 000 farms, a nearly ten-fold increase. The number of farms in developing countries which are seeking certification is also rising as exports to EU increase, implying an increasing effective demand of F&V with EurepGap certification. The number of retailers that are actually members of EurepGap for the F&V protocols is still limited but its popularity seems much greater. This is because anyone can effectively ask for a EurepGap certificate as condition for a sale. In this case the EurepGap certification signals that suppliers are capable of supplying high quality products and non-members may select suppliers from this set. In addition it is possible that exporters and importers, not willing to maintain two separate compartmentalised systems, will opt for supplying certified products alone, even if only some of their clients require it, Humphrey(2005,p.19). Thus some buyers may purchase certified products without actually asking for them.

B. Complying with the standard: challenges and benefits

39. Generally, the key requirements for compliance with PVS are: good agricultural practices (GAP) and food safety as defined by protocols of the specific standard, traceability and worker safety procedures. However, since all interviewees were EurepGap-certified, their responses clearly relate to the difficulties or benefits of compliance with the criteria of this standard.

1. Costs of compliance, audits and certifications

40. To comply with GAP requirements `-- EurepGap or others, investment to upgrade equipment and buildings for chemical storage, hygiene and temperature controlled facilities, among others, are often needed. For commercial farms these are simply requirements for doing business. They also often benefit from economies of scale in meeting certain of the requirements For small-scale growers where there are generally no economies of scale to be had the entry costs in terms of farm upgrading may be prohibitive for them to remain or to enter these value chains.

41. Survey results indicate that once farms are compliant, the recurrent audit and certification costs of private standards were not excessive in relation to sales. Caution is required in generalizing from such limited size sample. For Chile they amounted to 1% or less of sales and in South Africa about 4%. In Peru these costs varied between 4%-15% of the farm gate price for mangoes, thus volumes will be a determinant

of profitability as a portion of these costs is fixed regardless of size. Even for Ghana, costs of audit and certification were relatively limited, USD 50 for an 8 ha farm with sales of USD 20 000 and for a 400 ha farm with sales of USD 1.2 million, costs amounted to USD 12 500. And this result takes into account the costs of certifiers who must be flown in from other countries such as South Africa. EurepGap has two options for certification, individual and group though some variants are possible if farms are in one operating firm. The latter two options could reduce certification costs if buyers are willing to accept these as equivalent which is not always the case.

42. There are benefits to being certified which go beyond access to markets. Record keeping and the audit procedure can improve efficiency in farming practices and use of inputs. These were reported in Chile, Peru, and South Africa.

Table 3. Examples of compliance costs for meeting PVS from case studies

	Chile	South Africa	Peru	Ghana
Recurrent costs of annual audit and certifications as a %of price or sales	<1% of sales	~4% of sales	4 to 15% of farm gate price	<%1
Upgrading investments	USD 22 000 to 25000 depending on size	N.A.	N.A.	USD 400-500 for an 8 hectare pineapple farm to USD 100 000 for a 720 ha farm.

43. The most binding constraints to meeting the PVS are the upfront costs necessary to upgrade the farm itself to be able to comply with GAP. This can include buildings for storage of chemicals, changing-rooms, toilets and dining-rooms or upgrading of packing and washing facilities. These costs will vary according to the standard adopted but also the initial conditions of the farm. For instance, in Ghana, EurepGap compliance costs for a 15-20 acre pineapple farm were about USD 400-500 but for large farms they can be more substantial. For example, a 1 000 acre pineapple exporter producer has spent USD 80 000 to be EurepGAP ready. In Chile, a grape producer estimated compliance costs so far had been USD 220 000 but that further investments were still required, *e.g.* in machinery and a loading platform.

44. In a global markets context, exporters are shipping to multiple continents and often to more than one buyer in the same country under different private standards schemes. This can mean duplicate audits for the same product where the standards are essentially certifying conformity to the same set of attributes. This increases costs, both in time and money, for producers and exporters and could be constraining if profitability or sales are not increased as a result. To meet such double or triple certification problems, Chile's exporter association, ASOEX, with help from government agencies, developed ChileGap, building upon Chile' s own Gap standard. This standard incorporated the requirements of the US market for GAP and the EurepGap standard requirements and has been benchmarked by EurepGap. Thus, exporters/producers can have only one certificate, ChileGap, and export to both markets--being certified ChileGap automatically certifies for EurepGap, but not the inverse. This initiative demonstrates the importance of private and public sector cooperation to increase market competitiveness.

2.-Record-keeping and traceability

45. Record-keeping at the field level has become complex because more and more information is being required by importers to satisfy their clients,--lead retailers in the case of EurepGap. Medium and large firms are required to have managers who are responsible for ensuring the detailed record-keeping

demanded by importers/buyers and most often use ICT at the field level for this task. Farm workers generally have low levels of literacy and for them therefore, this would be an impossible task. Small producers also find themselves in the same predicament, and thus these tasks are generally taken on by the exporter.

46. Record keeping on chemical use at the field level is now being integrated into the commercial traceability demands of retailers, this procedure yields a chemical application history of a given field/orchard and is considered important when thinking in 'due diligence' legal terms. This appears to have become a commercial requirement for the UK. Many supermarkets in other European countries are requesting similar procedures, although such detail is not required by EU law.

47. Demands for detailed recording of agronomic practices at field/orchard/vineyard level, can be a formidable task, and to be efficient and accurate they are often heavily dependent on the use of ICT structures and competences. New technologies are being developed to permit tracing and tracking which are necessary should a food safety problem arise. But some experts and interviewees asked if there is a limit to what, should and can be traced. With new ICT technologies almost everything can be tracked and traced, but is this necessary?

48. The costs of record-keeping and use of tracking systems from the field to the exporter can be significant. Salaries of managers undertaking these tasks as well as the specialised ICT equipment that must be used, for instance in bar coding, mean both fixed and recurrent costs to the producer. For small exporters/producers these costs may constrain their access GVCs. For instance in Peru, managerial costs for record keeping and other management tasks for mangoes were reported at about USD 800-1000 per month. Not all of this is attributable to record-keeping as some is allocated to technical assistance, but does represent a large share of it.

49. Many large producers and exporters are already ICT equipped, or are in the process of becoming so, particularly in Chile, South Africa, and Peru. But where small-holders dominate production, it is unclear how they can remain in the value chain even when exporters take over the tasks of chemical use and record keeping through specialised personnel. These costs are debited nonetheless to the producer earnings in the tallying of the final accounts. Transactions costs of exporters are often such that they prefer simply not to have to deal with small producers. As long as products are in short supply the small producers will remain in the chain. But how long will this continue? New demands as well as rising standards in product markets make more and more difficult access to GVCs for the smaller firms and all the more for small scale growers for whom these are suggested to be a benefit.

C. Which private standards are the most difficult to meet?

50. The following section provides a brief synthesis of the producer and exporter interviews for the case studies of Chile, South Africa, Peru and Ghana. It presents a brief overview of what first exporters and then producers see as the most difficult requirements of PVS and briefly discusses what is seen as the main benefits. The types of firms interviewed differ substantially. Exporters are also very frequently producers themselves, or have responsibility for the production of their out-growers, and some producers have their own exporting firms and do no out-sourcing for supplies.

51. The following were cited by *exporters* in the case studies and interview materiel as the most difficult requirements.

- Record-keeping by producers/out-growers,
- Chemical use management,

- Management of different standards systems, that is compliance of different schemes by the same producer,
- Certification, in particular for attesting to GAPs-good agricultural practices,
- Transforming the mindset of producers to make them responsive to market demands, particularly small scale operators.
- Rising stringency of food safety regulations-banned chemicals, MRLs, testing requirements ,
- Maintaining high food quality standards from the farm to final destination
- Managing flexible in quantities and deliveries and increased demands for specific supply logistics

52. For *producers* the main constraints voiced in the interviews were more related to changes required in agronomic practices which are undertaken on a regular basis.

- Food quality standards, particularly in the harvest and post harvest part of the operations, such as picking, transport and cold chain.
- Food Safety requirements: worker hygiene, minimum residue levels (MRL) and micro-biological control, pesticide selection and applications,
- Access to laboratory testing facilities: equipment and procedures in importing countries do not necessarily correspond to those in exporting countries,
- Record-keeping and traceability: recording in the field requires skilled labour and new traceability requirements make ICT methods often necessary. This added cost and competence is difficult to meet,
- Worker safety and hygiene: difficulty in changing behaviours,
- Investments to upgrade buildings and equipment: facilities for chemicals storage, hygiene facilities, changing facilities, secure equipment for chemical use, *etc*.,
- Information on foreign market regulations and private standards compliance.

53. From the interviews, the following emerged concerning what producers/exporters saw as the main benefits of private standard certification:

- Access to the global value chain, which is essential for commercial exports to developed countries, and the possibility to develop longer-term trading relationships,
- Improved efficiency in operations: reduced costs through better use of chemicals, organization of tasks, increased information on proper use and storage of pesticides to improve worker safety,
- Increased information on proper use and storage of chemicals with fewer negative environmental effects,
- Improved worker safety through proper attire for chemical use as well as through changes in storage procedures and separation of different tasks.

D. Infrastructure and services

54. The case studies all concurred on the importance of good infrastructure and services for the development of a competitive fresh produce export sector. A summary of the assessment of infrastructure by interviewees is given in Table 4.

55. Fulfilling standards is an essential and a necessary requirement but not sufficient to access the global value chain. Telecommunications, energy supplies, roads, ports, rail and air systems with adequate cold storage facilities must be reliable in order to deliver the product to the buyer, intermediary or final. Where countries are inherently deficient in these key services and structures, supply logistics systems necessary to operate in the GVCs do not function and market access is indeed difficult. This is particularly relevant for the high value fresh fruits and vegetables export sector which demands substantial coordination of production, transport, storage and delivery.

56. Some private and public collaboration to find solutions to bottlenecks in the system can be informative and provide some alternative ways of dealing with these problems. Peru's asparagus export sector, finding itself constrained by lack of cold storage at airports, built Aereo Frio, now the largest cold storage facility in Latin America. This facility permitted maintaining high quality in asparagus before shipment in temperature and air controlled containers.

57. Overall the producers and exporters of South Africa and Chile were satisfied with the level and quality of infrastructure and services, with those in Chile finding them to be good, but requiring further improvements. Peru's exporters expressed substantial frustration with high costs of certain services such as telecommunications, air transport and port services, as well as unreliable roads. This is particularly true for the mango sector, which, because of high transport costs, may not be competitive in the longer term with competing countries, such as Brazil and Ecuador. In Ghana, exporters and producers were very dissatisfied with the present infrastructure and supply of government services. The infrastructure is unable to provide minimum necessary services to the operation of a commercial fruit and vegetable export sector. This includes energy supplies, telecommunications, road system, ports, testing and R&D facilities, extension services and marketing and information services. What is the cost effectiveness of upgrading individual farms to produce high quality output if it cannot get to the port or airport due to roads or cold storage systems that fail due to blackouts'? The main constraints cited in the case studies revealed that lack of well-functioning infra-structure can often jeopardize efforts to meet market demands. This raises the issue of whether there is a required minimum infrastructure and service set if the sector is to even begin to attempt to access the GVCs. It also brings to the fore the need for coordinating aid as well as public and private sector activities.

58. There appears to be two types of constraints, those affecting the sector and those affecting the entire economy-macro-level constraints.

Sector constraints in terms of limited availabilities of the following:

- Export association marketing services to explore new market opportunities,
- Research and development of new varieties that better respond to new demands and include advances in agronomic technologies,
- Centralised technical assistance to help all farms to develop more efficient and sustainable practices,
- Cold storage facilities at ports and airports (except air Peru/South Africa),
- Sufficient numbers of accredited laboratory testing facilities.

Macro-level constraints due to lack of :

- Reliable energy supplies,
- Reliable and low cost telecommunications,
- Reliable and efficient transportation systems, airports, ports, roads and rail systems,
- Macro-economic stability.

Table 4. Interviewee assessments of infrastructures in case study countries

	Chile	South Africa	Peru	Ghana
Reliable energy supplies	Good	Satisfactory-periodic 'brown or black' outs	Satisfactory	Poor
Good Telecommunications, internet	Good, competitive prices	Good but expensive and rural area often deficient	Not always reliable and need more internet capabilities in rural areas	Poor quality and inadequate in quantity, but improving
Road transport	Good	Good but maintenance could be improved	Main roads excellent but local roads are poor	Poor
Port Facilities	Good	Congested at peak periods	Poor and priced too high compared to competitor exporting countries Brazil and Ecuador	Poor -insufficient and not competitively priced
Air transport facilities			Expensive, limited and often congested at holiday periods when produce needs compete with other products	Satisfactory low cost, but lack of cold storage facilities and road access creates shipping bottle necks
Cold Storage	Good largest port cold storage facility in Latin America	Good but must be increased to deal with supplies	Poor at the ports but excellent at air terminals.	Severely lacking in quantity and quality
Testing facilities/laboratories	Good	Need more high quality facilities particularly for testing MRL's		Satisfactory for phytosanitary control by government, non-existent for MRLs must use either South Africa or EU
Accredited certifiers	Yes	Yes	Yes	No
R&D of new products and varieties	University public monies and industry association funded	University public monies and industry association funded	University public monies and industry association funded, but considered inadequate	Donor and NGO funded
Public based export regulatory information	Public private partnerships(PPP)	PPP	PPP	NO
National Regulatory Infrastructure	Yes: food safety, hygiene, labour and environment	Yes : Food safety and hygiene, labour, environment Export legislation	For asparagus and mango Food safety and hygiene, labour and export legislation	Minimal

Part VI. Private Standards and small-holder agriculture: exclusionary or not?

59. An additional objective of examining the impacts of private standards and trade was to understand the possible effects on small-holders or small scale growers(ssgs) in developing countries. With the emergence of increasingly demanding private standard schemes, questions have arisen as to whether these will be able to benefit from trade liberalisation. Development strategies to increase sources of income for small-holders, through trade in high-value products, have been constructed on the premise that given their abundant labour supply they should have a comparative advantage in those crops which make use of this resource. Fresh fruits and vegetables are more intensive in labour use than homogenous commodities, and are of higher-value. Thus, fruit and vegetable export crops have been widely promoted through trade related capacity-building programmes.[5]

60. But global markets for high-value products are very often ones that are retailer dominated, for which access is keenly competitive and for which quality and safety requirements are stringent. In addition, they require deliveries of specific volumes at scheduled times. For exporters dealing with small holders, these two requirements are often difficult to meet on a regular and reliable basis.

61. Where orders require certified produce, integrating small-holders in the GVC chains implies getting them certified. However, the constraints for doing so can be severe and are often not easy to relax. Such constraints include:

- Low levels of education/literacy prohibit many from easily understanding and adopting the requirements of national legislation, GAPs and/or other private standards,
- Low agronomic knowledge and technical skills require technical advisors and extension workers to improve quality, safety and productivity,
- Lack of record keeping skills, tied to literacy,
- Lack of management skills,
- Poor personal hygiene behaviours ,
- Difficulty in moving from a production to a market oriented mindset,
- Costs of farm upgrading and certification can be high and often prohibitive,
- Required monitoring of production behaviours,
- Limited associative participation.

