UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

THE IMPLICATIONS OF PRIVATE-SECTOR STANDARDS FOR GOOD AGRICULTURAL PRACTICES

Exploring Options to Facilitate Market Access for Developing-country Exporters of Fruit and Vegetables:

Experiences of Argentina, Brazil and Costa Rica

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Foreword

Latin America is an important producer and exporter of fresh fruit and vegetables (FFV). The region accounts for more than half of the value of fresh fruit exports from all developing countries. It exports a large proportion of off-season and tropical fruit (in particular bananas, avocados, pineapples, mangoes and papayas) to developed-country markets. Meeting food safety standards, especially maximum residue levels for chemical pesticides and fertilizers, is an increasingly important requirement for continued export success. Food safety is also an important issue from a national policy perspective, in particular in countries like Brazil where more than 95 per cent of production is consumed locally. The Government of Brazil has responded to these concerns, inter alia, by developing standards for integrated fruit production. Its National Institute of Metrology, Standardization and Industrial Quality, Inmetro, which is also responsible for accrediting certification bodies for third-party certification, attaches considerable importance to food safety standards for FFV. Apart from government regulations in importing countries and government-owned standards for good agricultural practices (GAPs) in some developing countries like Brazil, private-sector standards also play an important role in the market place.

Although not legally binding in a regulatory sense, private-sector standards are, de facto, increasingly becoming mandatory from a commercial, buying-power perspective. Several of these standards combine food safety standards with environmental health, and workers' health and safety requirements, which makes compliance a very tall order for developing-country producers and exporters. One of the reasons for this trend towards multidimensionality is that the standards aim to fulfil food safety objectives by encouraging environmentally sustainable production methods. While adjustment to these new requirements entails many costs, it also offers benefits in terms of fewer undesirable environmental and health impacts on producers as well as material and resource savings.

An increasing number of developing countries are attempting to better understand the role and implications of private-sector standards for access to export markets and are suggesting a more systematic discussion of this subject in the WTO Committee on the Application of Sanitary and Phytosanitary Measures (as reiterated by eight South American and African countries at the SPS Committee session in October 2006). However, there is a glaring paucity of empirical studies on the implications of private-sector requirements and appropriate adjustment policies. This monograph contributes to overcoming this gap.

The rapid development of private food safety and quality standards as a major determinant of access to the biggest and most lucrative global food markets undoubtedly poses a challenge to conventional intergovernmental discussions on food standards such as those that take place under the WTO SPS and TBT Agreements. Against this background, systematic dialogue on private-sector standards through UNCTAD's Consultative Task Force (CTF) on Environmental Requirements and Market Access for Developing Countries provides a much-needed platform for formal exchange between governmental and other stakeholders who normally are not involved in WTO debates. Inmetro was one of the strongest advocates for the creation of the CTF and hosted its inaugural meeting in June 2004.

Private-sector standards, such as EurepGAP (recently renamed to GlobalGAP), have increasingly important implications for FFV exports, including from countries in South and Central America. Whereas large producers and exporters in Argentina, Brazil and Costa Rica generally are able to certify their production directly and individually against the EurepGAP Fruit and Vegetables standard, this option tends to be very difficult for small and medium-sized producers.

Developing countries therefore need to explore other options to facilitate market access. For example, they can seek to promote recognition of national GAP schemes in export markets or, in their absence, the adoption of private ones. Due to the high costs involved in certification under private schemes,

particular attention should be given to the special needs of small and medium-sized producers. They require special treatment for obtaining such certification, such as group certification, the development of national interpretation guidelines and benchmarking of a locally developed GAP standard.

Locally developed standards offer the opportunity to take local regulatory, agronomic, social and other conditions into account, but a number of questions remain to be clarified: How can national GAP codes be designed to ensure that they reflect the interests of small-scale producers and domestic markets in developing countries? Are national GAPs gaining recognition in international markets? Does benchmarking allow developing countries to combine the benefits of a locally developed GAP standard with buyer recognition in international markets? What are the pros and cons of benchmarking vis-à-vis other (not mutually exclusive) options for EurepGAP certification? What factors would have to be reflected in a national standard that could be benchmarked? How can developing countries seek to influence private-sector standard setting?

This manuscript analyses these questions and other relevant issues based on case studies of national experiences in Argentina, Brazil and Costa Rica that were carried out by national researchers under the umbrella of UNCTAD's CTF. These were part of a project that has also been examining the relevant experiences of selected Asian and African developing countries.

The draft manuscript of this publication has been widely debated by some governmental and other stakeholders in Brazil. I hope this publication will facilitate similar dialogue throughout South and Central America, and also inspire thoughtful interregional debate.

Ensuring that the new requirements do not prevent the poorest countries and smallest producers from successfully participating in international horticultural trade will require concerted action on the part of governments, businesses, standard-setting organizations and producers. It is therefore urgent to build a constructive dialogue among all affected stakeholders for the exchange of information and national experiences. This book is a timely contribution towards that goal.

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Contents

List of tables, figures and boxes

Acronyms

ABPM	Associação Brasileira de Produtores de Maçãs (Brazilian Association of Apple Producers)
BRC	British Retail Consortium
CAFI	Cámara Argentina de Fruticultores Integrados, (Argentine Chamber of Integrated Fruit Producers)
CATI	Coordenadoria de Assistência Técnica Integral (Coordination for Integral Technical Assistance) (Brazil)
CB	certification body
CNP	Consejo Nacional de Producción (National Production Council) (Costa Rica)
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico (National Council for Scientific and Technological Development) (Brazil)
CPCC	Control Points and Compliance Criteria
CTF	Consultative Task Force on Environmental Requirements and Market Access for Developing Countries (UNCTAD)
EMATER	Instituto de Assistência Técnica e Extensão Rural (Company for technical assistance and rural extension) (Brazil)
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Company)
EU	European Union
EUREP	Euro-Retailer Produce
FAO	Food and Agriculture Organization of the United Nations
FDF	Fundación de Desarrollo Frutícola (Fruit-growing Development Foundation) (Chile).
FFV	fresh fruit and vegetables
GAP	good agricultural practices
GMO	genetically modified organism
GMP	good manufacturing practices
GR	general regulations
HACCP	Hazard Analysis and Critical Control Points
HS	Harmonized System
IBRAF	Instituto Brasileiro de Frutas (Brazilian Fruit Institute)
ICM	integrated crop management
INTA	Instituto Nacional de Tecnología Agropecuaria (National Institute for Agricultural Technology) (Argentina)
IFP	integrated fruit production
IFS	international food standard
Inmetro	National Institute of Metrology, Standardization and Industrial Quality (Brazil)
IPC	integrated pest control
IPM	integrated pest management
MAPA	Ministério da Agricultura, Pecuária e Abastecimento (Ministry of Agriculture, Livestock and Food Supply) (Brazil)
MRL	maximum residue level
NTWG	national technical working group
PIF	Produção Integrada de Frutas, Brazil
QMS	quality management system
R&D	Research and development
SEBRAE	Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Micro and Small Business Support Service)
SENASA	Servicio Nacional de Sanidad y Calidad Agroalimentaria (National Health and Agro-alimentary Quality Service) (Argentina)
SQF	safe quality food
STN	specific technical norm
TNC	TESCO Nature's Choice
TWG	Technical Working Group
WTO	World Trade Organization

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Argentina	Martin Babboni and Valeria Glusman (Argencert) and Dr. Jochen Neuendorff (Gesellschaft für Ressourcenschutz, GfRS, Göttingen, Germany)
Brazil	Paul Espanion (Instituto Biodinâmico (IBD)/Serviço Brasileira de Certificacões (SBC)), with the collaboration of Daniela Mariuzzo (ECOLOG Consultoria), Juan Rojas (SBC), Sergio Pimenta and Reinaldo Rodrigues (Instituto de Ecologia Aplicada) and Alexandre Harkaly (IBD)
Costa Rica	Bernard Kilian, Sustainable Markets Intelligence Centre (CIMS), with the collaboration of Lloyd Rivera, Markets Strategist (CIMS).

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I. INTRODUCTION

Background

The fresh fruit and vegetables (FFV) sector contributes significantly to developing countries' agricultural exports, and provides opportunities for economic and social development (Espanion, 2005; Lumpkin, Weinberger and Moore, 2005). Several studies (Humphrey, 2005; Pay, 2005; Vander Stichele, van der Wal and Oldenziel, 2006) indicate that over the past 25 years or so, many developing countries' exports of FFV have been growing more rapidly than their total agricultural exports, and that, within the FFV category, exports of non-traditional items have grown faster than those of traditional ones.

Several studies also point to the need to address some inherent risks of increased horticultural exports, such as greater health and environmental impacts (which may result from large-scale use of pesticides and water, often associated with commercial production of horticultural crops, or the bringing of new sites under agricultural production) and threats to workers' health and safety.

There has also been growing concern over the implications of public-sector regulations and private-sector standards in international markets, in particular for small producers in developing countries. For example, increasingly stringent legislation, such as the European Union's Plant Protection Directive (91/414/EEC) and amendments to Japan's Food Sanitation Law, are expected to result in lower maximum residue levels (MRLs) for pesticides and a reduction in the number of active substances that can be used in pesticides applied to specific crops exported to these markets (UNCTAD, 2006a). The growing use of traceability requirements also poses a challenge to producers and exporters in developing countries.

In addition to government regulations, private-sector standards are playing an increasingly important role in the marketplace. Many supermarket chains have formulated their own standards, either as individual chains or on an industry-wide basis. Private-sector standards are often even more stringent than government regulations. Some of them require compliance with the regulations of both the country of production and the product-related regulations of the country of destination, resulting in multiple food safety, occupational health and safety, environmental and, sometimes, social requirements. Private-sector standards as well as government regulations in importing countries, which are transmitted through the supply chain, oblige producers, either explicitly or implicitly, to apply specific production and processing methods to avoid environmental risks and manage quality and health issues.

One of the most relevant private-sector standards for FFV production and exports, in particular to the market of the European Union (EU), is the EurepGAP standard, a scheme for good agricultural practices (GAP) at the farm level, developed by EUREP, an association of European fresh produce retailers and importers (EUREPGAP recently changed its name and logo to GLOBALGAP; for more information see www.globalgap.org/cms/front_content.php?idcat=9&idart=l 82. Since the final drafting and editing of this manuscript was completed before the name change, the term EurepGAP has been used throughout the text).[1] This standard is particularly challenging for small producers in developing countries, and there has been concern that it may present considerable obstacles to their participation in FFV exports.