62. The major donor and assistance programmes have been sponsoring different types of aid packages, such as low cost loans to farmers, agronomic training and literacy projects, investments in local infrastructures and promoting public-private partnerships in agro-food industries. But what type of assistance aid and co-operative efforts have the potential to modify fundamentally the earning capacities of these small-scale growers over the long-run? How should these costs be evaluated? Clearly, certain agro-business projects, such as private donor funded "Blue Skies", have been a success.[6] It is important to understand the mechanisms behind such success stories and whether these can be replicated.

63. This study contributes to the discussion by considering what country experts and those can and do meet the stringent demands, are saying about challenges which small holders face to comply with the

[5] Development aid agencies as DFID, GTZ and others have operated such strategies in Kenya, Ghana and Uganda.

[6] Blue skies is a fresh pineapple processing firm in Ghana, established on the initiative of a private UK donor to promote access of pineapple growers to high value markets.

evolving private standards, which nowadays are the entry requirement for GVCs.[7] All four case studies highlighted the difficulties of small-holders in meeting private standards in terms of quality, food safety, GAPs and traceability. The experiences in individual case study countries are briefly summarised below to help understand the difficulties for small holders of entering high value export markets. It is not impossible for them to do so, but the costs may be high and in the medium term the opportunity costs of doing so may need to be evaluated before plunging in this direction. Gradual adaptation to these standards and selection of appropriate markets with less stringent standards may be an alternative to the lead retailer market of the developed OECD countries.

Chile

64. The expert view in Chile is that it is exceptional to find small producers; that is a farm with 7 or less hectares of land, involved in the fruit export market. This sector is capital and knowledge intensive, requiring sophisticated management skills as well as traditional economies of scale for investments, inputs and certification costs. However, there are sectors such as nuts, avocados and grapes and berries in which small holders are competitive. Some of those interviewed suggested that because the export business relies heavily on management capacities, it is possible for small farmers with a high value product to participate if they are skilled managers. But small-holders, overall, have low management skills, low educational and literacy levels as well as scanty technical agronomic knowledge, all of which are essential to be part of the modern export system. They also have low rates of participation in producer or export associations which were found, in Chile at least, to be an aid and stimulus to successful participation in global markets

65. Over the past 5 years the Institute of Agricultural Development (INDAP) has attempted to introduce simple cost, sales and production record keeping to peasant farmers, but the effort was not generally successful. Failure could be attributed in part to lack of basic literacy and numeric skills but also lack of a 'business-like' mentality, as well as experience in being part of the market.

66. Since 2004 INDAP has been providing training for small farmers producing berries and honey, both of which are labour intensive and in which small farmers should have a comparative advantage. The approach taken is to fund an initial diagnostic of the farm, design an intervention programme for implementing GAP, provide funding for audits and certification and loans for investments required for GAP compliance. It was expanded in 2005 to include other products such as flowers and avocados. Experts from INDAP in charge of the program are not too optimistic about the outcome. They expect that future market access to high-value chains will remain limited, because the small fruit farmers essentially have only limited management skills and have difficulties in record keeping. This in turn creates problems in complying with traceability, as well as with adapting to the continued evolution in requirements.

67. The small-holder issue remains a difficult problem, even in a country such as Chile, with its experience in high value fresh fruit exports, where infrastructures are good and where industry and public sectors successfully work together. The question then becomes whether public efforts, instead of aiming

[7] Reardon underlines the growing importance of the rise in supermarkets in domestic markets which absorb 95% or more of small-holder output. As these supermarkets also begin to shift in procurement organization, imposing standards on products and processes previously marketed as bulk items, these farmers could also be marginalised. Outcomes depend on how fast and to what extent 'supermarketization' advances in developing country markets. The process is already advanced in Latin America but still remains limited in parts of South East Asia and Africa.

for GVC access for small holders, should be directed to less demanding markets in terms of quality and certifications or to help them to adapt out of agriculture.

Peru

68. In Peru, the mango sector is a traditional sector, dominated by small-scale producers who operate on the local market. This market absorbs 60% of production and the remaining 40% is exported. The biggest constraint for export growth has been the sourcing of sufficient quantities of quality mangos due to competition with local market demands. Exporters are mainly Peruvian firms, though there are some joint-ventures with foreign import firms or specialised buyers which invest in order to secure supplies for their domestic market clients. Those who have entered the market for export reasons have benefited from strong demand and have had to find solutions to sourcing supplies. Exporters-producers have had to integrate small producers to achieve necessary volumes on a regular basis as well as for periods of high demand.

69. Importers are increasingly requiring certification to EurepGap for accessing GVCs and the EU market, although many EU importers are still accepting a GAP (Peru based) certificate. To face constraints that sourcing from small-holders presents, such as low levels of literacy, poor hygiene habits, low record keeping ability and lack of knowledge in the use agro-chemicals and other agronomic procedures, exporters have taken on the task of integrating small-holders into their supply base. They do this by assisting them in farm upgrading to meet certification standards, as well as in audit and certification costs. In view of the small volumes marketed, certification for small-holders themselves would not be financially feasible given the necessary investment as well as recurrent costs. In addition, without substantial monitoring, technical assistance and a complete reversal in hygiene and market behaviours, consistent compliance with standards would be very difficult.

70. One solution to certifying producers has been the use of joint certification. Farm production is certified EurepGap, the commonly demanded certificate, and is issued in the name of both the farmer and exporter. To avoid being tied to one exporter uniquely, which could be a disadvantage for the farmer in terms of having only one market option, small-holders can have several joint certificates which permit some price negotiation. The same argument holds for exporters. For the moment certification is not a problem for small holders given the exporters' willingness to partner with them in the process and to provide assistance.

71. To some extent the certification problem has been covered up by some exporters, who in order to achieve needed export volumes, mingle certified with uncertified products. Thus, production from medium-sized producers, who are legitimately EurepGap certified, is exported with non-certified production from small-holders. Exporters deem EurepGap certification is imperative for access to European markets. However, some leniency is permitted as long as firms can demonstrate that produce is GAP (Peru based) certified and that efforts and progress are being made towards EurepGap compliance. However, it is unclear how much longer the grace period will last. This could also depend on progress made towards EurepGap certification by Peru's competitors. In this optic, exporters try to give evidence of progress in sourcing larger and larger portions of their product from certified sources.

72. With respect to the development of small-holder production and exports, new forms of cooperatives have been suggested, or 'New Generation Cooperatives'. These are envisioned as entities which can finance their own managers and technical assistance and become integrated firms from production through packing to exports. Such structure avoids intermediaries and loss of revenues. Larger cooperatives would benefit from economies of scale, have better quality assurances and also ensure worker health and safety, which could be attractive for exporters. Moreover, eventually such cooperatives, if large enough, could also consider financing their own packing facilities and export operations and attempt to develop a 'Fair Trade' branded operation. But price competition from Brazil and Ecuador with their lower

costs of transport and better shipping and transport infrastructure may limit market access to the more lucrative markets of the US, EU and Japan, where such new entrants must compete with established exporters.

Ghana

73. Except for a limited number of exporters and producers, Ghana's agricultural production is dominated by small-holders. This frequently makes complying with rising private standards very difficult. The external constraints, such as lack of good roads, cold storage facilities, shipping facilities, reliable energy supplies and telecommunication services, lack of testing facilities, notably for MRLs, represent formidable challenges for the sector as whole. When added to the specific small-holder constraints of low literacy levels, access to land and credit and technical capacity, this implies that enormous hurdles must be jumped to access high value export markets. In fact, the sentiment is that little or nothing is to be gained from upgrading agronomic practices to comply with standards, unless the infrastructures and services to the sector were likewise upgraded to enable exporters to meet increasingly competitive commercial requirements.

74. Both exporters and producers recognize that many of these constraints are more fundamental than specific food safety, quality or environmental requirements. Those interviewed noted that the trend in the export sector for fruits and vegetables is becoming dominated by a small number of sophisticated exporter-producers. This is a trend that is considered likely to continue, with existing firms and new entrants accounting for the greater proportion of exports. To what extent small-holder upgrading is possible, is uncertain. Yet without upgrading they are relegated to the low value export sector. The Ghana pineapple sector distinguishes out-growers and small-holders. While both have less than 20 acres, out–growers are small-holders that have somewhat formalized contracts. Out-growers are supplied by the exporter with inputs such as seeds and chemicals and they receive cash advances. Upon receipt of the fruit, the company pays the out-growers for the production, less advanced sums. Small-holders are independent; they move in and out of the supply chain with most of their production sold on local markets or to processors. They are most frequently excluded from export markets because of low quality but even when offered access, many reported finding prices too low and payment too slow. This situation is somewhat regrettable since pineapple is suited to small-scale farming as investment is limited, requires primarily labour and the pineapple farms areas are near urban centres (Danielou and Ravry, 2005).

75. The experience of "Blue Skies" provides evidence that it is possible to improve the earning capacity of small-holders through integration in the GVC, but this example of a UK private donor financed export firm has not been frequently replicated. Farmapine, a Ghanaian project funded by the World Bank in 1999 is using the Farmer Owner Model (FOM). In this project, small-scale farmers own the company and those that are full-time farmers were financed by the International Development Agency of the World Bank. There are currently 300 farmers working with Farmapine which was the first producer managed organisation to be EurepGap certified in Ghana. Gradually, this project has been able to certify a number of small-scale farmers but not all.

76. Reliance of government and industry on donor funds and assistance, including through NGOs, has to some extent created a dependence syndrome, constraining self reliance in numerous areas of market orientation and adaptation. The earlier mentioned projects of Blue Skies and FarmaPine were also developed with assistance from foreign firms and donor monies and expertise. While such programmes do offer hope for inclusion of small-holders in the value chain, when assistance ceases, it is unclear what the outcomes will be unless the basic infrastructures are upgraded, the overall level of literacy rises, agronomic competences are improved and hygiene culture of farmers themselves profoundly changed.

South Africa

77. The South Africa experience with respect to inclusion of small farmers in the GVC is influenced by the dual economy structure of the agricultural sector. To a large extent, inclusion problems affect black farmers because they have been hitherto excluded from high value export markets. The lack of experience, capacity and reference points of these farmers reflect South Africa's political history of apartheid which continues to weigh on outcomes for black farmers and thus also for the sector as a whole.

78. Although apartheid was ended in 1991 and land redistributed, small farmers are often found not to make use of the available land due to lack of financial resources to purchase plants or to maintain existing orchards. The low level of literacy, agronomic knowledge and management skills, as well as lack of access to credit for upgrading of buildings/equipment and to cover recurrent certification or input expenses, limit the capacity to comply with schemes. Furthermore small farmers lack knowledge of the contents of standards schemes; most do not even know of the Agricultural Standards Act of South Africa let alone EurepGap, BRC or HACCP, though they are required to comply with their contents.

79. The lack of sufficient farm extension services and technical support also impedes the adoption of good agricultural practices by small-holders. And where non-family labour is also needed, the increase in the economy-wide minimum wage poses constraints, again due to credit limitations. Meeting basic hygiene standards are most difficult for many small farmers as the cultural habits are deeply engrained and difficult to alter. Even when they are able to be certified and recognize the benefits of certification, but do not experience higher prices, they do not perceive there are gains to be had from the upgrading.

80. Small farmers are integrated into export chains through commercial farms that use them as out-growers to meet quantity commitments or through producer associations which may manage cooperatives. There are generally few contracts between small farmers and these buyers and agreements between them are mostly informal. This indirect and informal link through larger commercial firms of small holders to exporters leads to irregularities in demand for small-holder output. This in turn renders investment in upgrading required for certification risky. However, established exporters need to comply with private standards such as EurepGap. Thus, unless small-holders can become certified themselves, their sales to exporters may ultimately end. A case in point is provided by the Masalal Pack House. This is an emerging firm supplying buyers that do not demand compliance with private standards. However, should buyers require EurepGap or similar certification, it will be difficult if not impossible for this, and for most small firms, to continue to supply them.

VII. Conclusions

81. Despite the limited number of case studies discussed and evaluated in this report, it nevertheless appears that large producers and exporter-producers are able to adapt to meeting private standards requirements for market access. They are in a position to reap the benefits from accessing the global value chains and from being linked to the leading retail firms through more stable sales relationships. This permits them to accumulate social and management capital by dealing with these chains. For small-scale producers the situation is substantially different, in that they are facing two major constraints. First, they often lack basic skills, notably education and more fundamentally, literacy. Second, they are often confronted by a lack of resources, both financial and physical, such as land and equipment.

82. From our evidence, required certification of compliance with private voluntary standard schemes contributes to the exclusion of small holders from global value chains even where infrastructures and services operate efficiently and reliably, such as in Chile and South Africa. Only if there is sufficient financial and technical assistance available, as well as continual monitoring and management oversight, are small-holders able to meet the private standards necessary to access GVCs linked to lead retailers in OECD

countries. Where infrastructure, both in terms of public services and institutions, perform less well, the difficulties of into integrating global value chains increase substantially. Indeed, the infrastructure and institutional constraints may be at levels that resolving small-holder performance at the producer level may not be sufficient to integrate into the value chains. For instance in the case of Ghana: a pineapple grower who is able to meet EurepGap standards but who cannot ship produce to the port or airport in a timely manner will lack access to the global value chain..

83. A feasible way enabling of small-holder access to the global value chain is through contracting with exporters who need supplies to meet the required volumes in the export market. These exporters generally finance inputs, provide training, monitor production, often including managing and undertaking chemical applications and do the record-keeping. They thereby assist small-holders in becoming certified, which makes them a key actor in the integration of small-holders into the global value chains. From the Peru mango case study there is evidence that the small-holder situation in Peru is improving and that they are being certified in greater numbers, through joint certification with exporters, nonetheless, the task is a difficult one. However, the earlier mentioned constraints are formidable, and exporters are not always successful in getting their out-growers certified.

84. Even in cases where, through public/private partnerships and/or other forms of assistance, the constraints to GVC access that are *internal* to the production process can be eliminated, the *external* ones may remain. Thus the small-holder issue remains a difficult and pressing problem as it is also likely to be linked to issues of income and development. The question then becomes whether public efforts, instead of aiming for GVC access for small-holders, should be directed to either helping them to supply markets – local or foreign – that are less demanding in terms of quality and certifications, or to pursue other, more long run economically viable, income opportunities. These can involve non-food agricultural products.

85. Where external constraints are limited, there have been a number of experiences – either through public/private partnerships, or entirely private donor led – that have been successful in connecting small holders to the global value chain. While it is important to understand the mechanisms behind such successes and whether they can be replicated, they bring with them the risk of a dependence syndrome, rendering self reliance of small-holders difficult in numerous areas of market orientation and adaptation. Such experiences do offer hope for inclusion of small-holders in the value chain and improvement of their earnings situation, but it is unclear what the outcomes will be once assistance ceases. What new types of organizational structures—production or marketing- could assist in integrating these small farmers in an economically viable manner? What infrastructure and assistance would be needed? Who and how should it be provided? Similar questions apply to meeting regulatory demands.

86. From the case studies and supporting literature, it appears that inclusion of small-holders into the global value chain is complex and their integration fragile, not only because of required certification to private voluntary standards but also because they are small and cannot benefit from economies of scale or easily adapt to evolving market and economic environment. Caution must be exercised, therefore, in attributing to private standards alone the sole responsibility for the exclusion of small-holders from GVCs. That said, PVS will continue to increase in scope and stringency overtime as their minimum is set by government rules and regulations, which are not likely to move down in areas of food safety, environmental sustainability or other society objectives neither. Indeed, it is more likely that private standards will increase in stringency and scope, just as public regulations in food safety and traceability do. Together with a trend towards increased global sourcing, private voluntary standards, therefore, will remain a hurdle to small holder access to GVCs that will at least be very costly to address. It may thus be necessary to consider alternative products and market structures as well as access paths which can provide opportunities for these farmers in the medium term.

87. The sums necessary for small-holders to be certified under the PVS schemes, the management efforts required and uncertainties as to the long-term viability of small-holder certification, raise questions about development strategies postulated on small-holder production of high-value agricultural produce for export: what aid and cooperative efforts have the potential to change the earning capacities of small-holders over the long-run? How should the opportunity costs of such aid be evaluated? And how to deal with a growing divergence in earning capacities between those who are successful in integrating the global value chain, and those who are not?

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ANNEX I

Annex Table I.1. Economic characteristics of countries subject of case studies

	Chile	Ghana	Peru	South Africa
GDP (current thousand USD)	72 412 250	7 624 200	60 577 000	165 434 100
GDP per capita, PPP (current international dollar)	10 274	2 206	5 260	10 594
Structure of production:				
Agriculture, value added (% of GDP)	8.8	35.8	10.3	3.8
Agriculture, value added (current thousand USD)	5 298 394	2 729 463	5 651 266	5 552 992
Industry, value added (% of GDP)	34.3	24.9	29.3	31
Industry, value added (current thousand USD)	20 627 150	1 896 467	16 937 080	47 528 730
Services, etc., value added (% of GDP)	56.9	39.3	60.4	65.2
Services, etc., value added (current thousand USD)	34 210 570	2 998 269	33 621 690	96 901 410
Structure of exports:				
Merchandise exports (current thousand USD)	21 046 000	2 360 000	8 986 000	36 482 000
Manufactures exports (% of merchandise exports)	16.4	6*	22.1	58.2
Food exports (% of merchandise exports)	28.2	45*	26.9	9.9
Agricultural raw materials exports (% of merchandise exports)	8.9	11*	2.9	2.8
Employment in agriculture (% of total employment)	10	11	2	2

Source: World Development Indicators, 2003.

ANNEX II

88. This section synthesizes the findings of the 4 case studies –Chile, Ghana, Peru and South Africa. It highlights the constraints and benefits which these have brought to the sector's exporters and producers as well as the specific approaches which the private and public sectors have used in adapting to the changing demands of global food markets. Detailed information is provided in the case studies themselves.

Chile: The success of public and private sector collaboration in export promotion

89. Only 30 years ago Chile exported only small quantities of traditional agricultural products such as beans and lentils. Now Chile is a world leader in fruit exports supplying temperate fruits in off-season to Northern hemisphere countries. It become the world's largest exporter of table grapes and the second largest exporter of kiwis and avocados and as well as lead exporter of apples, pears and stone fruits. In 2004 the sector produced 1.6 million tons of fresh fruits valued at some USD 1.8 billion in exports, with main market destinations being the United States-39% and Europe-31%. The opening of the Far East markets, Japan, Korea and China in the recent years is expected to continue to expand exports. Experts now suggest that the sector may in the future face supply-side rather than demand side constraints.[8]

90. What factors were important for this almost spectacular transformation? What role, if any, did private standards play in this transformation? Two important factors identified in Chile's economic success story, are: deregulation and liberalisation of markets and role of the public sector in accompanying the private sector. While admittedly most of the efforts in the development of the fruit market have come from the private sector itself, the public sector was not absent. It provided guidance and assistance when necessary to the sector and ensured that overall infrastructure and economic institutions developed to meet needs of the private sector.

91. One of the important effects of the economic reforms was the elimination of the negative indirect effects which import substitution policies had on the agricultural sector.[9],[10] This stimulated diversification towards export crops such as fruits, wine and flowers and value added rose significantly.

92. In the 70's farmers began planting fruit trees and vineyards with technical assistance of the government development agency, CORFO and the input of US trained Chilean agronomists. Exports have been the driving force behind the sector's expansion, with the private sector investing in orchards and vineyards, irrigation systems, cold storage facilities, refrigerated trucks, etc., and the public sector investing in large public works, major irrigation systems, roads, ports and airports and shipping facilities in response to growing needs of the private sector.

Role of government in the development of the fruit export sector

93. The government plays a relatively small but direct role in supporting the fruit sector in compliance with foreign standards for fruits. Required reports and documents are kept relatively simple and accessible to exporters. It keeps abreast of foreign regulations regarding fertilizers, pesticides, post-harvest treatments, and labelling standards, then disseminates the information to exporters and producers. By helping growers and exporters conform to international regulations, it facilitates exports. The role of the

8 The expansion of fruit orchards will require increasing investments in irrigation as more marginal land is brought into production. Higher labour costs, stricter environmental controls and production and processing and need to increase ports and highways in the south, will increase costs of production substantially and thus affect Chiles current competitive edge.

9 Much of the success has been attributed to the significant economic reforms which were undertaken in the mid 1970's and early 80's and to the generally liberal economic policy stance of successive governments. It liberalised its telecommunications sector, increasing coverage and lowering costs for users and promoted foreign and local investment through selective tax credits and other fiscal measures. Even the port and highway system's capital were opened up to private investment.

10 See Valdés, Hurtado y Muchnik (1990).

public sector in terms of the overall development of the fruit sector has thus been to accompany the private sector in its efforts. This has been done through supporting the development of norms and regulations in domestic production when necessary as well as helping small family farms share the benefits of export growth.

94. The government has also been an important to the development and implementation of different private voluntary standards schemes particularly those at the producer level, in particular good agricultural practices scheme or GAP. It has provided incentives and frameworks for these as well as training and subsidies for investment, in collaboration with the commercial private sector and these efforts appear to have paid off given the success of the sector. Efforts were focussed on four pillars**:** 1-accompanying the private sector in its adoption of the Agreement on Clean Production-applicable to all sectors. In the fruit sector it included a Chilean GAP scheme; 2-generating norms to regulate and certify food safety 3-enhancing the integration of small peasant family farms into export-chains through training seminars, technical tours, support of a national network in fruit as well as financing investments, technical assistance and credit and 4-acccrediting of private research laboratories for the analysis of pesticides and contaminants and of consultants for private standards schemes. Chilean requirements for accreditation were first were made compatible with international ones.

95. Since 1995 government has also provided for financing of a special fund for the promotion of agricultural exports, which is managed by a public-private council, with representatives of government and the leading exporter associations, among which fruit exporters, ASOEX and Fedefruta. The horticultural sector has been the main beneficiary through its efforts to develop: new markets, firm export capability and support to firms seeking to consolidate their insertion in the international market.

96. It is this public-private collaboration at times formal, through legislation and fiscal policy measures as well as informal joint initiatives and associative efforts which have contributed in part to the Chilean fruit export success story. One that has also been repeated in food sectors such as Salmon and wine. These experiences could possibly serve as a reference for promoting high value agricultural exports in other countries. However one is likely to ask if this approach is exportable to other countries or is it specific to Chile and perhaps other Latin American countries. It may not be easily transferable across business cultures and different levels of economic development.

Role of private sector association and public-private collaborations

97. The three most important private sector institutions/associations for the development of the fruit sector are Fondacion Chile (FCH), Fedefruta and ASOEX, the latter 2 being fruit exporter associations. In the early 80's the Fundacion Chile developed a very successful fruit quality inspection service, through investing in modern laboratories and training courses. It created a seal of "pesticide not-detected", used to identify successful inspection activities performed in packing plants, on-farm sites, and in maritime ports and airports, depending on the requests of importers abroad. It also organized international seminars to bring top experts on fruit production, marketing and analysis of international markets to Chile. As its international reputation increased, its inspections and certification became widely accepted, even though it was not a formal certification agency. By 1983-84, la FCH inspected one fourth of all fruit exports of Chile and was able to rapidly increase its services in parallel with the growth in fruit exports. As exporters realized that quality certification improved their prices and permitted them to contract export insurance, market demand for these services grew. Private laboratories and certification companies, mainly international ones, have since entered Chile's market and have reduced costs for exporters. FCH now focuses on disseminating technical and commercial information through workshops and training programmes. Since then, this task has been taken up by the private sector and their foundations.

98. In fall 2000, the exporter association ASOEX, decided that it would implement a GAP program, to signal to foreign buyers that Chilean fruit was safe, of high quality and produced according demands set by the main foreign markets. This marketing strategy was strongly supported by the government, even if not mandatory. ASOEX also set up a foundation for development to promote research and technology transfer. This association obtained government financial support to promote the GAP programme. In 2001, ASOEX announced that it intended to have all Chilean fruit exports sold by its members- which control over 85 % of total fruit exports- certified GAP.

99. In 2002, with the increased demands of EurepGAP for F&V, FCH trained its GAP teachers and consultants in EurepGap, so that so that 3 out of the 6 presently recognized Chilean trainers of EurepGAP are staff of Fundacion Chile. FCH now also offers diagnostic, consulting and training in GAP, BRC, PROSAFE, HACCP, Good Livestock Practices, Good Manufacturing Practices, ISO schemes which deal with food safety and quality for all segments of the food chain. Consultants for GAPs, HACCP and ISOs must now be accredited through SAG to eliminate the proliferation of low-quality consulting or training companies. Government also subsidizes part of training costs of employees in the use of the different standards requirements no matter the sector. The agricultural sector however makes the least use of this facility.

Development of ChileGap: the exporter standard

100. An important and interesting development for export sector was the development of a Chilean certification program, ChileGap®, through the FDF branch of the exporter association, ASOEX. Its objective was to harmonize those GAP requirements are most needed in Europe and in the USA and to simplify the adoption of private standards so as to allow farms to have market access to the main markets at a minimum cost. ChileGap® is now benchmarked as equivalent to EurepGap (see www.chilegap.com) and to PROSAFE. If farms are certified EurepGap they are not automatically certified ChileGap ®because the latter includes some additional protocols regarding clean production set by the Chilean government. Thus ChileGap® is more stringent that either

Policy on Clean Production: government following industry?

101. Since 1997, the government has been promoting and implementing a policy for clean production, to assist in solving the challenges faced by firms to manage environmental consequences of production while ensuring sanitary and safe conditions for workers. A Policy on Clean Production was established by law through the National Council of Clean Production in January 2001. The aim of the Council is to articulate and promote clean production using the different incentives and clean production agreements. Incentives are provided to all economic sectors that have voluntarily signed an Agreement on Clean Production, in a framework of dialogue and public-private collaboration.

102. Agriculture is treated as any other industry in this process. Some 20 of the largest fruit exporters and producers of fruit signed up along with the presidents of exporter associations, and ministries of Health, Agriculture and, Economy and PROCHILE. The Ministry of Agriculture homologated Clean and Quality Agriculture to GAP. Firms agreed to adopt GAP because of increasing demands of the main foreign markets. Still, GAP is not legally binding except in the case of the raspberry and honey sectors. Its aim is to promote clean production in the fruit and vegetable export sector through the implementation of GAP (Good Agricultural Practices) in the choice, storage, use, management and application of pesticides, hygiene protocols, food quality, labour welfare and protection of the environment, as well as its implementation, follow-up and audit. This type of agreement is important for the government, because it allows a better or more focused design of legislation regarding agricultural production, which is now shaped in accordance GAP standards. The Agreement is expected to benefit consumers, in terms of food safety and exporters, by facilitating access to export markets such as, the USA and Europe and to workers,

because it promotes the application of practices that ensure the necessary safety for all workers directly or indirectly involved in the production cycle through prevention.

103. Those which sign must comply with all the measures and goals which are set in the document and according to the established time schedule. The implementation of the agreed measures in the document is to be financed by the firms themselves, though government, through CORFO, supports compliance with its different promotion instruments and loans through the banking system. Subscription of this agreement was done on the web. This is therefore a case where government has in general moved after industry.

Impacts of private standards on producers

OECD survey results

104. What has the system of private standards largely developed by exporters/integrators and the government brought to producers and their access to export value chains? Most producers interviewed have had long term relationships with their exporters, some for as long as 20years. Thus they have clearly complied, but their experience and perspective on the constraints and benefits are important in understanding how these tools of private governance affect the entire chain.

105. Producer-exporter sales are through annual contracts mainly under a consignment system, non-exclusive, with a minimum guaranteed price as a basis (basically for tax purposes). Clients do not generally require minimum volumes nor do they guarantee volume purchases. One exception was a multinational export firm which had contracts that included volumes, varieties and specific quality attributes. Exporters make "forecasts" of volumes to be purchased, in order to plan the export process. In several instances, the export company provides technical assistance on GAP, and in one case it does so using financial support from government agency CORFO.

Identification of constraints

106. Producers and exporters now recognize that the initial stages of moving into GAP were not easy and generated a lot of resistance because it meant moving away from "business as usual" and the use of more intensive management. The constraints mentioned by producers as the most important in the initial years of adoption of GAP were: the low literacy rates of farm workers and their slow adaptation to new ways of working, such as, introduction of record keeping, personal hygiene and informing management when ill.

107. For the large export firms, complying with GAP protocols on their own farms was straightforward, but it was much more difficult in the out-grower farms from which they often purchased supplies. This is because they do not receive any price advantage in compliance and but are very aware of the up-front investments and changes in operations required. It was frequently difficult to have out-growers see advantages, such as increases in efficiency and a better product overall, that could come from adopting GAP protocols.

108. Most firms have adapted, so that today the most significant constraint faced by producers today concerns the restrictions on chemical use (pesticides) for European clients, both in terms of maximum residues and choice of product. This seriously limits the number and type of phyto-sanitary products that can be used for the control of pests and diseases, thus allowing certain diseases and pests to develop. This often limits the export of fruits, particularly those of lower calibre, typically exported to other South American markets which have zero tolerance for these diseases and pests. The upshot is that set the phyto-sanitary products allowed is often very restrictive, and frequently those that allowed are often the most expensive ones. This means that there may in fact be non-intended consequences of private standards in

Region A impacting the trade between countries B and C. These can be real costs to the producers. EurepGap certification ensures enforcement of the phyto-sanitary regulations but does not alter them. Individual buyers may however request more stringent MRLS for instance as part of their specifications.

109. Traceability is another significant constraint that was repeatedly noted in the interviews. Some asked what are the limits to what can be traced? How much detail should one get into? Will this requirement be continually expanded in what is traced and in what detail? This questioning is done even on farms where use of ICT and technology advanced tracking and tracing at the field level is already widely used.