On the other hand, the implementation of GAP codes that reflect national development priorities and conditions can bring benefits to developing countries by promoting the production of safe and healthy foods, improving workers' health and safety, and reducing environmental impacts. The Food and Agriculture Organization of the United Nations (FAO) defines four pillars of GAP that apply to all scales of farming: (a) efficient production of sufficient, safe and high quality food and non-food products; (b) sustainable use of natural resources; (c) viability of farming enterprises and contribution

[1] The EurepGAP protocol defines the elements of good agricultural practices (GAP). It covers aspects such as integrated crop management (ICM), integrated pest control (IPC), quality management systems (QMS), hazard analysis and critical control points (HACCP), workers' health, safety and welfare, environmental pollution and conservation management. For more information see: www.eurep.org

to sustainable livelihoods; and (d) responsiveness to the cultural and social demands of society (He, 2005; Poisot, 2007). It has also been argued that GAP programmes can assist farmers and exporters in developing countries in meeting the regulatory and private-sector requirements of domestic and international markets. Several developing countries have been developing national GAP programmes, such as Brazil's Integrated Fruit Production programme (discussed in chapter III). Some of the main challenges in defining and implementing GAP programmes include ensuring that the interests of small-scale producers and domestic markets in developing countries are taken into account, and that public and private GAP initiatives do not burden farmers and exporters with multiple codes and auditing requirements (He, 2005).

As explained in chapter IV, the possibility of benchmarking against EurepGAP offers producers in developing countries the option to certify their production under a locally developed GAP standard (owned by a government agency or a private-sector entity such as a group of exporters) that has been recognized as equivalent to EurepGAP. A benchmarked national standard can take into account local regulatory, agronomic, social and other conditions. Garbutt and Coetzer,[2] the authors of this chapter, stress the importance of the possibility for interpretation of the EurepGAP criteria to fit local circumstances. They point out key benefits of a benchmarked national standard, including local stakeholder support (which can make GAP implementation more successful, widespread and cost-effective) and the opportunity to certify production under a single standard that has international buyer recognition, thereby overcoming the problem of having to meet a multitude of different buyer requirements.

It should be noted, however, that in order for a national standard to be formally recognized as eligible for benchmarking it must comply with *all* control points and compliance criteria (CPCC) as set out in the relevant EurepGAP standard. Garbutt and Coetzer argue that this "strict interpretation of equivalence" is necessary if buyers are to have confidence in the comparability of different standards. In addition, a national standard has to re-apply for benchmarking to take account of revisions of the EurepGAP standard.

The authors of the case studies on Argentina and Brazil (chapter III) argue that requirements of national GAP standards that are more stringent than EurepGAP may create additional obstacles to producers with an export interest. Moreover, benchmarking to EurepGAP could create additional obstacles to those producers, particularly smallgrowers, who are primarily interested in the domestic market, because certain EurepGAP requirements may not adequately reflect local conditions.

There is no "one-size-fits-all" solution for producers in developing countries who seek EurepGAP certification. Apart from benchmarking, EurepGAP offers other opportunities for achieving certification, such as direct certification, including group certification. National interpretation guidelines can also facilitate certification. Benchmarking is a viable option only if there are local public and/or private organizational structures to support FFV exports.

With a view to assisting developing countries in examining the challenges and opportunities arising from the EurepGAP standard and weighing the pros and cons of possible benchmarking of national GAP programmes, UNCTAD has been implementing the project, Reflecting National Circumstances and Development Priorities in National Codes on Good Agricultural Practices that can be Benchmarked to EurepGAP. This project, which is being implemented under the umbrella of UNCTAD's Consultative Task Force on Environmental Requirements and Market Access for Developing Countries (CTF),[3] focuses on the FFV sector. This sector has been selected because it provides many developing countries with opportunities for export diversification, poverty alleviation and rural employment; on the other hand, the implications of government regulations and private-sector standards (addressing food safety and other issues), in particular for small-scale farmers in developing countries, are a growing concern. The project pays special attention to the EurepGAP

[2] Nigel Garbutt is Chairman/President of EurepGAP and Elmé Coetzer is Standards Manager for FoodPlus GmbH, the not-for-profit secretariat of EurepGAP.

[3] The CTF was launched at a workshop jointly organized by UNCTAD and Inmetro in Rio de Janeiro (7-8 June 2004), prior to the eleventh session of the United Nations Conference on Trade and Development (UNCTAD-XI), which took place in São Paulo on 13-18 June 2004.

standard because of its increasingly important role in the marketplace (in particular for countries in South and Central America which export a significant share of their total FFV exports to EU markets) and because of its potential to contribute to the harmonization and equivalence of GAP standards (especially those of the private sector), including through its benchmarking option (see above). The EurepGAP standard also offers an interesting case study that helps the CTF in providing a forum where key private-sector standards can be discussed among a variety of stakeholders.[4]

The project has promoted national case studies as well as national and subregional stakeholder dialogues in South-East Asian countries (Malaysia, Thailand and Viet Nam) as well as in Latin American countries (Argentina, Brazil and Costa Rica). Case studies of selected African countries (Ghana, Kenya and Uganda) have also been carried out. These studies address a number of common issues from a trade and development perspective (paying special attention to the needs of small producers), including:

- The implications of the EurepGAP Fruit and Vegetables standard and other GAP programmes for key stakeholders (producers, exporters, governments);
- Options for taking into account national conditions and priorities in the development of national GAP programmes, whether or not benchmarked to EurepGAP; and
- Pros and cons of different options for EurepGAP certification (such as direct certification of individual producers, group certification and benchmarking of national GAP programmes) and the development of national interpretation guidelines.

This monograph presents a synthesis of the following case studies carried out in the Latin American region:[5]

Argentina	Martin Babboni and Valeria Glusman (Argencert, Buenos Aires, Argentina) and Dr. Jochen Neuendorff (Gesellschaft für Ressourcenschutz, GfRS, Göttingen, Germany)
Brazil	Paul Espanion (Instituto Biodinâmico (IBD)/ Serviço Brasileira de Certificacões (SBC)), with the collaboration of Daniela Mariuzzo (ECOLOG Consultoria), Juan Rojas (SBC), Sergio Pimenta and Reinaldo Rodrigues (Instituto de Ecologia Aplicada) and Alexandre Harkaly (IBD)
Costa Rica	Bernard Kilian, Production and Research Manager, Sustainable Markets Intelligence Centre (CIMS), with the collaboration of Lloyd Rivera, Markets Strategist (CIMS).

It also includes a study on the strategic concept of EurepGAP benchmarking and specific procedural requirements of the benchmarking process (Garbutt and Coetzer, 2005). Finally, it builds on presentations and discussions at a subregional workshop held in Rio de Janeiro, Brazil, on 8 and 9 December 2005 and an informal meeting organized by CTF and the National Institute of Metrology, Standardization and Industrial Quality (Inmetro) in Rio de Janeiro on 13 December 2006.

The monograph focuses largely on fresh fruit and vegetables and products involving only a minor level

[4] At the tenth session of the UNCTAD Commission on Trade in Goods and Services, and Commodities (Geneva, February 2006), participants encouraged the CTF to continue its efforts to facilitate a dialogue between public and private stakeholders on the impact of and adjustment to voluntary, private-sector-set environmental requirements. It was noted that work on the EurepGAP standard, as it relates to horticultural exports of developing countries, provides an interesting example. It was clarified that UNCTAD's work relating to EurepGAP codes of practice does not mean that it endorses any particular set of private standards. The importance of coherence between import regulations with respect to food safety and promotion of development was also stressed and it was suggested that UNCTAD continue to facilitate a constructive dialogue on this issue, bringing together the European Commission, EU member States, and public- and private-sector representatives of developing countries. See *Report of the Commission on Trade in Goods and Services, and Commodities, on its Tenth Session* (TD/B/COM.1/80, 13 March 2006).

[5] Similar monographs are being prepared on the case studies carried out in Africa and Asia as part of the same project.

of processing (i.e. Harmonized System (HS) Chapters 7 (vegetables) and 8 (fruit and nuts)).[6] These two HS chapters contain roughly the same products as the indicative product crop list annexed to the EurepGAP Fruit and Vegetables standard.[7] The statistics are based on the most recent information available from COMTRADE.

The remainder of this chapter briefly analyses some key aspects of FFV exports from Latin America, in particular Argentina, Brazil and Costa Rica, with special attention to the role of the EU market. Chapter II presents a summary of the findings of the country case studies. It also draws some conclusions and makes some recommendations. Chapter III presents a synthesis of the case studies on Argentina, Brazil and Costa Rica. The study on EurepGAP benchmarking is presented as chapter IV. Finally, the statistical annex provides additional data of relevance to the analyses.

Statistical analysis

Latin American FFV production and exports

Latin America is an important producer of FFV. According to the FAO, the region produced 123.5 million tons of fruit and vegetables in 2004, which represents some 12 per cent of total developing-country production (statistical annex, table A.1). This share has fallen from around 19 per cent in 1979-1981, largely as a result of the formidable growth of production in China, from an annual production of 65.7 million tons in 1979-1981 to 506.6 million tons in 2004, or 47.9 per cent of total developing-country production. If China were to be excluded, it would be observed that Latin America's share in total developing-country production has fallen only modestly.

Latin America is also an important exporter of FFV. In terms of value, Latin American exports of FFV in 2005 amounted to around $12.8 billion, or 43 per cent of the FFV exports of all developing countries. With an export value of $8.1 billion, fruit (HS 0803-0814) was by far the most important FFV category. Latin America is a major supplier of bananas (that account for 21 per cent of all FFV exports in value terms), other tropical fruit and off-season fruit to developed countries, including grapes, apples, pears, citrus fruit, melons, papayas, avocados, pineapples and mangoes. The value of the region's vegetable exports in 2005 was $4.1 billion and that of nuts $0.6 billion.

Mexico accounted for 36 per cent of Latin American exports of FFV (in value) and as much as 76 per cent of the region's exports of vegetables (with vegetable exports worth $3.1 billion). Exporters of fruit were more diversified, the main countries being Chile, Mexico, Ecuador, Costa Rica, Argentina, Colombia, Brazil and Guatemala (in that order). They were among the 15 leading developing-country exporters (table A.2).

A significant share of exports from many South and Central American countries goes to the markets of the EU and is therefore more likely to be affected by EurepGAP requirements. Latin American exports of FFV to the EU-15 were worth almost $3.3 billion in 2005 (table 1). Whereas 92 per cent of Mexico's FFV exports went to the United States (in value terms), around 41 per cent from countries in South America and 34 per cent from countries in Central America went to the markets of the EU-15. For South America, the share of FFV exports going to the EU-15 market was larger than the share going to the United States (29 per cent). Among the Latin American countries, the principle FFV exporters to the EU-15 were, in descending order, Chile, Ecuador, Argentina, Costa Rica, Brazil and Colombia.

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[6] In the statistics presented in this report, FFV is defined as HS Chapters 7 and 8 unless indicated otherwise. Trade information is generally based on COMTRADE, except for certain information on EU-15 imports, which is based on data from the EU Export Helpdesk. Some information presented in the country case studies is based on national statistics, where indicated.

[7] EurepGAP General Regulations Fruit and Vegetables Version 2.1-Oct04, Annex 7.11: EurepGAP Product Crop List.