110. Producers consider audit an important element to their operations: it forces compliance and requires you to comply with all aspects of the protocols. But it also provides the producer with the opportunity to clarify concepts and misunderstandings. An interesting observation was made by one of the executives of a Chilean export company. He mentioned that "in old days the clients came to Chile and to the farm to see the fruit. Now they come to see other things such as the bathroom floors…perhaps they already trust the quality of the fruit, because they know it".

Benefits of compliance

111. Producers are interested in differentiating their produce by obtaining higher quality fruit, so they wanted to move to a more environmentally friendly production system and also to achieve a better standard of working conditions for workers. Having to adopt GAP helped make the appropriate changes; its diffusion in the area also helped workers to understand that they had to change their personal habits so as not cancel out effort that benefit their safety and health. In the application of pesticides workers were already undergoing medical exams to the workers and these knew that they had to wear masks. EurepGap gave an additional push and helped them avoid the risk of returning to the traditional, cultural way of doing things in the country-side. This was particularly true where there were labour shortages and the less knowledgeable or experienced workers had to be employed. According to one producer, the adoption of the protocols has also meant improving farm management and providing more training to labourers and employees.

112. Certification as achieving GAP does not mean obtaining better prices for the produce, but it is regarded as "indispensable" in order to remain in the market of OECD countries. In a more indirect way, it allows you to be in preferred marketing chains of supermarkets that do pay somewhat better prices. This is often not well perceived on an individual basis, particularly by outgrowers.

113. The growth in fruit exports has meant more and better employment opportunities, better working conditions for the unskilled labourers, and better care of the environment. But producers do not perceive these economy-wide benefits as a direct consequence of GAP, but rather as a consequence of "economic progress", as a normal and logic event that started in the case of Chile more than 20 years ago.

Perceived role for the government

114. Producers generally do not want the producers to interfere in their marketing operations because this can increase bureaucratic red tape and reduce the rapid and flexible responses to market conditions. The main role for government was seen in the continued improvement of infrastructures including road and ports access as well as maintenance of the performance of public utilities and telecommunications.

Conclusion

115. For most producers implementing private voluntary standards has not been a severe constraint, given the positive market outcomes. This is because producers and exporters saw them as a way to

differentiate their overall fruit production system in terms of quality and safety and environmental issues and the government participated in assisting the private sectors initial moves. It is also true that firms had the ability to adapt to the changing market demands on product quality and safety and did this in a cooperative manner, Fedefruta's motto, together we are stronger. Chile's export sector has benefited from overall high level of development in infrastructures and institutional services, so that roads, telecommunications and literacy were not main constraints. However, even in Chile, dealing with small peasant farmers as noted in the previous section has been fraught with difficult to dislodge habits and ways of behaviour in addition to classic constraints of literacy, size of operation and lack of associative spirit.

Ghana: Accessing global value chains in a development constrained environment

116. Ghana is a low-income West African country, whose poor macro-economic performance in the 1980's and 1990's with high inflation and interest rates as well as currency instability stymied much needed investments in infrastructure, industry and agriculture. Lack of physical infrastructure and services has acted as brake on private initiatives particularly where needed for participation in competitive world markets. More recently the policies are directed to promoting capacity building and increasing competitiveness in all sectors particularly those which have potential for increased export earnings and thus in particular agriculture.

117. With agriculture the dominate sector in terms of employment and output as well as in its contribution to overall price stability, efforts are directed to improving agricultural productivity and incomes. Foreign aid and non-governmental organizations are contributing with technical and financial assistance to the re-structuring and expansion of the agricultural sector.

118. Non-traditional exports may hold potential both to increase export earnings and to diversify away from the limited traditional set of commodities often subject to significant price swings in world markets. Among these non-traditional products, fruits and vegetables account for almost 40% of this category. The value of fruit and vegetable exports increased over tenfold over the period 1991-2004 to from a mere USD 3.3million to USD 38.4 million, with much of the increase reflecting the strong performance of non-pineapple exports. This is paralleled with the growth in the number of small export firms which doubled over the same period from 460 to 950 firms.

119. Pineapple remains the dominant fruit export accounting for over 70% of the total fruit exports, with major destination markets of UK, Germany, Netherlands, Belgium, Switzerland, Italy and India. Pineapple export dominated by small firms--only 12 had exports exceeding 1 000 tonnes. Pineapple production is also dominated by small-scale producers which account for 30-40% of production (Voisard and Jaeger, 2003). This makes it a particularly interesting to examine in some detail impacts of private voluntary standards on exports.

Overall competitiveness of the sector and PVS constraints to accessing GVC

120. The impact of private voluntary standards (PVS) on access to global value chains (GVC) reflects the initial competitiveness of the sector as well as specific firm capabilities of firms. The needed effort and investment to upgrade to the specific market requirements and the infrastructure and public services supporting are major determinants in meeting market needs. Upgrading the individual producer to meet requirements can only be viable export strategy if the infrastructure and institutions function efficiently so as to increase effectiveness of individual efforts to upgrade and to comply with the increasingly stringent requirements of private standards.

121. In Ghana the overall lack of public services and infrastructure are major constraints for both individual firms and the sector as whole. These issues are now being seriously addressed but it may be sometime before the fruits of these efforts take root among producers.

122. Besides the role of food safety and quality standards, most of Ghana's exports are restricted to a low cost strategy in order to gain market access by pricing advantageously against regional and international competitors. Where sea freight costs comparable to competitors are an issue, Ghanaian exporters compensate with low farm –gate prices or marketing margins. The following provides a very synthetic view of the fundamental constraints for Ghana in the high-value agricultural product export sector.

- **Strengths**, low cost air freight, low labour costs, low input costs, low marketing costs, favorable macroeconomic climate and investment policy. These strengths are important in the low price product market but in high-value markets they often cease to have an effect.

- **Weaknesses:** lack of laboratory testing facilities and surveillance, low level R&D for new varieties, poor port facilities cold storage; poor internal road system connecting producers to packers to exporters; lack of truck availability, lack of reliable energy supplies, lack of reliable and efficient telecommunications, insufficient extension services, lack of packing firms with high end technology and lack of logistics firms, lack of name brand firms such as DelMonte as in Cote d'Ivoire, lack of high quality production, packaging costs and packing input supply constraints. Producer population with low educational levels thus constraining record keeping and traceability , lack of knowledge of GAP, lack of personal hygiene rigor, need for exporters to monitor chemical use, hygiene and etc.

- **Threats:** low quality market may dry up if air costs increase or demands become more stringent, increased requirements excludes small-holders to reach European markets, exclusion even from traditional markets may increase if training and upgrading to some minimum is not achieved for the majority of producers.

- **Opportunities**: develop fair trade and organic products, NGO and public-private partnerships provide assistance to developing more market access ;Develop vegetable markets and to supply local markets even if exports not possible, agro-climatic conditions make possible expanding to products with increasing market demand world-wide, such as mango.

Role of Private standards

123. The food safety and quality requirements faced by Ghanaian fruit and vegetable exporters reflect the public and private standards applied to a particular product that is supplied to a particular supply chain. UK supermarkets requirements are the most stringent both regarding food safety-regulatory and non-regulatory measures as well as for other attributes such as GAP, quality grades and social welfare conditions. Dutch/German/Swiss supermarkets while very strict with respect to regulations for phyto-sanitary certification they are less so for private standards regarding traceability, HACCP, MRLs and other attributes. Wholesale markets while still requiring regulatory compliance do not require private standards and are less exacting with respect to quality attributes and traceability and regional markets often have few or no phyto-sanitary requirements. While private standards, both in the form of business-to-business specifications and collective industry codes, will embody regulatory requirements that are enforced at the level of their buyer and/or their customers, they will also reflect the market positioning strategy and risk adversity of the buyer and/or their customers (Henson, 2006).

124. The different requirements in food safety and quality standards suggest that Ghanaian exporters have a choice between markets with strict (and seemingly ever stricter) food safety standards that are associated with high costs of compliance but that might also offer opportunities for value addition and high margins, and markets with weak food safety and quality controls that can be accessed with little or no investment, but where margins are likely to be small.

125. The export supply chain can be broadly sub-divided into two parallel sub-sectors according to prevailing standards of food safety and quality control in production (Annex Table II.1). At one extreme are leading or entrepreneurial exporters that supply the most exacting markets - predominantly European supermarkets - that have upgraded their pack-houses, implemented GAP (and may be EUREPGAP certified) and traceability and (where used) established codes of practice and effective control systems for

out-growers. At the other extreme there are 'traditional' exporters that have only rudimentary food safety controls, including poor pack-house facilities (at best) in which HACCP has not been implemented and there is little or no traceability along the supply chain. Generally, these exporters source (at least in part) from out-growers or wholesales, over whose production practices they have little or no control. Out-growers have generally received little or no training in GAP, pesticide use is not monitored and storage is often in makeshift installations, and there is no record-keeping (and thus no traceability). Most of the exporters in this supply chain supply lower-end wholesale markets. Currently, it is this sub-sector that predominates.

Annex Table II.1. Sub-sectors on fruit and vegetable export supply by levels of food safety and quality management capacity:

Leading/Entrepreneurial Firms	Traditional Firms
Main markets	
• Some penetration into UK supermarkets • Continental European supermarkets • European wholesale markets	• Some penetration into smaller European supermarkets • European wholesale markets
Nature of supply chain	
• Larger integrated exporter-producers • Some use of out-growers	• Smaller integrated exporter-producers • Widespread use of out-growers
Food safety and quality capacity	
• Implementation of GAP • EUREPGAP certification increasingly widespread • Improved pack-houses with HACCP in place or being implemented • Traceability through supply chain or in the process of implementation • Generally effective controls on use of pesticides • Codes of practice and controls on out-growers, where used	• Little or no implementation of GAP • Little or no EUREPGAP certification • Rudimentary pack-houses where these exist • Little or no traceability through supply chain • In general only limited control on use of pesticides • Little or no control on out-growers

126. The leading and larger exporters have engaged independently in their own programmes to implemented enhanced food safety and quality controls. These initiatives have been driven by the will (and need) to compete internationally and to gain access to higher-value and growing markets, most notably those of the European supermarkets. Most of these efforts have centered on gaining EUREPGAP certification, predominantly for pineapple production. These leading exporters, however, still suffer from external weaknesses, for example in public testing capacity and the lack of appropriate facilities at the air and sea port.

127. For those unable to develop their capacities on their own, considerable external assistance has been provided to upgrade food safety and quality control capacity in both the private and public sectors as a means to support the promotion of fruit and vegetable exports. For example, USAID has supported producers and exporters in complying with EUREPGAP through training and financial support to cover auditor fees. In parallel, the German Technical Cooperation Agency (GTZ) supported the Plant Protection and Regulatory Services Directorate of MOFA in training farmers to meet EUREPGAP requirements. In some cases this support has made a significant difference and made private efforts successful. Such assistance helped to EurepGap certify suppliers for Blue Sky Products including group certification of 18 of its out-growers. Subsequently, over 100 producers or producer groups have been certified to

EUREPGAP in Ghana, most of which are engaged in pineapple production. Indeed, at the current time it is estimated that over 40 percent of pineapple exporters are EUREPGAP-certified.

Interview highlights

128. The interviews highlight how important compliance with the private food safety and quality standards can be for the European supermarkets. It is often critical to establishing and maintaining supply relations. Indeed, leading exporters/producers tended to describe their market position and competitiveness in terms of their ability (and the associated costs) of complying with the standards laid down by their customers relative to domestic competitors.

129. Among the exporters/producers interviewed, the specific private standard that was routinely referenced was EUREPGAP. While it was recognized that it was still possible to supply most markets without EUREPGAP certification, the most exacting buyers (UK and some continental supermarkets) were increasingly requiring compliance among their suppliers. For all participants the objective was to be EUREPGAP certified, for access to high value markets. In the case of exporters/producers that did not have established relations with supermarket buyers, compliance with food safety and quality standards was seen as a condition and entry cost to a more lucrative market. In the case of established suppliers to European markets, compliance within a buyer-defined period of time, or progress towards compliance, was recognized to be a condition of continued supply.

130. Suppliers were also expected to have the capacity to meet orders that could vary in magnitude on a day-to-day basis and to ensure consignments reached their destination within a prescribed time window. Private food safety and quality standards is that they define a minimum quality to which suppliers were required to conform rather than being *per se* the basis of any competitive advantage. It was generally recognized that market competitiveness was built on a host of other factors, including price, value-addition, and innovativeness, among others.

131. The greatest difficulty for achieving compliance was the necessary up front investments in infrastructures and capacity up-grading. Access to credit is also limited and furthermore there is always a risk that they may not be able to gain or to retain access to the more demanding and lucrative markets. Banks were also reluctant to finance these as the increase returns in the medium were uncertain and increased likelihood of loan default. The experience of Blue Skies and interviews indicate that most investments made to comply with EurepGap are those in upgrading of production facilities, implementing new agronomic and managerial practices. These may include installation of chemical storage facilities, toilets, changing and washing facilities, upgrading of pack –houses etc, The costs of these range from 400 to 500USD for small outgrowers to USD 75 000-100 000 for integrated producer-exporters. For out-growers the costs were about 2-3% of sales, for small producer–exporters to 6-8% of sales and for large producer-exporters firms.

132. Most of those interviewed be they out-growers or producer/exporters were not satisfied with their existing food safety or quality management capacity. In moving along the upgrading path they realized that there were many additional elements which needed to be upgraded. Almost all respondents cited the weakness of public infrastructure in general as well as for the fruits and vegetables specifically as major constraints to their operation. Most had received little support, in terms of advice or finance from government agencies and when these were received they were from donor –funded programmes. However when these are stopped it is often unable impossible for them to continue on their path to upgrade or expand. In sufficient funding of research for adapting new varieties in the fruit sector was also viewed as a hindrance for exploiting their potential.

133. It was widely recognized among leading exporters that, to the extent that access to quality infrastructure and services, it would be difficult to continue to compete with major exporting firms in Kenya or the Côte d'Ivoire. This puts substantial responsibility on the government to upgrade services and needed infrastructure as well as on firms to keep upgrading their competencies so as to compete in the market place. If such an assessment is valid for the lead firms it is all the more crucial for the medium and small firms which wish to compete in the global market place.

Peru: Asparagus and Mango: non-traditional and traditional product experience

134. Peru is a low income country with low levels of inflation and stable exchange rates. Its political commitment to maintaining open markets and to promoting economic reform has stimulated investment and economic growth. Though the share of agriculture in GDP is less than 10 %, approximately 25% of the population lives in rural areas and development of a sustainable and efficient agri-food sector is viewed as a possible important contributor to growth and employment in these regions.

135. The Peru case study examines the role of private standards in integrating asparagus and mango producers/exporters into global value chains. Asparagus, a non-traditional product, is a successful export at the world level, while mangos, a traditional product, still faces a number of constraints in export markets. Both the initial conditions and the current economic structure and behaviour of the sectors are strikingly different even though operating under a common infrastructure and economic policy framework. A comparison between the two helps to illustrate how initial conditions affect not only the evolution of the sectors but also condition agents' responses to market opportunities and constraints. This may also help to explain differences in capacity and adaptability in meeting private standards and accessing global value chains.

136. Professional associations and public-private cooperation have played an important role in providing the infrastructure, services and incentives that enable members to access export markets and to be competitive. The public sector has also been important in promoting synergies among the key actors in the sector which include individual agents and their associations.

Asparagus

137. In little over a decade Peru has become the world's number one exporter of fresh green asparagus. Its producers have been able to meet not only high quality and safety standards but also the commercial requirements of importers. The asparagus producing regions have prospered and are now dynamic local economies as the spin off sectors have generated employment and rising incomes. What factors can explain this growth and how have private standards contributed? More importantly can the experience be replicated for other products in Peru or can it be transferred to other developing countries. Or is the experience simply unique?

138. Asparagus is a non traditional product and from the beginning its production was aimed at the export market. In fact, asparagus production was a way to diversify the investment portfolio. From its beginnings it has operated and developed with market vision.

139. The asparagus sector is a modern, well-financed, high performance sector. Investments to meet market demands including increasingly stringent standards of buyers are regarded as normal response to the commercial environment.

140. Most production units are large with at least 20 ha. A 20 hectare unit generates between USD 80 000 and USD 120 000 in net revenues per annum. Thus there are no small asparagus producers. Exports began to take off after 1985 and became an important export earner since the mid 1990s. The total area under asparagus production is now about 24 500 hectares and is split between white asparagus for processing and fresh green asparagus. Fresh asparagus exports alone account for over 15% of Peru's agricultural export earnings and 90% of asparagus exports.

Institutional arrangements

141. Both private and public institutions have been important factors in the development of the sector and in many cases have been inspired by the Chilean experience in the fruit export sector. In general the public sector has provided financial and organizational assistance in the set up and initial years of producer and exporter associations. One of the important public institutions involved in this has been PROMPEX (Peruvian export promotion agency) of the ministry of commerce, which also continues to assist firms in improving their export competitiveness. SENASA, the national sanitary service agency of the ministry of agriculture has also worked closely with producer and exporter associations to contribute to the ensuring a food safety and has been an important collaborator in the Peruvian technical standard for asparagus.

142. To promote the safety and quality of asparagus, the producer-exporter associations provided technical and marketing support for the development of a Peruvian technical standard, which was ultimately adopted by Codex Alimentarius as a voluntary standard for asparagus. The standard includes three principal elements: a code for good agricultural practices at the farm level with a focus on pesticide use and integrated pest management, natural resource and environmental conservation and safety; minimum quality requirements and guidelines for labelling, and hygiene practices for handling of fresh asparagus for human consumption and to ensure a safe quality product. The code was subsequently adopted by the Codex Alimentarius, as a voluntary standard. Overall it has boosted the quality and reputation of the asparagus industry. This is evidence of the importance and efficacy which collaborative initiatives can have even internationally.

143. Among the most important producer-exporter associations is, IPEH, Peruvian Institute for Asparagus and Horticultural crops created in 1998 by asparagus growers and exporters and interacts closely with the ministries of agriculture and trade. It disseminates market information, lobbies government, undertakes training and educational programmes, and provides funding for R&D to develop new varieties and new agronomic technologies. It was also instrumental in the setting up the HACCP system in asparagus processing. HACCP is the benchmark for sanitary surveillance in the sector and has made it a key element in its Code of Hygiene for processing fresh asparagus. It also paved the way for the implementation of the Export Quality control program of PROMPEX which has developed management tools for monitoring and supervising the firms' progress in implementing quality systems.

144. Another important associative effort is that of Frio Aereo, a private non-profit organization to facilitate the cold chain logistics at the airport. Over 75% of fresh asparagus exports pass through Aereo Frio's facilities and make use of services, such as storage and palletizing as well as up to date information on private standards and regulatory requirements for exports. Over the past 3 years it has also been making use of economies of scale to reduce input costs to its members. A special Frio Aereo label is has been developed to certify product quality at the point of origin, 'quality seal', which is widely recognized by main importers. Producer and exporter associations in collaboration with the public sector have to a large extent developed the institutional framework to promote competitiveness and meet growing market demands.

145. To understand how the asparagus supply chain operates and how participants are dealing with new demands, a number of producers-exporters were interviewed. All six firms interviewed were integrators, most of which used independent suppliers to complement their own production. However some did not engage in any outsourcing.

Supply chain

Producers

146. The asparagus export sector is not very concentrated and is dominated by medium-large integrated operators, but small exporters are also present though these enter and exit quite rapidly. The largest producers (> 500 ha), are basically integrated companies that export their own produce and also have stable contracts with medium sized farms (> 100 ha) for sourcing purposes. Smaller producers, with fields between 20 and100 ha, often negotiate their produce season by season and many receive technical assistance and guidance from larger export firms who wish to ensure a given quality and volume. Contracts are usually set at the beginning of the season. Regardless of size, producers and exporters are businessmen who see the sector as way to diversify their investments.

147. In medium-sized operations the crop is harvested by grower himself and the crop is sorted and selected according quality criteria in presence of the packing plant representatives. In vertically integrated firms the crop fields are managed as IOCs (Independent Operating Companies) to maintain cost efficiency and keep competitive. Once the crop is harvested, sorted and washed it is hydro cooled to keep its freshness and taste. The product is then packed in 5-11 kg cartons according to quality. The supply logistics operations then take over to ship the product to the airport. These include use of the normal cold chain technologies. Normal shipping time from field to plane is less than 3 days. The costs and organization of the cold storage chain is of primordial importance for a high value product such as asparagus. The producer-exporter association's Frio Aereo can lower costs of the cold chain transport and storage system due to economies of scale.

148. Timely information on private standards and regulations is a necessity for firms. Independent producers are informed about market trends and needs through the packer-exporters who are in contact with final clients. In the case of producers/exporters-integrators, the commercial managers obtain the clients specifications by communicating directly with their brokers, distributors, importers or even retail stores' category captains. Certification and audit firms provide them with the specific requirements of each standard. Any changes in requirements are rapidly communicated through one of these avenues.

149. Both exporters and producers were satisfied with their capacity to meet product quality and food safety requirements and be certified to the demanded private standards. The common complaint regarding standard compliance concerned multiple certificates for the same attributes. These were regarded as costly in terms of time and monies as each certificate requires a separate audit and certification fee. Most said they would prefer a set of global standards and focus competitive/differentiating efforts on quality issues.

150. All producers currently satisfy the requirements for Good Agricultural Practices (GAP) certification, the export Peruvian standard. Many are also being EurepGap certified. A "general" GAP certification has been promoted by the US importers for the past 7-8 years and EurepGap certification has been recommended by the EU buyers in recent years. Annex Table II.2 summarizes the main private standards met by firms interviewed. The larger firms manage and fund their own certification, however smaller producers are often assisted by IPEH and Frío Aéreo (producers associations). These latter are financed in part by their own budgets and in part by government funds. GAP is involved in issues related to field hygiene, worker safety, record keeping, environmental quality, and traceability, but is not as strict or as complete as EurepGap.

151. HACCP or other private food safety standards are generally required when firms undertake post-harvest tasks such as 1st stage transformation and packaging. These are easily satisfied by packing houses/exporters and with minimal difficulty. Moving up toward more stringent standards has only meant marginal investments in equipment, buildings and capabilities for many.

152. With respect to the requirements for the largest export market-the US, fresh asparagus exports require fumigation prior to entry. This procedure reduces shelf life significantly and can be an obstacle for certain value-added presentations. For instance if asparagus are cut and wrapped in plastic, US -APHIS- (Animal and Plant Health Inspection service) may unwrap them in the inspection process. This procedure upon entry to US limits the exporters' capacity to supply value-added products.

153. Traceability itself is an independent management system, and most, even small producers, processors, and exporters are aware of their benefits. However, record keeping is still one of the industry's bottlenecks for small producers with limited know-how about structuring information systematically and informal operation methods. Audit companies stated that traceability requirements are already included in some certifications, such as EurepGap. Most producers can provide a field record to the exporters, but may not be able to link it to the exact lot, or day of harvest. On the other hand, larger firms like often dealing with only their own production - have a rigorous traceability system that allows produce tracking per bundle to the field spot.

154. There are many accredited audit and certifiers as well as testing laboratories in Peru, thus price competition is keen among them. Certain exporters use only specific audit firms, such as Primus Labs, Davis Fresh and SGS, but others exist and are active in the market. These are often designated by the importer itself. Costs of audits, certifications and initial investments for compliance differ substantially between firms, depending on the standard and initial conditions of the firm. As the asparagus industry was born as a means of portfolio diversification, it has kept up with market demands and general technological advances at the farm/packer and exporter levels.

Annex Table II.2. Standards schemes compliance of selected producer/exporter firms

	Agrokasa	**Agro Industrias Backus**	**Agrícola Talsa**	**Athos S.A.**	**Inagro Sur**	**Intragrícola**
BPA	Yes	Yes	yes	yes	Yes	yes
EurepGap	Yes	Yes		yes	Yes	
SQF1000/ SQF2000						
BRC (British Retail Consortium)	Yes					
IFS (International Food Safety)						
EFSIS =BRC now		Yes				
HACCP Holandés						
ISO 9000/9001 (Control de Calidad)						
ISO 14000 (Medio Ambiente)						
SA 8000 (Responsabilidad Social)						
ISO 22000		Yes				
BASC	Yes	Yes		yes		
OTROS	Nature´s Choice				Nature´s Choice	
Total annual cost (certification and implementation)	US$ 50,000	US$ 100,000 [1]	n.a.	n.a.	US$ 25,000	n.a.

1 includes certification for own fields, co-financing of associated third party fields, and packing facilities.

155. Among the most difficult requirement of private standards for small producers to meet is that of data recording in the fields with respect to chemical applications and other inputs. The use of information and communication technologies in the field is already being used by large producers and appears to be most efficient as well as accurate. However for smaller farmers both cost and technical capabilities can constrain their use.

156. Success of exporters is a function of firm management capabilities and its resource base including financial capacity. Public infrastructures and services are also considered to play an important role in facilitating **or** constraining their export capacities**.**

- Poor rural roads: many are too narrow and the produce from those fields linked to these roads need several trips of smaller trucks to get the harvest to the packing house;

- Funding for R&D activities is very limited and more varieties attuned to consumer demands need to be developed;

- Laboratory testing facilities need improvement in part to avoid inconsistent results;

- Telecommunication systems are adequate in coastal areas but inland they are unreliable and limit in-field use where linked to tasks as data recording or remote sensing operations will be required;

- Energy supplies were adequate, stable and at competitive prices,

157. Logistics is a major concern for the profitability of the asparagus industry. Most asparagus is shipped by air and costs are quite high. When asparagus prices are at their highest asparagus shipments compete with other high value products which are able to absorb larger transportation costs, particularly during winter holiday months. Moreover, aircraft traffic in Peru is quite low compared to other destinations in Latin America; therefore, cargo spaces are limited.

158. Those interviewed believed that the sector will experience consolidation across activities and become more concentrated, with larger and more competitive firms, more tightly aligned across the production and distribution chain now entering the sector. There is a tendency for large buyers from the US and EU to invest in the equity of asparagus packing houses, and for packing houses to establish either long-term agreements with small and medium producers, or to invest in their own large plantations. The future is likely to see: more emphasis on product characteristics and packaging presentations, on post harvest technologies, on innovations in agronomic techniques, such as combining irrigation and fertilization techniques as well as in improved logistics systems and tracking and tracing.

159. The asparagus experience demonstrates that sectors can be competitive at the world level even in developing countries, but that this requires a greater effort and more risk taking on the part of private sector participants. The associative and institutional structures have been a very important element in the development strategy at firm and sector levels.

Mango

160. Mangoes have been grown for local consumption the production since their introduction into Peru in the 19th century. The production structure is dominated by small growers most of which are not involved in export markets. In fact most of production is locally consumed. Nonetheless almost 25% of production is exported and accounts for about 4% of agricultural exports. Its long harvest season and very favourable growing conditions has given it competitive edge over other exporters however, given differential costs in supply logistics and transport costs, this edge is being eroded in favour of countries like Brazil and Ecuador. The path followed in the sector's export development is similar to that of other fruit and vegetable export sectors in countries with the same level of economic development.

Institutional and Associative Setting

161. PROMPEX has been actively promoting competitiveness of the sector and access to international markets. It provided initial funding and organizational assistance for the development of PROMANGO, medium and large mango producer association modelled on the asparagus association and APEM a producer-exporter association. Both are now privately funded and operated, though PROMPEX continues to assist them in capacity building efforts to ensure sustainable growth in the sector. Promango accounts for 30% of mango exports and has 26 members with about 1000ha of mango trees. It collaborates closely on food safety with SENASA and the ministry of agriculture for environmental and pest related issues. APEM (Association of Peruvian mango producers and exporters) accounts for 60% of total mango exports and its aim is to develop a 'quality culture' among members and assist in accessing new markets. It also represents its members in negotiations with local and national government agencies regarding phyto-sanitary regulations. APEM is working towards offering more services to its members, such as up to date market information and training activities as well as promoting joint efforts in quality assurance and in consolidating supplies to offer large volumes for particular buyers and negotiating price reductions for shipping and inputs.

The supply chain

162. Exporters are the main organizers of the supply chain operation and are responsible for ensuring conformity to international regulations, quality attributes and private standards requirements. There are two main types, those that uniquely export and buy from local producers, via contract formal or informal and those that produce on their own farms and increase their supply offering by sourcing from small scale growers, a few export only their own production.

163. Where supplies are sourced from small scale suppliers, exporters provide them with technical assistance and managerial guidance. Technicians from packer/exporters also advise on agronomic practices. The type of cooperation between firms depends on agreements brokered between producer and packer-exporter. PROMANGO, the mango producer association has implemented a system whereby the best technicians from each field/company visit other PROMANGO members during the season. Thus PROMANGO takes up part of the task of technical assistance in addition to that provided by exporters. Technicians are highly skilled in best agronomic practices and are full time employees of the medium and large plantations owned by PROMANGO members. The cost of the visits is almost totally absorbed by the larger plantations for the smaller ones. This system has brought positive results for members and has improved product quality for small and medium sized producers. It is perhaps a form of inter-firm cooperation that could be usefully and productively employed in other settings in Latin America and elsewhere.

164. Although there are over 70 mango exporters in Peru, the sector is dominated by five or six exporting firms which together account for more than 50% of the total exports. These belong to the leading members of APEM (Peruvian Association of Mango Producers and Exporters). For these firms, fresh mango exports account for about 90% of their revenues, although some do produce/export other fruits and a few have entered into the processing industry, producing mango chunks, dehydrated produce, as well as pulp and juice.

165. Smaller export firms in the sector are varied in their activities and structures: Two of the firms interviewed are integrated operations both producing and exporting mangoes and are also well integrated into the US retailer procurement systems. The largest exporter sources its mangoes from a variety of producers in addition to producing on its own plantations of 150 and 300 ha. Another large exporter provides packing services to either growers and/or other exporters but exports only own production and is linked to a foreign marketing firm.