Table 1. Latin America: Exports of FFV by principal markets of destination, 2005

	Exports ($ million)			Distribution of exports (%)				
	World	EU-15	United States	Total	EU-15	United States	Latin America	Other
Latin America	12 781.4	3 287.1	7 275.2	100	25.7	56.9	6.8	10.5
Mexico	4 596.2	91.3	4 245.0	100	2.0	92.4	1.4	4.2
South America	6 125.3	2 496.2	1 801.0	100	40.8	29.4	11.7	18.2
Argentina	1 023.6	462.9	74.4	100	45.2	7.3	25.2	22.4
Brazil	692.4	415.1	184.6	100	59.9	26.7	4.2	9.2
Chile	2 037.7	548.4	803.3	100	26.9	39.4	15.1	18.6
Colombia	576.7	330.3	197.8	100	57.3	34.3	3.8	4.6
Ecuador	1 207.8	482.7	300.1	100	40.0	24.8	5.5	29.7
Peru	426.0	161.3	216.9	100	37.9	50.9	3.1	8.1
Other [a]	161.2	95.6	23.9	100	59.3	14.8	12.8	13.1
Central America	2 059.9	699.7	1 229.2	100	34.0	59.7	4.5	1.9
Costa Rica	1 017.3	429.8	557.7	100	42.2	54.8	0.5	2.4
Guatemala	473.2	15.1	405.8	100	3.2	85.8	9.5	1.5
Honduras	230.7	30.0	188.5	100	13.0	81.7	5.1	0.2
Panama	262.6	224.2	35.5	100	85.4	13.5	0.1	1.0
Other [b]	76.1	0.5	41.7	100	0.7	54.8	39.2	5.3

Source: COMTRADE

[a] Bolivia, Paraguay (2004), Venezuela and Uruguay.

[b] El Salvador (2004) and Nicaragua.

Exports of Argentina, Brazil and Costa Rica

Argentina, Brazil and Costa Rica are significant exporters of FFV, in particular fruit (off-season fruit from Argentina, tropical fruit, in particular bananas and pineapples, from Costa Rica, and both off-season and tropical fruit, from Brazil). Argentina and Costa Rica exported over $1 billion each of FFV in 2005, while Brazil exported around $700 million. However, if processed fruit and vegetables (HS chapter 20, preparations of fruit and vegetables) are also taken into account, Brazil's exports amounted to around $1.9 billion, while those of Argentina and Costa Rica were around $1.5 billion and $1.2 billion respectively (table 2).

The relative importance of FFV exports in total agricultural exports varied considerably among the three countries. For Costa Rica, FFV exports represented as much as 43.3 per cent of total agricultural exports in 2005 (in value terms), compared to 2.2 per cent for Brazil and 4.8 per cent for Argentina. Table 2 shows selected indicators of FFV production and exports by the three countries.

In the context of the analysis of the implications of EurepGAP, the size and dynamism of the EU market as compared to other market outlets is particularly relevant. In the case of all three countries, the share of exports to the EU-15 in total exports of FFV is significant. It ranged from 42.2 per cent for Costa Rica to 59.9 per cent (84.5 per cent in the case of fruit, excluding nuts) for Brazil. During the period 1997-2005, the share of Brazil's FFV exports to the EU-15 in its total FFV exports grew (figures 1 and 2 and table 3) more than that of Argentina and Costa Rica, where the share either declined or rose only slightly.

Table 2. Exports of fruit and vegetables, basic data for Argentina, Brazil and Costa Rica, 2005

	Argentina	Brazil	Costa Rica	Latin America	All developing countries
Production of fruit and vegetables (million tons), 2004	10.7	43.8	4.1	123.5	1 083.7
Share in production of all developing countries (%)	0.8	3.2	0.3	8.9	100.0
FFV exports ($ million)	1 023.6	692.4	1017.3	12 781.4	29 760.0
Exports of fresh and processed fruit and vegetables (HS 7, 8 and 20) ($ million)	1 547.5	1 937.5	1180.8	16 091.4	40 630.0
Share of processed fruit and vegetables (HS 20) in total exports of fruit and vegetables (HS 7, 8 and 20) (%)	33.9	64.3	13.8	20.6	26.8
Share in FFV exports of all developing countries (%)	3.1	2.3	3.8	42.9	100.0
Share in fresh and processed fruit and vegetables of all developing countries (%)	3.8	4.8	2.9	39.6	100.0
FFV exports as a share of all agricultural (HS 1-24) exports (%)	4.8	2.2	43.3	14.3	14.1
FFV exports as a share of total exports (%)	2.3	0.6	14.2	2.6	0.9
FFV exports to EU-15 as a share of total FFV exports (%)	46.2	59.9	42.2	25.5	28.7
Fruit exports to EU-15 as a share of total fruit exports (HS 0803-0814) exports (%)	48.1	84.5	45.0	36.3	38.2

Source: UNCTAD secretariat calculations, based on FAO and COMTRADE

Another indicator of the growing importance of Brazil's FFV exports to the EU-15 is their increasing share in the country's overall agricultural trade with that market: from 1.49 per cent in 1997 to 3.86 per cent in 2005 (table 3). To complement this analysis, the next section examines EU imports from Latin America in general and Argentina, Brazil and Costa Rica in particular.

Figure 1. Argentina, Brazil and Costa Rica:
FFV exports to the EU-15 as a share of exports to the world, in value terms (%), 1997-2005

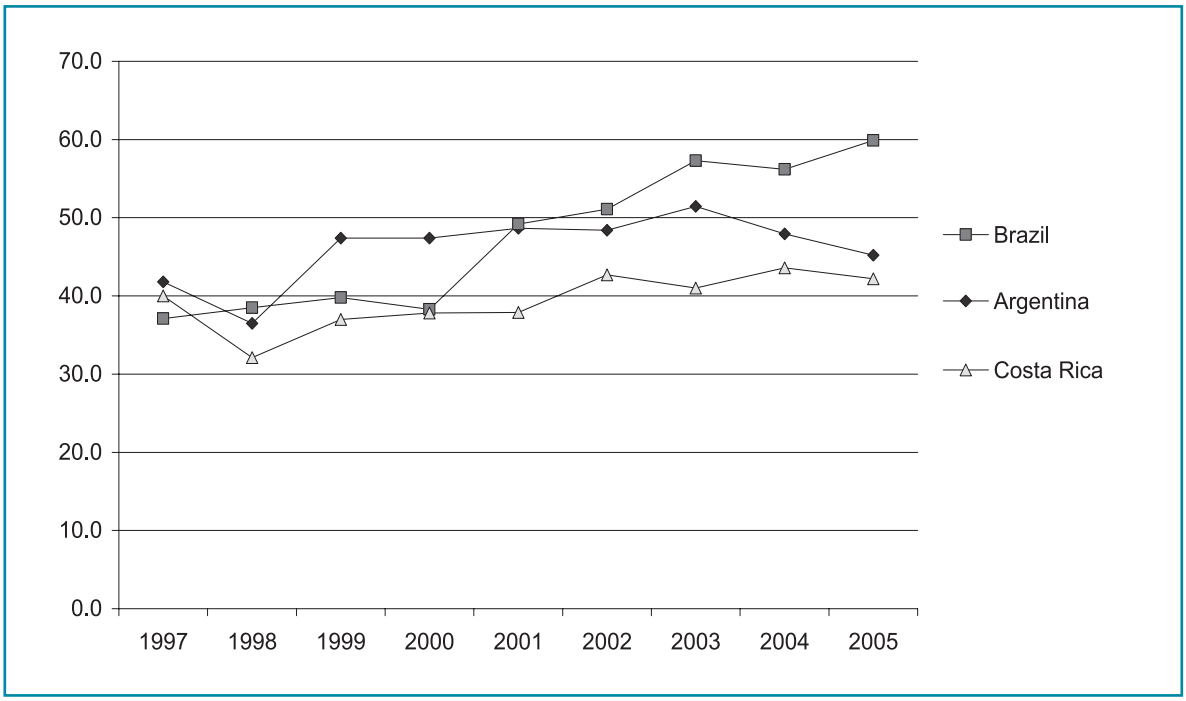
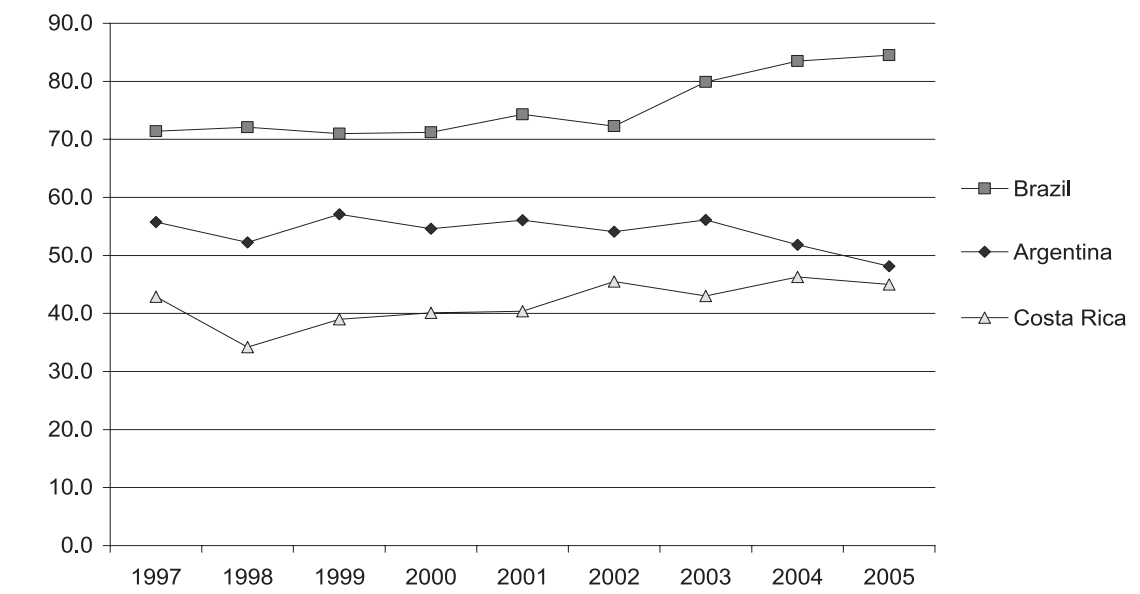


Figure 2. Argentina, Brazil and Costa Rica:
Fresh Fruit exports to the EU-15 as a share of exports to the world, in value terms (%), 1997-2005



EU-15 imports

The EU market has been growing slowly for the past two decades. Between 1992 and 2002 production of vegetables in the EU increased by only 1.3 per cent in volume terms, while that of fruit was stable. Consumption of FFV in that region has tended to stabilize in terms of volume, but in value terms it is still growing due to increased demand for value-added and off-season products (Labaste, 2005).

However, Latin America increased its share in EU-15 FFV imports from non-EU-15 members from an average of 29.5 per cent in 1996-1998 to an average of 33.4 per cent in 2003-2005. Over the same period, the share of Latin America in EU-15 imports from all developing countries increased from 42.1 per cent to 46.2 per cent (table 4).