166. Small and medium sized exporters consider mango as a complementary product and many are basically one-man-business operation using outsourced services provided by packing houses and harvesting firms. There are also some independent small-medium farmers that occasionally try to export their own production, however with only limited success.

167. Independent mango growers negotiate the sale of their output each season to highest bidder, thus there is no strong link between the packer-exporter and producer. On medium-large holdings production is harvested by owners and is sorted by quality/size/colour and sold in the fields under the packing plant's supervision. When obtaining production from small producers mangoes are collected by intermediaries and brought to the packing plant. In the same way, there is almost no capitalization on the know-how and technical assistance offered by the exporters, since the agricultural practices adopted during one year, may not generate positive benefits until sometime in the future, such as promoting a sustainable fertilizer programme.

168. Almost 100% of the produce is shipped in containers by sea freight, under controlled conditions, through the port of Paita, which is about 3 hours away from the 4 main packing facilities. Sea cargo services are basically arranged between specialized logistics companies and the storage facilities.

Producers-production processes

169. Mango production covers an area of about 14 500 ha which produced about 275 000 MT in 2005. There are few large producers defined as those with plantations over 60 ha, all of these are members of the producer association, PROMANGO and their output is destined for the export market. Despite their fairly large holdings, they are the most highly leveraged financially and do not necessarily adopt the most recent technologies in production. A second cluster of enthusiastic middle-size producers who have at least 10 ha again most of these are also members of PROMANGO and have been certified EurepGap. PROMANGO members' production accounts only for 15% of all mango exports (about 1,000 ha), therefore, small farmers, mostly non-competitive with average holdings of 2-5 ha account for almost 85% exports. However most producers are small holders with low educational and skill levels and heavily rely on exporters or packing houses for assistance in meeting standards.

170. Producers are informed of required product specifications and private standards through packing houses or exporters which have direct links with clients. Business relationships rely on trust between agents rather than formal contract clauses, however producers however often feel cheated when at the end of the season they are presented with "surprise" information from the exporters/packers, which should have been shared at the beginning of the season. Growers claim that lack of information on logistics, costs and market price data impedes their calculation of the add-on component of price, is damaging their relationship with the packing houses-exporters.

171. Most producers self-finance the improvements on their plantations but some commercial bank loans are available. Most medium to large sized growers are highly leveraged and their capacity of obtaining additional credit lines is very limited. No interviews were undertaken with very small producers, but rather with those exporting their output.

172. The firms interviewed were satisfied with their capacity to meet requirements both regulatory and private standards. The main regulatory standards for export are set by SENASA, plant health agency of the ministry for agriculture. It requires a phyto-sanitary certificate attesting to, the main private standard applied at the producer level is EurepGap which is viewed as the only way for ensuring good agricultural practices, worker safety and hygiene, traceability and environmental quality. The most difficult requirements of the private standards to fulfil noted by farmers are

- Detailed record keeping at the field level
- Restrictions use of agro-chemicals.
- Traceability for the small and medium producers as it is linked to the record –keeping.
- Control of personal hygiene habits of workers
- Credit constraints for infrastructure development
- Lack of adequate R&D for new varieties and agronomic techniques

173. Overall medium and large producers feel that they receive substantial benefits from becoming EurepGap certified, even though there are costs to it. Most of the medium-large growers find that EurepGap conformity has provided them with better management and control systems, so investments and recurrent costs tied to the certification have been profitable.

174. Mango is high value product thus; quality characteristics are essential-- color, size, maturity, flesh consistency and sweetness. Mangoes can also be rejected even if they satisfy GAP requirements because of lack of quality attributes. Constraints in meeting quality standards were often attributed to lack of adequate R&D support to develop new varieties and to improve agronomic techniques and water management.

175. In exporting to the US, mangoes are subject to APHIS inspections for hydrothermal treatment, to contain fruit fly contamination. Many producers report that the treatment increases the production costs and reduces shelf life and affects appearance and quality in general. For exports to the EU, and particularly to the UK, buyers come to Peru to ensure quality standards during the packing season. Frutopia, for example, brings a specialized technician during the whole 3 months from Utopia fruit importers, to guarantee quality standards. EurepGap is required of EU food retailers.

176. When certified high quality products are in short supply exporters may in fact accept high quality fruits that have not yet achieved certification. This is in part due to traceability not being enforced but also to sheer lack of adequate supply volumes. However

Costs of certification and maintenance

177. Where record keeping is a constraint, technicians are hired to undertake record-keeping at the field level, but the salary of such personnel can be about USD 800-1000 per month. This raises the costs of meeting the standard. It is suggested that the minimum size for economic viability with certification is 15-20 ha with sales of about USD 120 000. This permits meeting recurring cost as well as investments needed for upgrading. For a 10 ha farm, USD 10 000 per year in recurrent costs would be not be a feasible in the medium term even if a technician would also be involved in other activities so that his costs be spread over a different farm activities, thus some allowance must be made in evaluating the cost-benefit.

178. The use of 3rd party auditors and certification companies in conformity assessment has transferred costs of quality and sanitary control from the importer to the producer. Therefore, mango growers must now invest in infrastructure, training programs and technical assistance in order to comply. According to producers, expenses in maintenance of installations, certification analyses and training can range between 4% and 15% of the price paid at the farm gate.

179. Certification costs for small farmers are assumed by large exporters. There are two options to reduce certification costs for the grower: group certification program (offered by producers associations like PROMANGO) or contract farming agreement with an exporter, where the exporter assumes certification compliance. In this last case, the exporter accepts to assume the costs at farm level, because he remains the owner of the certificate.

180. Most small producers are generally not certified, though many are in the process of being certified. This situation often creates tensions with certified producers. Even many large and highly reputed certification companies – feeling the pressure of smaller and cheaper certifiers in the market – have reduced their fees and tend to be more flexible each time. Some members of PROMANGO this feel they are not being fairly treated, as exporters are using the medium and large-farmers' certificates to promote their exports in the international market. But, in fact, they mix their certified production with uncertified production and sell it under the same brand. One grower said, that if they divide the total exported volume between the total certified operations in Piura, they will come to incredible yields such as 40 TM/ha – that are impossible

181. Infrastructure and services available to the sector were seen generally considered weak, though the road system from farm to packing house was satisfactory. The most frequently noted weaknesses were:

- Poor port logistics with costs are higher than those of their competitors in Ecuador and Brazil.
- Low efficiency of water supply distribution thus producers are forced to adjust their irrigation programs to coincide with the offerings of the valleys' water administration.
- Telecommunications lines are poor even for cell phone reception forcing the communications to be done in the offices in the nearby cities.
- Laboratory testing facilities are not efficient in their services medium-larger growers must send their samples to the local university and results are not always consistent.

Looking Forward

182. Market is expected to mature by 2012 and will bring with it fewer but larger players. A competitive and viable plantation will be need to 60-120 hectares and smaller plantations will need to establish a cooperative type structure in order to survive. The importance of retailer demands and the capacity to communicate directly with them will become increasingly important. Fruit quality, particularly for the European market will remain of major importance and other factors such as social and environmental standards will likely also rise in stringency and scope in addition to food safety, and traceability. This is likely to mean that small producers will be excluded from these markets. Because audits and certifications are too expensive for small producers, the packing houses have started to provide joint-certifications. The packers pay for field certification, but the certificate is issued jointly under their name and the grower's, which might limit the grower's ability to sell to other packer-exporters. Thus the exporter assumes the assurance of supplies in return for their investment. However, a grower can have more than one certificate, subscribed jointly with other export/packer firms. Thus in the end small producers may actually have some flexibility in choosing who they deal with. Since high quality mangoes are not in abundant supply, they exporters for now are willing to make the effort and bear some risk with many small farmers. But it is uncertain that this is a feasible long term situation.

183. What can be done to limit small producer exclusion? Some suggest that the government could help in establishing New Generation Cooperatives –which resemble firms and which might eliminate non value adding intermediaries and improve their welfare. Political as well as financial support to face quality

issues as well as managerial and technical assistance is however needed. Independent management teams which can handle the administrative and commercial part of the business may need to be financed in the interim until its members are able to do so.

184. Economies of scale and good fruit quality could make these large cooperatives attractive partners for packing houses–exporters. If they are also able to finance their packing facilities and integrate their activities through the export stage, the operation could become competitive and sustainable without need of public subsidies once a revenue generation has proven the set-up can work. One limitation reported by exporters is that Peru is reaching its limit for mango export volumes, given the costs of logistics—transport costs are in particular higher compared to those of its competitors, Ecuador and Brazil.

South Africa: Meeting the challenges of a changing competitive environment

185. South Africa has been exporting fruit to Europe for over a 100 years and its fruit sector is a multi-billion rand industry contributing directly and indirectly to the economic well being of the country. Primary commercial agriculture contributes about 3.3% to GDP of South Africa and accounts for approximately 7.2% of formal employment. With forward and backward linkages the agro-industrial sector generates accounts for about 15% of GDP. The GDP multipliers for a certain subsectors of the fruit industry are greater than 1. For instance a 1 rand increase in out in deciduous fruit or citrus increases GDP by 1.7 rand and 1.4 rand respectively. This makes the fruits sector's contribution to South Africa's economy an important one.

186. There are approximately 61000 large commercial farms covering 82 million ha. In addition, there are some 240000 small commercial farmers supplying local and regional markets. Some 1-3 million rural householder produce to meet their own needs and another 3million in communal areas of the former homelands produce food primarily to meet family needs.

187. South Africa's agricultural sector can be described as a dualistic one: an advanced commercial sector and an underdeveloped, black emerging one coexisting. Despite many efforts by government, South Africa has remained characterized by racial distortions in the distribution of and access to wealth. Factors such as the lack of access to land, water, markets, finance, communication systems, education as well as skill development facilities, information and market opportunities prevent Black South Africans from making substantive progress in farming. Given past history of the black population in South Africa, they are underrepresented in the agri-food sector and in the value chain. The policy objectives of Black Economic Empowerment are to break the cycle of skill deficit, poverty, low rates of investment and underdeveloped markets and lagging rural development. Meeting the challenges for rural black population will require substantial effort both by private and public sectors. In the fruit export sector the constraints internal to emerging blacks are coupled with general difficulties facing the sector as a whole at present.

188. The fruit export industry is now facing a number of national and international pressures which could undermine its economic performance and hence its contribution to the overall growth. Three main challenges to the sector are: a growing concentration in export firms, changing consumer demands with increased emphasis on food safety, quality and environmental attributes and increasingly competitive world markets with major competition coming from Latin American producers.

189. A major change since the deregulation of markets in 1997 have been the increased integration and transformation of the global value chain through which South African fruit producers export. The average size of players has increased and their number decreased. This has resulted in the top 10 exporters accounting for over 90% of exports, even though some 300 are present in the sector. There is a continual demand for new and improved cultivars which are linked to increasing quality and safety attributes. More stringent public and private standards along with the demand for increased information on production

processes in the chain are creating new challenges for producers and exporters. Many consumer-driven demand changes are being met with increased use of private standards developed at the retail level. In addition the past 20 years has seen the rise in competitors for temperate fruits to meet counter seasonal needs in North countries, for instance from Latin American countries that also benefit from weak currency positions.

190. Private product and process standards are seen as important elements of the changing economic landscape. New emphasis on environmental effects, as well as an increasing focus on costs and efficiency, is modifying behaviours in the sector with numerous consequences on all players.

191. The changes in the sector's economic environment coupled with increasing cost of imported inputs as well as the introduction of a minimum wage, an agricultural land tax have increased producer costs. These costs are in addition to fixed investment costs necessary to maintain access to markets. In addition a Broad Based Black Economic Empowerment charter was introduced that may alter the face of South Africa's fruit industry.

192. About 60% of fruit production is exported and conformity with different public and private standards is part of normal business practice. For the 40% of output sold in domestic market increased use of private standards for quality, safety and environmental attributes are also increasing. Thus multi-attribute standards are becoming the hallmark of all markets.

193. The fruit export sector with its long experience and reputation of supplying quality and safe products is constantly upgrading and exerting pressure on itself to improve its offering in terms of products and logistics to. With the rise in concerns for food safety but also environment and ethical-social concerns, producers and exporters have to adapt their practices to meet these demands.

Institutions and associations

194. To meet the evolving demands of the market the government and fruit industry have cooperated over the decades and have recently adopted new requirements and guidelines for the sector. A Quality Assurance System for fresh produce exports includes mandatory food safety regulations to ensure compliance to changing international food safety regulation. The National Regulatory Service (NRS) ensures that exports do not exceed the MRLs of importing countries; keeps record of chemicals used in spray fumigation programs and post harvest treatment and monitors through testing of samples and quality control. The Department of Plant Health has also established a special markets programme for key markets, US, China, Japan, Korea, Mexico, New Zealand, Israel and EU so that the South African exports meet the import protocols in terms of safety and quality.

195. The NRS also undertakes audits of fruits for compliance of MRLs, for which controls begin at the farm level. If MRLs are non-compliant the consignment is recalled and the second one cannot leave the country before the testing results are satisfactory. Testing for quality purposes at the farm and pack house level can however be done by private labs. Sampling methods vary and are often product and destination specific. For instance for those destined to the USA, the USDA requires that every box be inspected but has its own inspectors in South African ports. Traceability for food safety purposes is organized around the Food Business Operator codes so that each player in the chain can be identified by this code. Quality inspection is undertaken by the Perishable Product Export Control Board (PPECB), which controls all exports of perishable products, of which 90% are fruits and 5% vegetables. It is mandated by the Department of agriculture to carry out mandatory regulations and standards and offers inspection services that are ISO 9001 certified. It does not develop new standards as these are set either by exporters or

commodity boards. It also administers the Pesticide Initiative programme (SA-PIP) to assist producers to comply with EU regulations. The PPECB is not government funded but rather generates its income from services it provides to the sector in terms of certification and inspection.

196. Industry organizations are important in informing industry players about changing demands in international markets, these include the fresh produce exporters Forum(FPEF) and their product specific associations- Deciduous Fruit Producers' Trust(DFPT), South African Table Grapes, (SAT), South African Avocado Growers' Association(SAAGA), etc… These associations represent their sector of fruit industry and undertake to assure and develop market access, provide technical assistance, collect, and disseminate industry information, undertake marketing and promotional activities as well as contribute to managing R&D programmes.

197. South African regulations and mandatory standards regarding food safety are demanding for both exporters and growers, who have the responsibility to comply with requirements for pesticide use and application. In this they must keep records of chemical application both in pre and post harvest period and provide this to authorities upon request and verify the MRLs with their importer or agent in the relevant country as well as the registration and re-registration of processes of pesticides within South Africa and importing countries and inform NR of rejections by importing countries concerning residues.

198. In addition to these mandatory requirements are the private standards. What are the challenges and constraints that the private standards present to producers and exporters? The results of interviews with growers and exporters of fruits help to clarify these as well as provide some understanding of the operation of the sector in South Africa.

Exporters

199. The firms interviewed exported a variety of fruits including apples, pears, table grapes, oranges, mandarins, avocadoes among other fruits. All had been operating for less than 10 years except one that has operated since 1905. The value of exports ranged from 40 million to 8 billion rand with principal markets being the EU, USA, Far East and Middle East. There is more specialization in market destination than before but generally the larger the firm the more destinations it handles. All firms large and small dealt with a variety of fruits. Since different fruits are produced in different regions exporters generally source from different parts of the country and often have regional offices in principal sourcing areas.

200. Selection of growers is based on capability to keep record, business attitudes, variety grown and output capacity. Technical assistance and management advice were most common form of assistance provided by exporters to growers. Often this involves linking specific demands from a client with a farmer.

201. The exporters noted that there has been a consolidation on supply side, with fewer players in the chain than in the past. Costs are being cut to become more efficient. Retailers prefer to deal with only a few exporters or producers and this is also affecting the industry structure. There is an increasing demand from large efficient fruit producers to exporters to share in the risks involved for producers with the consignment marketing arrangements or to be side stepped by directly exporting on their own. But exporters are also forward integrating and one exporter reported being a category manager for a retailer. Interestingly a number of exporters suggested that the smaller firms might have advantages in the market in that they are more flexible to demands, but not in meeting the standards.

202. Those interviewed were generally satisfied with the overall level of infrastructure and public services available to the sector and noted that these were impeding their market access. Some dissatisfaction was expressed with respect to the capacity of the port system. The majority also suggested

that laboratory testing facilities could be improved in particular at the government laboratories, though that the private laboratory capacity for soil and leaf testing is adequate.

203. A greater focus is now on international standards, voluntary and mandatory; many of these are costly to integrate into the supply chain. With a changing economic environment there has been an increased emphasis on credence type attributes often linked to production processes including labour and social conditions. One exporter Capespan has established a social investment programme, called Thandi, www.thandi.com whose aim is to empower farm workers and establish new black ventures in the fruit industry. The emphasis is on developing farm skills and assisting in the consequences of land reform. Output under this programme are certified Fair Trade.

204. The cost implications of private standards were raised by all those interviewed. In particular complaints were voiced about duplication in certification for the same set of attributes. Quality nonetheless remains the important attribute for fruit exports with food safety as a very close second. Food safety was a fundamental requirement for export market participation. Most firms were positive in their capacity to meet the food safety requirements and traceability.

205. All eight exporters interviewed indicated that their buyer required specific private standards schemes. These are shown in Annex Table II.3. All were required to be certified EurepGap, 6 out of 8 needed HACCP and 2 required SA8000, whereas ISO9001 and 22000 were required only for 1 firm each. In terms of compliance with private standards certification and yearly audits take place. Only those growers or exporters who physically handle the fruit are certified and pay the cost of compliance. Overall these certification costs are less than 3% of their turnover.

Annexe Table II.3. Number of exporters per private standard scheme required by their buyers

Organic labels:	3
EUREPGAP	8
HACCP	6
IFS	3
ISO9000	1
SA8000	2
ISO22000	1

206. The greatest difficulties in complying with the requirements were: record keeping by growers, fertilizer and pest management by growers, lack of a market oriented mindset, costs of certification, costs of audits for smaller growers and management of SPS-regulatory requirements. Traceability requirements were often found to be difficult to meet because of grower resistance to implement and comply and the cost effects of certification and auditing. However, regulations on chemical residues-MRLs, were regarded as an important stumbling block in market access.

207. Difficulties are often exacerbated with private standards due to the type of evidence needed to prove compliance. However the fact that standards were similar across countries was viewed positively and this all the more so where these are harmonized.

208. It is interesting to note that all were well aware of and had seen copies of the different standards--EurepGap, Agricultural Product Standards act, HACCP regulations-dept. of health act 54, and some have even seen EC 178/2002 . In cases where shipments or requirements did not meet the standards the main reasons given were: incorrect temperature regimes, improper handling of fruit and packaging problems.

209. Operating in this environment means that firms must become more competitive in their performance compared to other exporters and to shape the industry developments. Efficiency and standardization in the supply chain has also generated efficiency and a cost reduction emphasis in logistics. With the development and extension of ICT there is greater flow of information, which provides a way to control risk. In this area, producer associations provide a key link between markets and exporter and producers.

210. With respect to infrastructure and public services the exporters were generally satisfied though

Growers

211. Fourteen growers were interviewed. The larger ones had their own pack houses and others used those of nearby growers. Farm sizes ranged from 25 to 1700ha and most have expanded the area under fruit production in the recent period. The majority of those interviewed had been in the business for over 8 years (2-60 year range) and the share for the local market ranged from 15 to 40%. All were connected to the internet and the number of permanent employees ranged from 6 to 400, however seasonal labour can double or triple this number. With the introduction of minimum wages growers have been reducing labour input but at the same time they provide in kind benefits such as housing, schooling, transport or medical care.

212. As in the case of exporters there were no major complaints about infrastructures or services. Periodic blackouts were however of great concern to local fruit growers due to cooling systems as well as limitations in port capacity.

213. Growers either sell directly or indirectly to major supermarkets, such as Aldi, Tesco, ASDA,Waitrose, Ahold, Coop, Migros, Carrefour and locally to Woolworths and fresh produce markets. The large forward integrated producers sell to their representatives in markets like the Far East and directly to European retailers. In the latter case they have special retail supply contracts. The larger more integrated growers were more satisfied with their buyer-supplier relationships. In contrast the smaller producers are more dependent on intermediaries in the value chain and this increased transactions costs and incurred risks if the downstream players were inefficient, impeded the flow of information and/or were unable to bargain well for prices and delivery conditions. These can often constrain their ability to meet buyer requirements.

214. Volumes and delivery times are considered important requirements in selling, however buyers do often alter initial orders prior to delivery putting added pressure on growers to market surpluses not originally foreseen. These usually end up in regional or local markets and receive lower prices.

215. In general, growers are informed about buyer requirements via an overseas office/email/fax. Most indicated they are properly informed about these. Concern however was expressed about requirements of private standards which often have little regard for local circumstances and result in increased costs of implementing and maintaining the schemes. Annex Table II.4 provides an overview of the compliance with private standard schemes of those interviewed. Over 75% are compliant with EurepGap and 36% with BRC, the latter is used where some minimal transformation and packing are involved.

Annex Table II.4. Overview of compliance with private standard schemes for the interviewed growers

Private Standard scheme	% percentage of compliant growers
Organic labels	14%
EurepGap	79%
*S*afe Quality Food-SQF1000;	7%
BRC (British Retail Consortium)	36%
IFS (International Food Safety)	7%

216. While most believed that they comply fairly well with required standards, compliance with EurepGap and SPS requirements were the main issues of importance to them. Use of chemicals and their application and traceability were the most difficult to follow. Most growers have had to invest in chemical storage, waste disposal, toilets, to meet private standards requirements.

217. The following areas were signaled as presenting difficulties for growers in terms of standards:

- Food safety: MRLs , hygienic issues at harvest, microbial compliance, registration of pesticides;
- Testing: laboratories in South Africa are less advanced in procedures;
- Food quality: variable weather conditions often affect quality;
- Record-keeping: costs of record keeping and the non practicality production unit codes-(PUC), training personnel in their use and at pack house;
- Labour Safety and hygiene: AIDS, and hygienic mindset of farm workers and recognition of influenza symptom.

218. Audits were regarded as vital and are conducted once a year at and approximate cost about 3500 ZAR per audit. These procedures often helped them to increase efficiency in using chemicals, spray procedures and hygiene. Compliance did not result in greater profitability or increased demand but was viewed as a prerequisite to entering the market.

219. Larger growers do better in meeting the varying set of regulations and private standards than do small scale holders. Forward integration, economies of scale, commitment to quality, good marketing and farm management are regarded as strong points in meeting standards by South African fruit growers.

220. Costs of compliance are also an important component in determining compliance and these depend upon the initial conditions. Thus a new bar coding machine can cost 1 million Zar and a pack house upgrade 170000ZAR, and workshop upgrade of 120000Zar for EurepGap compliance is economically significant for most growers. In addition to the periodic updates there costs associated with audits and certifications. Estimates, derived from several citrus farms in Eastern Cape, are in order of 4 % of export sales, but if foregone trade opportunities are included this rises to 10% at times.

221. Inflexibility, low productivity and insufficient labour and management skills and outdated machinery and land claims impede the ability of growers to comply with standards. Small farms often have difficulty in meeting farm technical requirements, management capacity and infrastructure provision. These weigh heavily on their capacity to meet private standards and mean that they are likely to be excluded from the value chain.

222. One small merging grower suggested that special markets should be identified and analysed and these should be the target of emerging South African farmers. He also suggested that agreements be reached with importers to promote them as preferred suppliers. But these markets should not be characterized by extensive mandatory or voluntary standards and should be small to medium sized. This approach could provide for gradual upgrading of farms and farmers. Enhancing skills and the knowledge base of the emerging sector with regard to exports is fundamental as is avoiding risk and costly initial investments necessary to supply to high value western markets.

ANNEX III

Exporter Interview Guidelines

These are to be modified in function of country and product.

Exporter:
Name
Position:
Contact: address
Email
Telephone
Fax
Date:
Products:

I BACKGROUND INFORMATION

1. Export firm	
Which products do you export?	
How many years have you been exporting agricultural produce/products?	
How large is your firm in terms of annual sales?	
How many employees do you have?	
Are you a local firm?	
What is your location? Distance to producers?	
How rapidly has your firm grown over the past 3-5 years?	

What is your expected growth over the next 3 years?	

Has recent firm growth been due to new buyers / importers or to increasing sales to established customers?	.
Do you plan to increase the number of customers in a given market or increase supplies to current buyers / importers?	
How do you acquire new buyers/importers? [Direct contact, internet, referrals, and government marketing agencies?]	
2. Market / buyers	
What are your main export markets for <product>?	
Who are your main buyers/importers—by final destination firm type? [Please identify these by name and provide a contact point via telephone, email or post. ESSENTIAL!]	
How long have you been dealing with these buyers?	
How would you describe your seller-buyer relationship? (level of cooperation)	
To which buyers are you the preferred supplier and on what basis?	

II EXPORT SUPPLY CHAIN

(Can you briefly describe the steps in the supply chain for <product> from producer to	

the retailer or manufacturer?) Which part(s) of the value chain is your company involved in / responsible for.	
What have been important changes in the supply chain in the past 5 years? Over the past 10 years?	,
What has this meant for your ways of doing business with export markets?	
How important is the role of management capacity for success in participating in the export supply chain?	
Can you identify areas or tasks where management skills are fundamental to your success as an exporter?	
How can small (emerging) firms effectively compete with larger firms, in regard to management procedures?	.

Information and communication

How are you informed of the product / process requirements and delivery / logistics specifications by <importer/buyer>? (Email, telephone, mail, on site visits by buyers).	
Are changes frequent? [1X/ year, 2X /year, 3X/year, continuously]	
Which of the requirements are most frequently changed? Are these changes costly?	
What are the costs (direct, indirect) for keeping informed? (information cost)	
Does the government play a role in assisting	.

firms in this task? What role? (e.g. such as export marketing agencies)? What is the role of industry organizations in these? (producer or exporter associations?)	

III PRODUCT AND PROCESS REQUIREMENTS (PRODUCT, IMPORTER, OECD COUNTRY)

We would now like to ask about the private sector process and product requirements and procedures you use to satisfy these. (possibly more product/country combinations!)

Product: **Importer/ buyer**…… **(OECD) country(ies):** Western Europe……	
Can you first briefly describe the voluntary product and process requirements for <product> by importers / buyers? Ensure that the requirements associated with the following are covered: [only if explicitly differing with an implemented standard scheme!!]	
Quality (physical)	s.
Chemical Inputs	.
Minimum Residue Levels	
Testing procedures	

Food Safety-production and post harvest requirements	.

Record Keeping and Traceability	.
Labour hygiene	
Safety conditions	
Environmental conditions (waste management)	
Which of the above requirements are most difficult for you to meet and why?	
Is it a weakness specific to your firm or to all exporters / producers?	
What strategies have you employed to ensure your <product> complies with these? Where these successful?	
Can you rank the importance of these requirements for exporting to this OECD country / OECD countries?	

What is the main difference regarding the mentioned voluntary requirements between importer / retailer / wholesaler / manufacturer or country?		
Private standards Schemes		
Are you required to demonstrate that you product and production process follow any of the following schemes:	Yes	No
Organic label,		
EurepGap,		
SQF1000 (Safety Quality Foods),		

HACCP-dutch,		
IFS (International Food Safety),		
ISO 9000,--quality assurance control,		
ISO 14000 –environmental quality control,		
SA 8000-Social Accountability,		
HACCP-Codex Alimentarius,		
ISO 22000-food safety		
What other private sector schemes, if any, are required for export?		
Are these schemes product, importer or country specific? [Specify]		
Compliance (if applicable, please be product specific)		
Who certifies compliance with these schemes? [whom for which scheme?]		
Who audits the compliance with these schemes? [whom for which scheme?]		
Please identify the 3 most difficult elements in complying with the schemes	-	
How critical are these difficulties to the buyer / importer?		
Capacity (if applicable, please be product specific)		
Do you consider your firm's ability to meet product quality (physical) standards demanded by importers / buyers adequate? Why?	.	
What aspects of product quality capacity are strongest? [compared to other companies] What would you consider to be your major weakness in meeting product quality?		
Can you identify 2 specific areas which have made your ability to meet the demanded		

quality difficult?	
What are you doing to remedy this?	

Do you consider your firm's ability to meet product (voluntary!) food safety standards adequate? Compared with other firms?	
What aspects of meeting voluntary food safety standards are strongest? Weakest?	
Can you identify 2 specific areas which made compliance with voluntary food safety standards difficult?	
What have you done to remedy the problems?	
Do you consider your firm's ability to meet voluntary traceability requirements adequate?	
What aspects of meeting voluntary traceability requirements are the strongest? Weakest?	
Can you identify 2 specific areas that have made traceability implementation difficult?	
What are you doing to remedy this?	
Do you collaborate with other exporters to meet voluntary product requirements? What is the role of industry organizations in these?	
Are there other difficulties in meeting voluntary requirements you wish to describe?	
Do these also apply to other exporters?	

To what extent are these problems due to infrastructure or institutional deficiencies?	
Are you satisfied with the available capacity of your:	
telecommunication systems,	.
energy supplies and stability,	
laboratory testing facilities,	
Variety innovation programmes,	
Transportation systems: roads / rail / air / ports	
What other areas could be improved?	
Does your firm size place you at an advantage or disadvantage in accessing OECD markets?	
Have you ever seen one of these (or similar) documents? (where?, how?): [show docs]	
a. Government export standards on	
b. Government local & import standards on……	
c. Eurepgap Regulations on fruit and vegetables	
d. HACCP Regulations	
e. Regulation 178/2002 (food safety)	

f. National food safety or hygiene regulations	
Are you aware of the general content of these documents?	