Table 3. Brazil: Indicators of the growing importance of FFV exports to the EU-15 (%)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Share of FFV to the EU-15 in total FFV exports	37.1	38.5	39.8	38.3	49.2	51.1	57.3	56.2	59.9
Share of fruit exports to the EU-15 in total fruit exports	71.4	72.1	71.0	71.2	74.3	72.3	79.9	83.5	84.5
FFV exports to the EU-15 as a share of all agricultural exports to that market	1.49	1.78	2.27	2.56	2.65	2.89	3.50	3.34	3.86
FFV exports to the EU-15 as a share of total exports to that market	0.79	0.81	1.02	1.01	1.21	1.32	1.64	1.46	1.62

Source: UNCTAD secretariat calculations, based on COMTRADE (all indicators are based on trade data in value terms)

Table 4. EU-15: Imports of FFV from selected Latin American countries and developing countries, in value terms, 1996-2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					Imports ($million)					
Total	31 366	29 475	30 202	29 486	26 022	27 662	29 862	37 245	42 624	4 3751
Intra-EU-15	18 171	17 124	17 778	16 860	14 949	15 855	17 418	21 822	24 211	23 964
Outside the EU-15	13 195	12 350	12 424	12 626	11 074	11 807	12 444	15 424	18 412	19 787
Developing countries	9 178	8 768	8 631	9 054	7 856	8 506	9 010	11 179	13 349	14 186
Latin America	3 744	3 678	3 763	3 841	3 244	3 670	4 041	5 183	6 174	6 582
Argentina	484	471	531	524	424	551	568	732	780	864
Brazil	165	188	197	258	267	309	361	506	613	856
Costa Rica	595	624	689	700	611	716	798	1 017	1 230	1 134
					Share of all imports from outside the EU-15 (%)					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developing countries	69.6	71.0	69.5	71.7	70.9	72.0	72.4	72.5	72.5	71.7
Latin America	28.4	29.8	30.3	30.4	29.3	31.1	32.5	33.6	33.5	33.3
Argentina	3.7	3.8	4.3	4.2	3.8	4.7	4.6	4.7	4.2	4.4
Brazil	1.3	1.5	1.6	2.0	2.4	2.6	2.9	3.3	3.3	3.3
Costa Rica	4.5	5.1	5.5	5.5	5.5	6.1	6.4	6.6	6.7	5.7
					Share of EU-15 imports from all developing countries (%)					
Latin America	40.8	41.9	43.6	42.4	41.3	43.1	44.9	46.4	46.2	46.4

Source: COMTRADE

The dynamism of EU imports from the three countries can be further illustrated by EU import data in volume terms. EUROSTAT data show that the volume of EU-15 imports of FFV from Brazil increased by around 91 per cent during the period 2000-2005, although from a relatively low base (table 5). Over the same period, imports from Argentina increased by 58.4 per cent and those from Costa Rica by 24.2 per cent. With regard to Costa Rica, the decline in the volume of EU-15 imports of bananas by 15 per cent (mostly as a result of changes in EU tariff policy) was more than compensated by a massive increase of 168 per cent in imports of other FFV (especially pineapples, for which Costa Rica supplied 60 per cent of all EU-15 imports in 2005). There are several other examples of recent surges in exports of specific products to the EU-15 by the countries examined here, such as lemons from Argentina (accounting for 57 per cent of all EU-15 imports from outside the EU in 2005) and papayas from Brazil (75 per cent of all EU-15 imports).

Table 5. EU-15 imports of FFV from Argentina, Brazil and Costa Rica (in volume), 2000-2005

		2000	2001	2002	2003	2004	2005	2000-2005
Exporter	**Product group**			Thousand tons				Increase (%)
Argentina	Total	495.6	630.7	646.2	745.7	710.5	784.7	58.4
	Vegetables	125.4	134.1	144.5	138.6	144.3	133.8	6.7
	Fruit and nuts	370.2	496.7	501.7	607.0	566.3	651.0	75.8
Brazil	Total	288.5	381.5	384.9	524.5	542.3	550.9	90.9
	Vegetables	2.8	3.7	5.9	6.5	7.6	8.1	190.8
	Fruit and nuts	285.8	377.8	378.9	518.0	534.7	542.9	90.0
Costa Rica	Total	839.7	840.3	901.4	998.7	1118.3	1042.9	24.2
	Vegetables	9.7	12.6	14.1	17.0	18.7	19.2	97.4
	Fruit and nuts	830.0	827.8	887.3	981.7	1099.7	1023.7	23.3
	FFV (excl. bananas)	181.2	202.2	211.4	270.2	367.1	485.1	167.7

Source: EU Exporter Helpdesk

II. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter attempts to synthesize some of the key challenges and opportunities arising from the EurepGAP Fruit and Vegetables standard from a trade and development perspective, based on the national experiences of the three Latin American countries covered by this monograph: Argentina, Brazil and Costa Rica. Some lessons learned from the experiences of other developing countries are also taken into account. The chapter also highlights some issues raised in national and regional discussions concerning existing and possible future national GAP codes and their relationship with the EurepGAP standard. Finally, it lists some recommendations that emerged from the country case studies and from discussions in several workshops organized by UNCTAD's CTF.

Summary and conclusions

This section summarizes key lessons learned and presents conclusions in three areas: (a) trade and development implications of private-sector standards in international markets, in particular the EurepGAP standard for Fruit and Vegetables; (b) experiences with GAP implementation at the national level; and (c) standard-setting processes, with special reference to EurepGAP.

Trade and development implications

Developmental issues

The FFV sector provides smallgrowers with opportunities to earn higher incomes (compared to other crops), and it can potentially contribute to rural development and employment. The Brazilian case study (chapter III) argues that the growth of the FFV sector has helped to retain workers in rural communities. Also, recent trends, such as increased demand for safe and healthy food in international and domestic markets and efforts to promote the application of good agricultural practices, have raised the level of competence required of producers resulting in greater demand for skilled rural workers.

Yet there is concern that increasingly stringent food safety and environmental requirements (both mandatory government regulations and voluntary private-sector standards) in international markets may reinforce the trend of a growing concentration of agricultural production in a smaller number of producers with a larger capital base (as discussed in the case study on Argentina) and the exclusion of many smallgrowers from value chains.

A number of recent studies point out that private-sector standards appear to contribute to the exclusion of weaker players (i.e. countries with low volumes of FFV exports and smallholder producers) from value chains. This may have significant impacts on poverty because the smallholder supply base has strong links with rural development in developing countries (COLEACP, 2007, Graffham, 2007). Concern has been expressed that this may be at odds with efforts of governments and multilateral institutions to involve small-scale farmers in the export sector.

The growing importance of large buyers (retailers and processors) in international markets and their increasingly stringent requirements for food safety, quality and reliability of delivery has strengthened the role of value chain management in the food business, including in the FFV sector. There is a tendency for large buyers to reduce the number of suppliers. Therefore a key concern is how to address the risk that many smallgrowers may be excluded from the value chain. Humphrey (2005) observes that the main issue is not whether small farmers can be integrated into marketing channels that meet challenges of public and private standards, but how this can be done in a cost-effective manner. Outgrower schemes, for example, can address the MRL problem by having buyers take direct responsibility for critical standards-related processes such as pesticide spraying. But coordination costs involved in ensuring continuous compliance with process requirements may be high, and there

may be an underlying tendency to source from large-scale growers, which are easier to coordinate.[8]

The case studies presented in this volume confirm that smallgrowers face significant problems in meeting private-sector requirements. Similarly, OECD studies suggest that smallholders will be able to meet private standards only if there is sufficient financial and technical assistance as well as monitoring and management oversight, and that this is currently only achieved by successful out-grower networks run by exporters, or by relatively large, well-functioning producer cooperatives (OECD, 2006).

The development of national GAP schemes in developing countries, including government-driven schemes, offers the potential to pay special attention to the conditions and needs of smallgrowers in promoting the sustainable production of safe and healthy FFV. For example, Brazil's own GAP system, called Integrated Fruit Production (PIF, based on its acronym in Portuguese) pays special attention to continuous training and capacity development through pilot projects involving a large number of small producers, including, for example, in the northeast of Brazil (Andrigueto, Nasser and Teixeira, 2006). GAP implementation, however, may also impose certain constraints on smallholders (see below). Furthermore, locally-developed GAP schemes may not effectively facilitate small-scale farmers' participation in international value chains, unless some degree of international recognition is achieved.

UNCTAD and FAO studies emphasize that the development of national (or regional) GAP schemes requires a clear understanding of their objectives, strategies to be followed and each country's potential. National GAP schemes should, for example, adequately balance the requirements in domestic and export markets, based on a realistic evaluation of existing capacity and the potential for its development (Poisot, 2007). Also, national GAP schemes should not focus only on a single approach aimed at facilitating certification against standards that are required to sell to retailers in international markets. They should also aim at assisting producers, in particular smallholders, in supplying safe and healthy products to national, regional and international wholesale markets, local wet markets (most of which take place in open-air market places or streets, where local farmers supply produce direct from the field to the end consumer) and markets for products from organic agriculture.

Trade implications

Compliance with GAP standards is not mandatory. However, before selecting suppliers and placing orders, retailers and importers often turn to third-party certification to make sure that their suppliers use quality management systems that assure the integrity, traceability, safety and quality of the food products they buy. Therefore, voluntary standards, including EurepGAP, may act as de facto mandatory requirements and, where they play a significant role in the market place, can have fairly important trade implications.

These implications, however, are difficult to estimate. There may be negative implications (for example if adjustment costs are high, if compliance criteria discriminate against foreign producers and/or if there is a need to comply with multiple standards causing a rise in transaction costs) or positive implications (if compliance facilitates market access or provides a competitive edge to producers/exporters), depending on many factors. Although GAP certification usually does not result in price premiums for producers, meeting high quality and food safety standards may provide developing countries with a competitive edge in specific FFV. An often-cited example is Peru's asparagus sector (O'Brien and Díaz Rodríguez, 2004).

The costs of meeting EurepGAP or other GAP standards may have trade implications only to the extent that these costs are incremental to those of meeting relevant government regulations and commercial standards. There is no provision in the food safety legislation of most countries, or the EU, that

[8] A recent study by the Centre for Research on Multinational Companies (SOMO) in the Netherlands argues that in order to protect small producers, governments of both developing and developed countries need to employ anti-trust/competition policies and practices to limit buyer power and prevent undesirable levels of industry concentration and vertical integration at national, regional and global levels (for more information, see Vander Stichele, van der Wal and Oldenziel, 2006, chapters 2 and 6).

requires producers or exporters in third countries to certify their food quality system. Yet, not all costs incurred in meeting GAP standards are incremental. In part, GAP standards consist of specifications that enable producers/exporters to meet government regulations. In addition, some requirements, although not explicitly imposed on third-country suppliers through government regulations in the importing country, would nevertheless have to be met if fruit or vegetables are exported to a specific market. This is so, for example, if regulatory requirements are transmitted to producers and exporters in developing countries by contractual arrangements with businesses through the supply chain. For example, the traceability provisions of Regulation EC/178/2002 do not have an extra-territorial effect outside the EU. However, the Regulation makes the importer responsible for compliance with the provisions. It is common practice among some EU food business operators to request suppliers in third countries to meet the traceability requirements (even beyond the "one step back, one step forward" principle), whether or not they request compliance with EurepGAP.

Adjustment costs required to comply with the EurepGAP standard or other codes for GAP depend, among other things, on the stringency of specific control points and compliance criteria, availability of certification infrastructure, laboratories and other facilities, whether or not training and extension services are provided by government institutions and others, and whether or not government support is provided (for example for certification costs). These factors are extensively analysed in the case studies presented in this manuscript as well as in case studies done for other institutions, such as the OECD (OECD, 2006).

The farmer or farmer group seeking to comply with EurepGAP or other GAP standards has to incur costs of investment in equipment and facilities, training, record keeping and use of tracking systems, audit and certification. As noted in the study on Costa Rica, for the individual farmer these costs may vary depending, for example, on the farmer's prior knowledge of GAP and experience in record keeping. Any role played by industry associations and public-private partnerships, for example in disseminating information and assisting producers in the identification of cost-effective adjustment policies, may also have an impact on compliance costs.

Depending on the existing facilities before GAP compliance is sought, producers may have to make significant investment in building safe storage facilities for fertilizers and crop protection products. OECD country studies (including on Chile and Peru) found that up-front costs to upgrade the farm to be able to meet the GAP requirements may often be the major cost element (OECD, 2006). Recurrent costs may also be significant. For instance in Peru, managerial costs for record keeping and other management tasks for mangoes were reported to be about $800-1000 per month (OECD, 2006). Some requirements mean both fixed and recurrent costs to the producer. For example, in some cases record keeping and use of tracking systems make information and communication technology (ICT) methods necessary. Apart from salaries of managers undertaking these tasks, investment in specialized ICT equipment (for example in bar coding) may therefore be needed.

The country case studies list a number of specific GAP requirements, including specific EurepGAP control points, which may be difficult to comply with and/or cause high adjustment costs (see below). However, in some cases there may also be cost savings, for example, as a result of more efficient production practices and reduced inputs. Brazil's PIF, for instance, has been successful in reducing the application of specific agrochemicals.

Certification costs may be relatively high for small producers, in particular where there is a need for multiple audits to comply with the requirements of different standards.

The extent to which the above factors affect FFV exports of individual exporting countries depends to a large extent on the destination of those exports. Given the high share of FFV exports going to the EU market, the EurepGAP standard seems especially relevant for many Latin American countries (table 1 above). Another important factor is the producer profile of key export sectors. In general, large producers and exporters of FFV to the EU have managed to achieve EurepGAP certification when necessary. However, small-scale producers tend to face major difficulties in meeting those requirements. In Costa Rica, for instance, transnational corporations dominate exports of bananas, and large exporters (including some local firms) also dominate pineapple exports. These exporters do not face major problems in achieving EurepGAP certification.

Importance of FFV exports and the EU market

The three countries in this study are among the 15 largest developing-country exporters of FFV. Together, they accounted for 9.2 per cent of the value of FFV exports of all developing countries in 2005. Fruit represented around 80 per cent of all their FFV exports, in value terms.

Several indicators presented in this report show that the EU-15 is an important and dynamic market for all three countries:

- A large share of their fruit is exported to this market: ranging from 45 per cent of Costa Rica's fruit production to 84.5 per cent of Brazil's (i.e. well above the average of 38.2 per cent for all developing countries) (table 2).
- Between 1997 and 2005, the value of Brazil's FFV exports to the EU-15 increased significantly, both as a share of its FFV exports to the world (from 37.1 to 59.9 per cent) and as a share of its agricultural exports to the EU-15 (from 1.5 to 3.9 per cent) (table 3).
- Between 2000 and 2005, the volume of EU-15 fruit imports from Argentina and Brazil increased by 75 and 90 per cent respectively, whereas the volume of imports of FFV, other than bananas, from Costa Rica increased by 176 per cent (table 5).
- Each of the countries examined in this report currently dominates EU-15 imports of specific products: for example, lemons from Argentina account for 57 per cent of all EU-15 imports from outside the EU, papayas from Brazil for 75 per cent and pineapples from Costa Rica for 60 per cent.

While FFV exports, in particular to the EU market, are important for all three countries, there are major differences among them. As a small country, most of Costa Rica's FFV production is for the export market, accounting for 43.3 per cent of the country's total agricultural exports in 2005 (in value terms). However, most of Brazil's FFV production is for the domestic market (some 98 per cent). FFV exports accounted for only 2.2 per cent of its total agricultural exports in 2005 (in value terms).

How important is EurepGAP certification for exports to the EU?

Not all customers in the EU market require assurance that the FFV they buy have been produced in accordance with EurepGAP or other GAP standards. Even retailers who are members of EurepGAP may not require EurepGAP certification, as its standard does not oblige them to source EurepGAP-certified produce only. However, EurepGAP certification is an increasingly important factor in the marketplace.

It is difficult to determine what share of FFV exports to the EU currently comes from EurepGAP-certified farms (as of 31 December 2006, there were 828 EurepGAP-certified producers in Argentina, 279 in Brazil and 171 in Costa Rica).[9] In Costa Rica, large producers dominate exports of bananas and pineapples, and most of them have EurepGAP certification. According to the Costa Rica country case study, 90 per cent of the country's FFV exports to the EU are already EurepGAP-certified. In Argentina, EurepGAP-certified farms probably contribute to only about 20 per cent of the FFV exports to the EU. The percentage varies according to crops and regions. GAP implementation and certification against EurepGAP are the most advanced for pears and apples in the High Valley of Río Negro, whereas in other areas (e.g. Buenos Aires for citrus fruit) less than 10 per cent of exports are from EurepGAP-certified producers. In Brazil, many large exporters are EurepGAP-certified: five of the six main exporters of papayas to the EU are participating in EurepGAP, while two of these six are participating in the national PIF programme (European Commission, Health and Consumer Protection Directorate-General, 2006).

A major constraint mentioned in all three case studies is uncertainty about the extent to which retailers and importers in overseas markets will actually demand certification, which raises doubts about the

[9] Worldwide, there were more than 59,301 EurepGAP-certified producers not including around 10,000 producers under benchmarked schemes (http://www.eurepgap.org/documents/infoletter/Press-conference_080207-KM2.pdf: EUREPGAP launches 3rd Version of its Good Agricultural Practice Standard. EurepGAP Press Conference, 8 February 2007).

importance of certification in the marketplace. Since producers have to make considerable investments to obtain certification, they need assurances that such certification will bring them higher economic returns.

The above-mentioned findings are consistent with the preliminary findings of an ongoing FAO study, based on interviews with EU importers in the fresh produce sector concerning trends in the importance of private voluntary standards (PVS) in European markets (box 1).

Box 1. Trends in penetration of private voluntary standards in European markets

Preliminary findings of an ongoing FAO study with EU importers in the fresh produce sector

An ongoing FAO study on the penetration of PVS in European markets draws the following preliminary conclusions:

- The share of certified products is very difficult to quantify.
- It is difficult to assess if demand for certification depends on origin.
- The demand for PVS is directly proportional to market concentration.
- EurepGAP is invariably put forward as the most important standard for GAP, and the Global Food Standard of the British Retail Consortium (BRC) for packing/handling.
- There was a unanimous view that increasingly private standards will become essential.
- However most importers also buy non-certified products, and so do supermarkets (including EurepGAP members), depending on product availability and price.
- Many importers do not believe standards are a sufficient guarantee for improvements, and prefer to depend on reliable suppliers. However, they require certification if and when the retailers require it.
- For most importers, key criteria for supplier selection are: (1) quality (including packaging); (2) availability and continuity of supply; (3) trust/relationship; and (4) certification. Certification is usually not a key criterion, especially for products in the lower price ranges.
- Demand for PVS depends on markets: they are essential for large supermarkets and less so for wholesaler, smaller supermarkets, street markets and ethnic/specialty outlets, although the importance of PVS is growing in those sectors too.
- Retailers and importers from northern Europe (e.g. the Netherlands, Germany, the United Kingdom) more often require EurepGAP certification than retailers and importers in most other countries.
- From the above, it follows that EurepGAP certification will become increasingly important and practically indispensable for sale to European retailers. However, there are opportunities for non-certified products as well, which makes it important to implement GAP even if there is no commercial certification.

Source: Poisot, 2007

Experiences with GAP implementation at the national level

This section summarizes key findings in the area of GAP implementation at the national level. It covers issues related to the development of government-owned GAP standards (in particular Brazil's PIF) and compliance with private-sector standards in international markets, in particular EurepGAP. Both government-owned and private-sector standards are voluntary.

Benefits of GAP

The development and implementation of GAP schemes can bring a number of benefits, in particular enhanced consumer health (food safety), reduced environmental impact, often economic gains resulting from more efficient use of resources (e.g. appropriate minimum application of crop protection

products), improved workers' health and safety, and better compliance with national regulations. From a trade point of view, GAP standards may assist exporters and producers in meeting the regulatory and voluntary private-sector requirements of international markets. The Brazilian PIF has been successful in drastically reducing the application of agrochemicals by a range of 20 to 80 per cent per product and crop (table 8).

Obstacles to GAP implementation

There can be a number of general obstacles to GAP implementation, such as lack of awareness about the benefits of good agricultural practices, low levels of education, difficulties in keeping records and undertaking regular self-inspection, poor access to unadulterated inputs (e.g. seeds), lack of trained personnel and high costs of GAP implementation, combined with insufficient access to credit to finance improvements in the installations and machinery needed to comply with the GAP requirements and the absence of price premiums for products from certified farms. The case studies also indicate a number of specific obstacles to EurepGAP certification. For example, the Argentine and Brazilian case studies highlight requirements concerning the choice of chemicals (such as the requirement to use only those crop protection products that are registered for use for the target crop in the country of production as well as the requirement not to use chemicals banned in the EU) as a potentially significant problem, in particular with regard to the EurepGAP standard.

Factors to be considered in the development and implementation of national GAP schemes

Case studies carried out under the CTF project in different regions highlight two key problems that developing countries may face in the development and implementation of national GAP systems to assist producers and exporters in meeting the food safety and other requirements of international markets: (i) there is not yet a sufficient understanding among the key stakeholders of the main objectives and conceptual thrust of a national GAP and related policies; and (ii) there is still insufficient dialogue among the key stakeholders on the objectives, shape, supportive policies and benchmarking opportunities of national GAP codes.