IV MONITORING PRODUCERS

How many small producers do you work with?	
Has the number of small producers s increased or decreased in the past 5 years?	
Are you planning to increase the number of out-growers in the near future?	
What is their average size?	
Have you decreased the number of outgrowers in the past 5 years? How many did you have in 2000 ? How many do you have now compared to 2000?	
Why have you decreased the number? (be specific –please circle) High management or transaction costs? Failure to meet quality requirements ? Failure to comply with private standards? Failure to keep records of chemical applications? Failure to meet output volumes?	
What is their size? Average estimate What percentage is less than .5 ha. Less than 1 ha	

What percentage is less than 2 ha What percentage is above 3 ha? What percentage is above 5 ha?	
What percentage of exports are from these out-growers?	
Could you describe briefly your steps in identifying those producers which can satisfy the requirements of your buyer / importers?	
Which factors besides standards are important in your choice of producer?	
How do you communicate the <importer/buyer's> requirements to the producers?	
How do you manage their fulfilment of product and process requirements? For instance, do you monitor them regularly yourself or do you use 3rd party monitoring, self-monitoring?	
Do you assist in record keeping? Or Does the small farmer do it ?	
Do you supply and apply the needed chemicals - pesticide or fertilizer ?	
Do you provide them with agronomic assistance, which chemical, how much and when ?	
Who pays for technical assistance for record keeping? agronomic assistance? or chemical application? Can you provide an estimate per hectare and per harvest?	
How much does it cost you to manage a small producer in terms of record-keeping,	

chemical application, quality control on average? This represents what percent of price received by you as an exporter?	
What is price received and how much is supplied to you?	
Do you assist growers to meet the range of voluntary product standards through technical assistance, management advice or in other? Please describe the nature of the assistance.	
Do you finance any of the following through loans : (express as a % of total cost) toilets, hand washing facilities chemical storage changing facilities cooling post-harvest facilities	
Do you finance irrigation, small access roads trucks Other upgrading of the farm operation?	
Do you finance audit or certification costs? Are these deducted from final sale price?	
Do you finance a technical assistant: Are these deducted from final sale price?	
Can you identify 3 requirements that are most difficult for producers to meet? Why?	

V CONFORMITY ASSESSMENT PROCEDURES: AUDITS AND CERTIFICATION

What documentation on conformity with voluntary product standards are required by your buyer / importer?	
When shipping to different importers, does each require a separate audit?	.
How important are audit and certification costs compared to overall value of exports? [<1 %;< 3 %;< 5%]	
Have you ever had a shipment refused for failure to meet product or process requirements?	
Had the product been audited / inspected? By whom? (apart from PPECB)	
If refusal occurred upon arrival, what was the reason? [Attempt to identify failures: food safety, delivery timing, quality]	
Can you identify the causes of the problem?	
Were the goods sold to other buyers?	

VI TRACEABILITY: TRACKING AND TRACING

What steps are required to fulfil the traceability requirement? [Please describe these in as much detail as possible—criteria needed to be certified or reference to a given document or scheme.] If any, what are the constraints?	
What are the main differences in traceability requirements across types of buyers? [retailers / importers wholesalers or countries]	
Has record keeping at the producer level been a major problem when dealing with (emerging) small or medium growers?	

Does the traceability requirement imply that smaller producers are frequently excluded from export chain?	
Could traceability, or certain forms of traceability, constrain your market access to OECD countries? (in case a implemented standard scheme doesn't specify this aspect!) [If export destinations vary, it is useful to summarize requirements by type of importing firm and country]	

VII VALUE ADDED ACTIVITIES

What are your main value-added activities for <product>?	
Which of the following activities do you undertake:	
post harvest cooling,	
washing	
sorting	
cutting	
packaging	
labelling	
What (additional) requirements are placed on these activities by buyers / importers?	
Would you like to increase your value added activities to export markets and if so in what? Why? What investments need to be made?	

Can you identify 2 or more weaknesses which could constrain your value-added activities,	

Are any government agencies, such as those of commerce / trade / food assisting firms in improving market access for value-added activities? Are there any industry organizations involved in this? How is this being done? Do you consider the efforts to be successful?	

VIII LOGISTICS: POST-HARVEST HANDLING, STORAGE AND TRANSPORT

Are you satisfied with your capacity to deliver on time specified quantities of <product> which meet demanded requirements?	
In getting the <product> from farm to final destination, what are the most difficult logistics requirements to satisfy on a regular basis: post-harvest handling, cooling, pre-shipping storage, processing and transport? [rank them]	
What have you adopted to overcome these difficulties over time?	.
Do requirements in this area change frequently?	-
Have you been required to adopt specific logistics technologies for your importer / buyer?	No
What are the costs and benefits of adopting it?	-

IX DIFFERENCES WITH GOVERNMENT STANDARDS

Does the importing firm explicitly differentiate between the government regulations and private standards in defining their requirements?	For most European destinations, yes. The private standard schemes are more stringent in most areas.
How do voluntary process and product requirements compare to the basic government regulations regarding sanitary and phyto-sanitary mandatory requirements? Are they more stringent? In what way? (examples)	

X SUPPLY CHAIN BEHAVIOURS AND STRUCTURAL CHANGE

What is the effect of emerging black-farmers on the industry? On the export supply chain?	
Has the number of exporters increased or decreased over the past decade? What has happened to their average size?	.
What share of the market do the largest 4 firms account for in your estimation?	
In your opinion, what will be the level of integration between production and exports in the future? For all markets and products? What other significant characteristic to do you forecast for the industry?	
Please comment on any additional	

issues which you feel are important for your production capacity and market access.	

Producer Interview Guidelines

These are to be modified according to country and product

Farm:
Name:
Position:
Contact:
Date:
Products:

I. BACKGROUND INFORMATION

Farm description

1. Location	
What is the distance to the main road?	
What is the distance to nearest buyer, packer or trader?	
2. Size	
How many hectares does your farm have?	
What is the share per product	
Have you expanded area devoted to <product> in the past 3 years?	
Have you expanded the total area of your farm in the past 3 years?	

3. Ownership	
What share of the land is owned?	
What share is rented?	
4. Buildings	
Please list your buildings, machinery and equipment.	

Labour

How many family members work on the farm including you?	
Full-time? Part-time?	
Do you have hired labour? If so, how many persons?	
Males: full-time / part-time.	
Females: full-time / part-time.	
What are their wages?	
Do you provide them with other benefits such as housing, transport, schooling, or medical care?	

Public infrastructure and services

1. Water	
Do you have sufficient access to water?	
Do you irrigate your land? What share?	
What are the cost / ha?	

2. Energy

Do you have access to electricity?	
Is the supply regular and reliable or do you have 'brown outs' or 'black outs'?	
What are the costs?	
3. Telecommunications	
Do you have access to telecommunications facilities? Which?	
Are these reliable? If no ,why?	
4. Roads	
Are road conditions in your region adequate for transport purposes?	
5. Testing facilities	
Are reliable laboratory testing facilities and services available for your products?	
Are there any (potential new) services or improvements in current services and infrastructure that may enable an increase in your farms output capacity (production)?	

II. PRODUCTION AND MARKETING

1. Production	
What is your annual production?	
What are your average receipts?	
How many years have you been growing <product(s) >?	

What share is produced for the local market? [Small farmers: What share is produced for home consumption?]	
2. Marketing	
What does your value chain look like? In which activities of the value chain are you involved?	
What are the names of your (main) buyers? Is it a local firm or cooperative or foreign firm? How long have you been dealing with this buyer(s)?	
Do you have long term buying arrangement with any of these buyer(s)? Are these oral agreements or written contracts?	

If you have written contracts: what are the general specifications: minimum quantities, delivery times and product / process requirements?	
Are prices written into the contract? How are these determined?	
Are minimum quantities and fixed delivery times an important requirement for selling to <buyer(s)>? [How important on a scale from 1 tot 10]	
Does any of the <buyer(s)> ever alter	

quantities just before delivery? Are you able to meet eventual increases in demand at a given quality?	
If quantities demanded are decreased, where do you sell your product? Another buyer? Or the local market?	
Is ability to communicate rapidly with the buyer important for your firm / farm operations?	
Could / Does access to internet facilitate the marketing of your product and improve its price for?	

III. PRIVATE STANDARDS

We would now like to discuss the role of private product and process standards/requirements. These are in addition to any other government regulations that may be legally required.

Information and Communication on standards

How are you informed about <buyer(s)>'s required product or process requirements?	
How do you keep informed of changes in these?	
Are requirements ever changed without being informed sufficiently in advance? Could you give a specific example from recent experience?	

Is the ability to properly communicate, important for your ability to meet the buyer(s) expectations about product supplies? Did this ever fail?	
Would / Does access to internet facilitate your communications with buyers?	
Are farmers consulted in setting product or process requirements? Could you maybe give an example?	

Do you feel that requirements are set without regard to producer capacities to fulfil them? How could this be remedied?	
Have you ever seen one of the following (or similar) documents: [show docs]	
a. Government export standards on apples, pears.	
b. Eurepgap Regulations on fruit and vegetables	
c. South African food safety Standard for primary production areas (GAP)	
d. HACCP Regulations (Dept. of Health, Act 54 of 1972)	
e. Agricultural Products Standards Act (NDA Act 119 of 1990)	

f. EC Regulation 178/2002 (food safety)	
g. South African Food Safety Standard checklist (primary, on farm pack house facilities)	
Are you aware of the contents?	

Product and Process requirements

We would now like to discuss the requirements for <name of buyer a>, of < product>. The questions also seek to understand your capacity to meet the demands of your buyer.

1. Buyer (name: a CFY **.b……c……d……)**	
Are you generally satisfied with your capacity to meet product requirements of <buyer..>?	
How do you think you perform in the areas of product quality, food safety and managing delivery times and quantities?(benchmark)	
Could you briefly describe the main issues around product and process requirements?(if not specified in a private standard scheme!)	
Food quality	
Food safety	
Testing	

Record keeping / traceability	
Worker safety	
Hygiene	
Environmental quality	
Other:	

Which requirements are the most difficult to satisfy and why (constraints)?	
To meet the requirements were you required to invest in buildings, equipment or other farm level infrastructures? [Prompt on input use, chemical storage, water use, waste materials and environmental quality]	
Among the requirements for food quality, specify 2 or more criteria that are often difficult and costly to meet? Please be specific about the actual difficulty.	
Among those for food safety requirements specify 2 or more criteria which are difficult and costly to meet for you.	
Among the requirements for record keeping / traceability, specify 2 or	

more criteria, which are difficult for you to meet.	
Among the requirements for labor safety and hygiene specify the criteria which are often difficult and costly to meet.	

Private standard schemes		
Does your buyer require that you conform to any private standards schemes, such as but not limited to		
Organic labels		
EurepGap		
*S*afe Quality Food-SQF1000;		
BRC (British Retail Consortium)		
IFS (International Food Safety)		
Dutch Haccp		
ISO- 9000 (quality control)		
ISO 14000 (environment)		
SA8000 (social accountability)		
Other:		
2. Retailers / manufacturers		
Do you produce for specific retailers / manufacturers? Are you a preferred supplier for them? For how long?		
Are you required also to meet any		

firm specific schemes, that is bilateral arrangements, with a major OECD retailer or manufacturer (see list)? If so which one.	

What are the main requirements of these schemes for:	
Food Quality	
Food Safety	
Record Keeping / Traceability	
Worker Safety	
Hygiene	
Environmental Quality	
What criteria of these are most difficult and costly to meet? Please specify.	
What delivery time and quantity requirements are also demanded of you by these firms? Please specify.	
How are prices set in these bilateral relationships?	
Are you required to meet more than one standard scheme at time for the same buyer / retailer / manufacturer?	

How to these standard schemes differ from buyer / retailer (country)?	
How do you manage the different sets of requirements? Do you have a specific system in place?	

[In addressing the constraints of the farm ensure that the following are discussed: physical infrastructure –public –roads/telecommunications and private including laboratory testing facilities and on farm equipment, human capital-management and technical training]
[In addressing the capacity to meet requirements: ensure that all functions of capacity are covered: control on inputs, pest/disease control, hygiene practices in production, harvest, shipping, monitoring, record keeping / traceability.]

3. Compliance	
What are the constraints on time delays between harvesting and shipping?	
To meet these do you post harvest storage facilities? Do these have cooling capacities?	
Have you ever had a delivery rejected because they did not meet the requirements? If so could you describe the case and what eventually happened to the product? What were the costs to you?	
What were the causes of not meeting the standard? What did you do to avoid the problem from recurring? [Try to find out whether	

failures occur in specific areas and with what frequency and the cause]	
How does your ability to meet requirements compare to that of other producers?	

Do you cooperate with other producers to enhance your capacity to meet food quality and food safety requirements? What is the role of PO's and government? Can you give examples of specific cases?	
Please identify your strengths and weaknesses in meeting the buyer requirements.	
What have you done to improve your weaknesses or increase your capacity in the past 2 years?	
What changes have you had to make to your methods of production and management to meet these? Please be specific. [Prompt in areas of quality, food safety, record keeping, managing delivery times and quantities.]	
What investments were you required to make? How costly were	

these?	

IV CERTIFICATION / AUDITS

We would like to ask about the audit and certification procedures you undertake for meet requirements of buyers.

How important is the audit and certification process for your product? [Scale 1-10]	
If applicable, what is the name of the audit or certification organizations you use? [per requirements, scheme]	
How frequently are you audited for which schemes?	
Please describe the audit procedure. [per scheme]	
Are there any other requirements for what are you audited? (outside these schemes)	

Has the audit procedure been able to help you identify problem areas in your production process and helped you to improve your operations? If so, in what ways? Please give an example from recent experience.	-

V. ECONOMIC EFFECTS OF STANDARDS

Do you feel that the product / process requirements have improved the profitability and efficiency of you farm operation?	
Has the capacity to meet the buyer requirements helped to increase demand and market for your products?	
Has your capacity to meet requirements consistently improved your price or contract conditions?	
What investments in equipment and buildings were needed to comply with the private standards? Please be specific (storage facilities, toilets/hand washing facilities, other) How costly were these?	

How did you finance these investments? Did you receive financial help from the government or from the buyer or NGOs?	
Do you plan to undertake any new mayor investments over the next 2 years?	
What changes in management procedures / structure were undertaken to comply with private standards?	

If private standards are primarily an export market requirement, their compliance may have stimulated exports. Has growth in such exports contributed to economic growth in the area and employment opportunities? (e.g. What are the multipliers?)	
Have they improved labour conditions or environmental quality?	
Is the need to meet multiple product and process requirements for your product a major constraint for market access?	
Would you prefer to have one unique or local standard for product characteristics such as food safety, environment quality, and labour conditions? (Why?)	
Do you feel that small / medium sized farms or cooperatives are more likely to be excluded from the export market for failure to meet private standards than larger farms / cooperatives?	
Is this due to difficulty in meeting the on farm technical requirements or is it linked to management	

capacity and infrastructure provision?	

VI. LOOKING FORWARD

Do you feel there is a role for government to assist producers to meet increasing product and production requirements of the private sector? Please identify three areas where government might assist producers in improving their capacities to meet private standards.	
How might the importing (or local exporting) firms be able to assist small producers and cooperatives in meeting product and process requirements?	
Please comment on any additional issues which you feel are important for your production and marketing capacity. Do you have any comments on the future of your industry?	