The country studies presented in this monograph highlight the fact that many large exporters and globally active companies tend to prefer direct certification against the EurepGAP standard, and are less interested in certifying under national GAP codes to sell in international markets. The development of appropriate national GAP programmes should therefore primarily cater to small and medium-sized FFV producers and exporters. This will set the objectives, define the concept and determine the nature of supportive policies. Also, as mentioned above, national GAP schemes should adequately balance the requirements of domestic and export markets, based on a realistic evaluation of existing capacity and the potential for its development (Poisot, 2007).

Brazil's own GAP system, PIF, is in many respects more stringent than EurepGAP, and, apart from food safety, environmental issues and occupational health and safety, it also covers quality requirements. It is not a generic GAP system, but one based on crop-specific standards; this may pose a problem for producers, notably small ones who grow several crops. PIF standards have been developed by a number of government and academic institutions, although allegedly with relatively little effective involvement of small-scale producers. PIF certification is not yet well recognized in the domestic and external markets, and many exporters opt for direct certification against the EurepGAP Fruit and Vegetable standard. The Government had considered applying for EurepGAP benchmarking of the PIF protocol (focusing on apples), but reportedly is not pursuing this option any longer.

In Argentina, the Government has issued voluntary guidelines for hygiene and good agricultural practices for fruit and vegetables. The Argentine case study points out that certain requirements of national GAP standards which are more stringent than those accepted in international markets may create additional hurdles for producers.

In Costa Rica there is less pressure to develop a national GAP programme, as most FFV production is for the export market and is dominated by large companies (transnational corporations in the case of bananas) that have already obtained the necessary certification directly.

Developing and implementing national GAP protocols

Based on national experiences, the case studies identify a number of general and specific factors to be considered in the development and implementation of national GAP protocols.

One key consideration is the need for effective stakeholder involvement, in particular of small producers. Some of the case studies express concern that, due to insufficient involvement of producers, particularly small and medium-sized growers, in the development of standards owned by the Government, the design of national GAP protocols may not properly reflect their particular circumstances and development priorities, even though they are intended to be the prime beneficiaries of a national GAP code. Moreover, governments have a key role to play in enabling effective implementation by the private sector, in particular by enacting effective legislation, providing infrastructure and extension services, and promoting training. This needs to be reflected in the protocols, as in the Brazilian PIF document, for example (see box 2). The roles of governments and other stakeholders are elaborated below.

The studies have also identified a number of specific factors that need to be reflected in national GAPs, such as the registration of plant protection products.

Options for achieving EurepGAP certification

Many large producers and exporters in Argentina, Brazil and Costa Rica have already obtained EurepGAP certification directly (Option 1). However, as mentioned above, small-scale producers tend to face significant obstacles. They could, under certain conditions, be assisted in overcoming some of the obstacles through group certification and benchmarking.

Group certification may be a viable option for those small-scale producers who are either part of legally established producer groups or suppliers of large exporters (i.e. outgrowers). Operational quality management systems are a prerequisite for certification, but subsistence farmers or smallholders are unlikely to have such systems. In Argentina, a number of small producers who are linked with a large export company that supports its suppliers in implementing a quality management system are undertaking Option 2 certification under EurepGAP. Strengthening groups of smallgrowers and assisting them in obtaining certification (either against EurepGAP or a national GAP standard) may bring many benefits. However, there may be a number of difficulties in creating new groups of smallgrowers only with a view to obtaining such certification.

Several benefits could accrue from benchmarking a national scheme with EurepGAP, such as local stakeholder support (which can make GAP implementation more successful, widespread and cost-effective) and the possibility of certifying production under a single standard that has international buyer recognition (thus avoiding a multitude of different buyer requirements). However, the current benchmarking process requires full compliance with all the requirements of the EurepGAP General Regulations as well as with the Control Points and Compliance Criteria (CPCC), and may leave little room for retaining flexibility in achieving the desired outcomes. Also, national GAP schemes could potentially be more stringent than EurepGAP, thereby creating additional obstacles to producers with an export interest.

Although there are many examples where the implementation of standards for integrated fruit production has facilitated (or is used as a stepping stone to achieve) EurepGAP certification,[10] the current EurepGAP benchmarking process may be less suitable for countries that already have a well-developed scheme, such as Brazil's PIF, than for countries that are only just starting to develop a national GAP scheme. The benchmarking process seems to be time-consuming; moreover, it needs to be renewed every time the EurepGAP standard is revised.[11] Benchmarking may also imply the need to introduce into existing national protocols new requirements that may not be particularly relevant

[10] Examples include kiwi production in New Zealand, apple production in Australia and in the State of New York (United States), and cherry production in British Columbia, Canada (through the British Columbia GAP programme, known as BCGAP).

[11] The third version of the EurepGAP standard was published on 8 February 2007.

or appropriate to local conditions, and they may create obstacles to smallgrowers (including those who have already been trained to implement the local standard) that are primarily interested in the domestic market. Finally, governments may be reluctant to incorporate requirements of a private-sector standard like EurepGAP into a government-owned GAP standard, such as PIF.[12]

It would appear that large producers and exporters would derive relatively few benefits from benchmarking, as most of them are already EurepGAP certified or can obtain certification if the market so requires. For smallgrowers, who generally need assistance in obtaining EurepGAP certification, alternative options such as EurepGAP group certification may be explored. Producers with an interest in supplying both the domestic and export markets may continue to face multiple auditing requirements (against EurepGAP and PIF) or they may seek only EurepGAP certification (which is a relatively important requirement in Brazil's largest and most dynamic export market). In Brazil, given the coexistence of the two systems – PIF and EurepGAP – with different certification requirements, it might be useful to explore avenues to create greater synergies between both their requirements. In addition, support could be given to efforts aimed at achieving certification, in particular by small producers, and developing cost-effective policies to promote effective GAP implementation in production for both the domestic and external markets. Coordination between the EurepGAP National Technical Working Group (NTWG) and the Technical Commission on PIF may be advisable in this context.

The studies on Argentina and Brazil highlight the potentially important role of national interpretation guidelines in assisting local producers understand the compliance criteria of EurepGAP control points in the local regulatory and agronomic context. Both Argentina and Brazil have established NTWGs to look into these issues. In the case of Brazil, the development of national interpretation guidelines could help bring EurepGAP and PIF requirements closer together by taking the PIF protocol into account (as far as possible) in the development of the additional (third) column that spells out the national interpretation of compliance criteria for the EurepGAP requirements. This could contribute to the recognition of PIF in international markets and perhaps make possible future benchmarking easier and politically more attractive.

Experiences of other countries with benchmarking

Two Latin American countries – Chile and Mexico – have already successfully benchmarked national GAP codes to the EurepGAP standard. In Chile, the national code, which was developed by Fundación de Desarrollo Frutícola (FDF) (the Fruit-growing Development Foundation) under a mandate of the Chilean Fresh Fruit and Vegetable Industry, was approved in April 2005 (ChileGAP).[13] Large producers and exporters were the main driving force behind ChileGAP, making considerable contributions to its design. The key remaining challenge is to incorporate small farmers into the programme (Villalobos and Santocoloma, 2005). The Mexican farm assurance scheme, Mexico Supreme Quality-GAP (MSQ-GAP), has also successfully completed the benchmarking process and signed the recognition agreement. The standard will initially cover single fruit and vegetable farmers only (Option 3), with the inclusion of farmer groups (Option 4) envisaged in 2007. Unlike some of the other benchmarked

[12] Such an approach may raise systemic WTO issues if there is a direct link between a national GAP scheme run by the Government and EurepGAP, because that link could be subject to WTO disciplines (Gandhi, 2005). The systemic WTO issues may include questions such as whether such national GAP schemes would fall under the disciplines of the SPS or the TBT Agreement, and whether they can live up to the risk assessment test, based on scientific evidence under the SPS Agreement, or fulfil the requirements for equivalence under the SPS Agreement (for more information, see WTO, 2007).

[13] According to Villalobos and Santocoloma (2005), ChileGAP is an example of successful harmonization of GAP and food safety programmes that are recognized in both the European and North American markets (ChileGAP is recognized by Davis Fresh Technologies – USGAP standard). It meets all traceability requirements for fresh produce. The following figures illustrate the success of the ChileGAP programme: 1,000 farmers at the national level are EurepGAP-certified (as of November 2005); 25,000 ha of agricultural land is EurepGAP-certified; 40 per cent of the exportable volume of Chilean fruit and vegetables are certified under GAP regulations (among others: EurepGAP, ChileGAP, USGAP, Nature's Choice); six international GAP certification entities are operating in Chile; over 150 consulting and training companies have been supporting the EurepGAP implementation process at the national level.

standards that cover only the production of certain crops, ChileGAP is applied to the entire FFV industry in Chile. In Brazil, since the PIF protocols are crop-specific, it may be necessary to initiate multiple benchmarking processes or harmonize individual crop protocols.

In the development of a national standard for benchmarking, it may be necessary to harmonize the requirements of all major markets. For example, the requirements of the United States market were particularly important for Mexico and Chile.[14] The study on Costa Rica points out that any national GAP standard should also be able to respond to the requirements of the United States market. That market is relatively less important for Brazil (except for cashew nuts) and Argentina.

UNCTAD's CTF activities also provide some insight into the experiences of developing countries in other developing regions. As the characteristics of FFV production and trade differ among continents and countries, strategies underlying national GAP codes are also likely to differ. Whereas around 48 per cent of the FFV production from the three countries in Latin America go to the markets of the EU-15, exports from the three Asian countries targeted by CTF activities (Malaysia, Thailand and Viet Nam) are largely regional – destined for Japan and other Asian developing countries – with only around 10 per cent (in value terms) going to the EU-15. Since Asian developing countries are thus much less dependent on the EU market for their FFV exports, they seem to have more time for the gradual development of national GAPs that would reflect their specific circumstances and development priorities. Therefore, in the Asian context, it seems logical for countries to adopt a step-by-step approach to attaining two key objectives of GAP programmes: (a) encouraging effective the production of safe food and the implementation of national food safety regulations; and (b) facilitating access to export markets. Such an approach could start with a scheme focusing on national food safety, with major government involvement; this could then be used as a basis for the development of local, regional or even national "premium" GAPs that would mainly aim at facilitating access to key export markets.

Mutual acceptance and recognition of national GAP codes among developing countries in the same region may be an important issue, in particular for Asian developing countries, because of the relative importance of regional South-South trade. Some have argued that benchmarking national GAP codes to EurepGAP could facilitate mutual acceptance of national GAP codes among Asian developing countries and would be easier to accomplish than formal mutual recognition agreements, or the development of a regional ASEAN GAP, for example.[15] In other developing regions, regional trade represents only a small proportion of FFV exports. For example, as shown in table 1, in 2005 only 6.8 per cent of FFV exports from Latin America (in value terms) went to other countries in the region.

Role of governments in national GAP development and implementation

Government-driven GAP protocols that are developed with little involvement of producers may be overly stringent and inadequately adapted to the conditions of smallholders. Governments could play a lead role in developing guidelines, although, in practice, guidelines for voluntary application may have relatively little impact.

Apart from supporting extension services (see below), governments could facilitate the implementation of national GAP standards and assist producers in meeting EurepGAP requirements, in particular by:

- Creating or enhancing awareness among producers.
- Facilitating national stakeholder dialogue on key conceptual and design issues relating to national GAP code development and desirable supportive policies.
- Supporting training.
- Elaborating criteria for assessing new sites for FFV production.

[14] Interestingly, Chile and Mexico, the two Latin American countries that have successfully completed the benchmarking process, send only a relatively small proportion of their FFV to the EU market. Many Chilean growers were already EurepGAP-certified before the benchmarking process began, but needed GAP certification for the United States market as well. ChileGAP has significantly reduced certification costs per farm (Garbutt and Coetzer, in this monograph).

[15] For more information on an ASEAN GAP, see: www.aphnet.org/gap/ASEANgap.html

- Addressing problems with the registration of crop protection products.
- Assuring effective control of some aspects covered by EurepGAP control points, such as seed quality, genetically modified organisms (GMOs) and agrochemicals, and developing national legislation in the areas of environmental protection and workers' health and safety.
- Providing the necessary infrastructure for compliance with control points (e.g. appropriate disposal of empty packages of agrochemicals) and promoting R&D and technical assistance (e.g. to facilitate accreditation of laboratories to ISO 17025 or an equivalent standard for testing).
- Providing effective regulations for companies supplying services and inputs relevant to GAP, such as laboratories, suppliers of fertilizers and agrochemicals, and providers of calibration products and services.

Against this background, the role of governments in national GAP development falls into five main clusters: (i) policy analysis (facilitating conceptual clarity, optimizing costs and benefits); (ii) facilitating investment (in physical and quality management infrastructure) and directing related donor support; (iii) devising support policies (e.g. extension services, financial support); (iv) assuring policy coherence (among government agencies and towards donors); and (v) facilitating stakeholder dialogue and involvement.

Extension services

In many developing countries, the apparent lack of underpinning support for the implementation of GAP, as evidenced by the gradual erosion and disappearance of official agricultural extension services, is a matter of concern. The case studies on Argentina and Brazil show that some government programmes provide extension services that may offer farmers some assistance in implementing good agricultural practices, although they have not been set up explicitly for that purpose.

In some cases, government institutions provide subsidies that cover part of the certification costs of small and medium-sized producers. In Brazil, for example, such subsidies are provided for participation in the PIF programme (although they are not generally made available for EurepGAP certification).

Standard-setting processes, with special reference to EurepGAP

The case studies on Argentina and Brazil highlight the fact that certain stringent EurepGAP requirements may not adequately take into account local conditions in developing countries, and tend to be difficult to comply with. Ensuring participation and transparency in private standard-setting processes can be at least as problematic as in public regulations, but the latter lack the multilateral guarantees of the WTO Agreements on the Application of Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT). The initial EurepGAP protocol, for example, was imposed on developing-country suppliers without any prior consultation or impact assessment (Dijkstra, 2006). Some observers suggest that over the years the EurepGAP standard-setting processes may have become more transparent. For example, the proceedings of the EurepGAP annual conference in Prague in 2006, which focused on the revision process, has been cited as an indicator of progress: for the first time, the proposed changes for the third revision of EurepGAP standards were presented through a participatory approach, outside the technical committees. However, developing countries may have difficulties in effectively participating due to the costs involved, frequent meetings in different parts of the world and high membership fees.

Given the considerable impact of private-sector standards, such as EurepGAP, on trade in FFV, and problems for some WTO members in dealing with possible unnecessary adverse trade effects of those standards, there is a need for more dialogue between representatives of private-sector standard-setting organizations, governments and producers/exporters in developing countries. Donors can play an important role in facilitating consultations and in supporting the participation of developing-country

representatives in annual EurepGAP meetings and in the work of its technical committees.[16]

In the WTO Committee on Sanitary and Phytosanitary (SPS) measures, the issue of private and commercial standards in general was first discussed in 2005, and further discussions are envisaged.[17] It has been suggested that Members could prepare contributions with specific examples of their experiences to promote a substantive discussion on this issue. The UNCTAD secretariat made available a paper to the SPS Committee meetings on 28 February and 1 March, partly drawing on the country case studies presented here (circulated as document G/SPS/GEN/761, 26 February 2007).

Recommendations

Key recommendations include the following (see also the recommendation sections in the case studies presented in Chapter III):

- FAO and UNCTAD studies point to the need for a clear vision on the role of national GAP schemes in promoting sustainable production of safe and healthy food products and access to international markets, as well as for a good understanding of key conceptual issues related to national GAP schemes. They also suggest the need for careful balancing of criteria in the light of the requirements of domestic and foreign markets, taking into account the particular circumstances of and capacities available in each country. A realistic assessment of these needs should assist in identifying appropriate strategies, which could include gradual and multi-tier approaches to the development and implementation of GAP schemes if desired.
- In the development of national GAP schemes, it is essential to ensure the effective involvement of all relevant stakeholders, as well as the provision of training and rural extension services in facilitating GAP implementation. National stakeholder dialogues could play a key role in building consensus on the main objectives and priorities of national GAPs and the necessary supportive policies. Government support should be particularly directed at smallgrowers.
- More empirical studies are needed to assess the present and likely future relevance of GAP (including EurepGAP) certification in the marketplace in order to provide informed guidance to producers (for example in investment decisions) and to governments (for example concerning possible support measures).
- A key objective of governments should be to use national GAP protocols (whether owned by the private sector or a government institution) as a vehicle for effective achievement of national food safety, agricultural sustainability and export goals.
- An adequate balance between harmonization of global requirements, on the one hand, and local conditions on the other, as well as field-testing of compliance criteria, could contribute significantly to the successful development of national GAP schemes. This is one of the lessons learned from the experience of ChileGAP.
- The EurepGAP benchmarking process needs to be better adapted to already existing GAP protocols in developing countries, and the concept of "equivalence" should take full account of the achievements of such programmes.
- Governments should create the necessary conditions to enable producers and exporters to comply with GAP requirements, in particular in the areas of pesticide registration, and

[16] In early 2007, the Department for International Development of the United Kingdom and the German GTZ announced their intention to provide funding for a "developing country-ambassador" to work at FoodPlus GmbH (the EurepGAP secretariat). This person is expected to liaise with developing-country producers, exporters and governments on issues of standard setting and implementation.

[17] In June 2005, the WTO SPS Committee, for the first time in its history, discussed how governments should act when standards required by their private sectors are tougher than the government's own requirements. The discussion was triggered by a complaint by Saint Vincent and the Grenadines, supported by Argentina, Ecuador, Jamaica and Peru. They also complained that EurepGAP requirements for exporting bananas and other products to European supermarkets were tougher than government requirements. An information session was subsequently organized on the margins of the 11-12 October 2006 meeting with representatives of EurepGAP and UNCTAD. Another UNCTAD-WTO Informal Information Session on Private Standards was held on the sidelines of the regular SPS Committee session on 25 June 2007 (for more information see: www.unctad.org/trade_env/meeting.asp?MeetinglD=229).

testing of pesticide residues and water quality in appropriately accredited laboratories, as well as compliance with relevant national legislation concerning food safety, environmental protection and occupational health and safety. Governments should also make sure that national GAP schemes duly reflect smallgrowers' interests and concerns.

- Full advantage should be taken of EurepGAP NTWGs for Fruit and Vegetables (e.g. in Argentina and Brazil) to develop national interpretation guidelines, explore, and, if considered appropriate, support national benchmarking processes, and channel inputs from national experts to EurepGAP Technical Standards Committees. In addition, NTWGs should draw attention to problems resulting from short cycles of revision of EurepGAP protocols, which may deter farmers from using those protocols.
- Governments (in exporting and importing countries) and development cooperation agencies could support the active participation of producers and exporters in the further development of the EurepGAP standards. Given the impact of private-sector standards, such as EurepGAP, on trade in FFV, and the problems WTO members face in dealing with possible unnecessary adverse trade effects of such standards, there is a need for more dialogue between representatives of private-sector standard-setting organizations, governments and producers/exporters in developing countries. UNCTAD's CTF could contribute to this process.
- The CTF, in close collaboration with partners, in particular the FAO, could play a key role in assisting interested governments, farmers' organizations and other stakeholders in exploring different options for certification against EurepGAP and other relevant standards, as well as in promoting international recognition of existing and/or new national GAP protocols of developing countries. The CTF could also assist interested developing countries in voicing their concerns relating to the development and implementation of key private-sector standards, in particular the EurepGAP standards (including its benchmarking approaches and procedures), to the relevant forums and committees.

III. NATIONAL EXPERIENCES

This chapter summarizes case studies done by local researchers in Argentina, Brazil and Costa Rica in the second half of 2005. Preliminary versions were discussed at a subregional UNCTAD-Inmetro workshop held in Rio de Janeiro, 8-9 December 2005.

ARGENTINA[18]

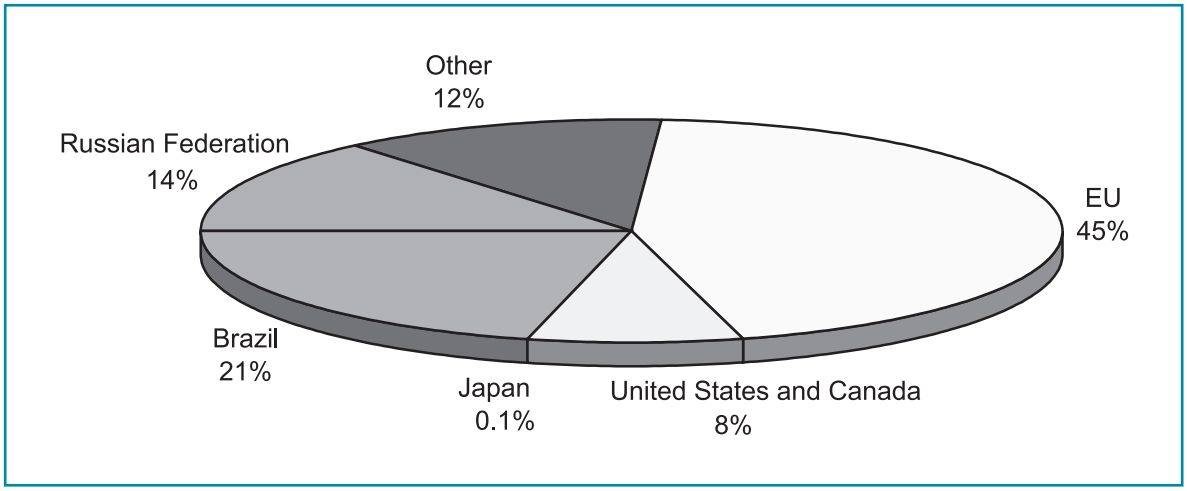
Fresh fruit and vegetables: production and international trade

According to FAO statistics, Argentina produced 10.7 million tons of fruit and vegetables in 2004 (Annex, table A.1). A relatively large share of the production (in volume terms) of certain fruit categories was exported: for example, 66 per cent of pears and quinces, 9 per cent of oranges and 24 per cent of lemons With regard to vegetables, 34 per cent of garlic production and 29 per cent of onion production was exported, principally to Brazil (Ministry of Foreign Relations, International Trade and Culture, *Informe Comercial por Posición Arancelaria* (INFOCOPO).[19]

Argentina's exports of FFV (HS chapters 7 and 8) exceeded $1 billion in 2005, a significant increase from $716 million in 2003 (COMTRADE). Indeed, FFV accounted for 5.5 per cent of Argentina's total agricultural exports (HS chapters 1-24) in terms of value in 2005. Exports of fresh fruit amounted to $782 million, representing around three quarters of the value of all FFV exports. Pears, citrus fruit (in particular lemons) and apples were the main export items (table 6), which together amounted to $582 million, or 74 per cent of all fresh fruit exports. Exports of vegetables were worth $240 million, 90 per cent of which comprised beans, garlic and onions.

Around 45 per cent of Argentina's total FFV exports, in value terms, go to the EU-15 (figure 3). This share is higher for fruit (48 per cent) than for vegetables (36 per cent) (figures 4 and 5). Brazil and the Russian Federation (for fruit) are also important markets. However, the share of exports going to the United States and Canada is relatively small.

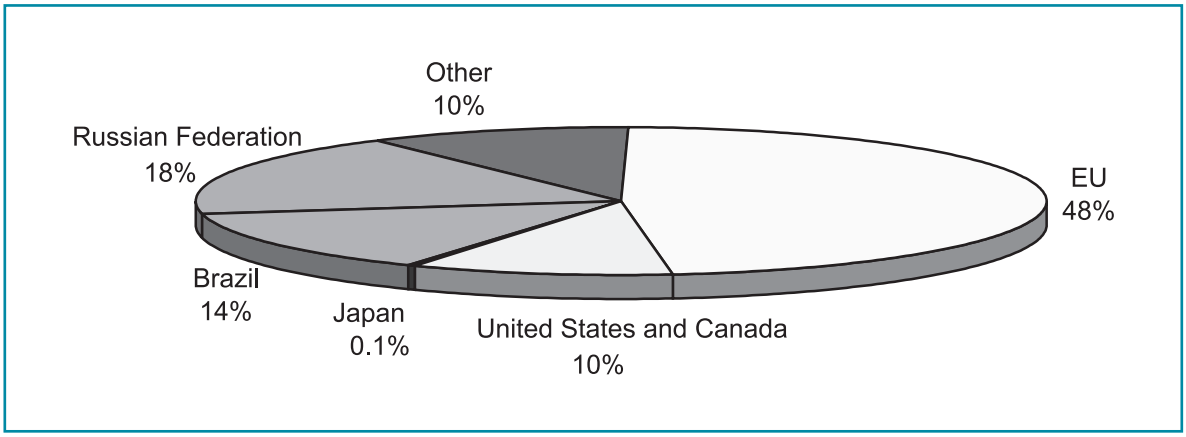
Figure 3. Argentina: Structure of exports of FFV (HS 07-08), in value terms, by market of destination (%), 2005



[18] This section is based on the country case study prepared for UNCTAD by Martin Babboni, Valeria Glusman (Argencert, Buenos Aires, Argentina), and Dr. Jochen Neuendorff (Gesellschaft für Ressourcenschutz, GfRS, Göttingen, Germany) (2005).

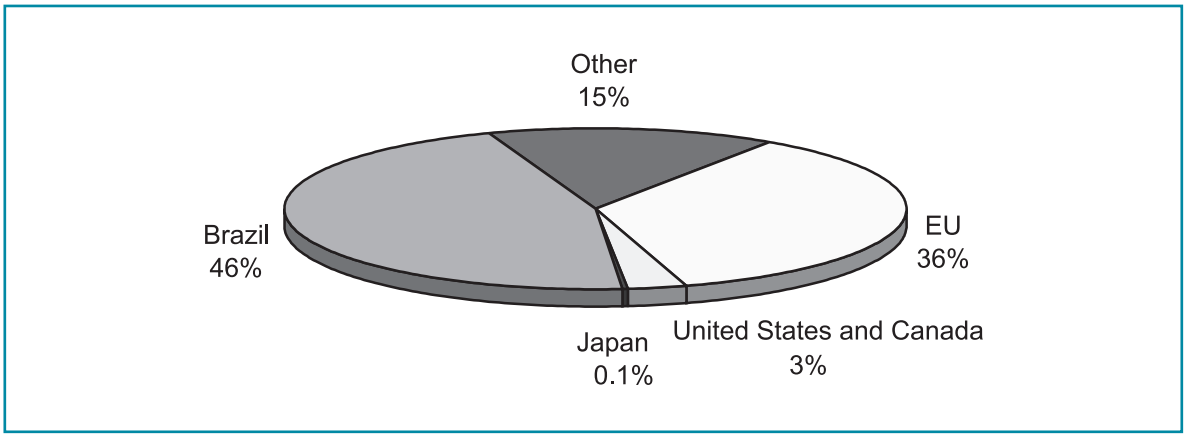
[19] INFOCOP is a free online service provided by the Ministry of Foreign Relations, International Trade and Culture, which allows users to view and download summary information on international markets for any product at the 6-digit HS level. The website is: http://www.mrecic.gov.ar/portal/screi/digce/infocopo.html

Figure 4. Argentina: Structure of exports of fruit (HS 0803-0814), in value terms, by market of destination (%), 2005



According to EUROSTAT data, the volume of EU-15 imports of FFV from Argentina was 785,000 tons in 2005, of which fruit accounted for 651,000 tons and vegetables for the remaining 134,000 tons. Fruit imports from Argentina (in value terms) represented 6.4 per cent of EU-15 imports from outside the EU (up from 4.5 per cent in 2000) and vegetable imports constituted 3 per cent (up from 1.9 per cent in 2000). In 2005, citrus fruit imports from Argentina represented 18.5 per cent of EU-15 imports from outside the EU in both value and volume terms. Argentina was the second largest citrus fruit exporter to the EU-15 after South Africa. Imports of pears from Argentina represented 42.7 per cent of EU-15 imports in value terms (46 per cent in volume terms). Argentina was the fourth largest supplier of apples after New Zealand, Chile and South Africa. The leading vegetable exported by Argentina was garlic: its share in extra-EU-15 imports was around 43 per cent in value terms and 33 per cent in volume terms.

Figure 5. Argentina: Structure of exports of vegetables (HS 07), in value terms, by market of destination (%), 2005



Producer profiles

In recent years, agricultural production in Argentina has become more concentrated in a smaller number of producers with a larger capital base (National Institute of Statistics and Census, INDEC, 2002). This is also reflected in the National Farming Census of 2002, which shows a larger concentration of capital, fewer producers and a larger average size of properties in comparison with the 1993 Census. Many companies, although legally incorporated in Argentina, are subsidiaries of international companies, or have mixed ownership.

This section analyses producer profiles for pears (the profile for apples is similar), citrus fruit and garlic.

Table 6. Argentina: Exports of FFV to the world and the EU-15, 2003-2005

Product	HS96 codes	Exports to the world, 2003-2005 ($ million)			Exports to EU-15, 2005		Share in total FFV exports, 2005	
		2003	2004	2005	Value ($ m)	Share in exports to the world (%)	Exports to the world (%)	Exports to the EU-15 (%)
FFV	07-08	716.2	798.3	1023.6	462.9	45.2	100.0	100.0
Fruit	08	527.6	598.6	782.6	377.0	48.2	76.5	81.4
Pears	080820	148.6	153.4	208.9	89.9	43.0	20.4	19.4
Apples	080810	82.0	90.7	125.3	61.4	49.1	12.2	13.3
Citrus fruit	0805	181.5	212.3	247.7	148.8	60.1	24.2	32.2
Lemons	080530	130.8	126.9	151.8	100.3	66.1	14.8	21.7
Oranges	080510	22.5	41.9	46.5	21.3	45.9	4.5	4.6
Tangerines	080520	19.0	32.5	36.5	16.5	45.2	3.6	3.6
Grapefruit	080590	9.2	10.9	12.9	10.6	82.6	1.3	2.3
Grapes, fresh	080610	33.7	41.6	48.6	35.6	73.3	4.8	7.7
Grapes, dried	080620	8.8	21.0	27.1	3.2	11.6	2.6	0.7
Prunes	081320	32.6	25.0	47.8	11.3	23.6	4.7	2.4
Cranberries	081040	7.1	16.3	28.4	3.2	30.6	2.8	1.9
Plums	080940	9.1	9.5	11.5	11.3	50.8	1.1	1.3
Peaches	080930	6.1	5.2	6.8	2.8	41.1	0.7	0.6
Cherries	080920	3.0	3.9	5.5	4.5	82.0	0.5	1.0
Other fruit		15.1	19.8	25.0	4.9	19.6	2.4	1.1
Vegetables	07	188.6	199.4	240.9	85.9	35.7	23.5	18.6
Beans	071331-33	86.8	76.0	100.9	45.2	44.8	9.9	9.8
Garlic	070320	57.3	66.6	85.0	25.3	29.7	8.3	5.5
Onions	070310, 071220	30.3	36.8	32.2	7.6	23.7	3.1	1.7
Other vegetables		14.1	20.0	22.9	7.8	34.2	2.2	1.7

Source: COMTRADE.

Pears and apples

There are about 6,000 pear producers in Argentina, most of whom produce apples as well. Half of the farms in the Río Negro Valley (State of Neuquén) and 90 per cent of the farms in Mendoza own less than 10 hectares. Pear and apple production requires qualified manual labour and generates 41,000 jobs in the entire production chain.

About 20 per cent of producers are totally integrated in the value chain. They use advanced technology in all phases of the production chain and control the marketing of their products, including for export. Many of these companies (originally family-owned) have benefited from investments by shareholders in France, Germany and Italy. These producers are well informed about the requirements of international markets and take these into account in their production systems.

About 30 per cent of producers are moderately integrated in the value/production chain. They package and commercialize their production and have greater negotiating power with customers. The remaining 50 per cent are independent, small and medium-sized producers. Their distinctive characteristics are: lack of capital, strong dependence on family labour, old plantations with traditional systems, high production costs, low product quality, and individual and isolated marketing efforts.[20] They face serious problems achieving quality production, and therefore considerable difficulty in implementing

[20] http://www.alimentosargentinos.gov.ar/0-3/frutas/Peras_02/Pccion_Pera_01.htm

GAP and obtaining GAP certification with their own resources. These producers depend on training and incentives to convert to production that will meet GAP standards/requirements. Most of the small producers individually select the packing plant to which they sell their production. There are only a few cases of vertical integration whereby the producers engage in further commercialization of their product by forming cooperatives.

A common practice has been to operate without a written contract: when the goods are delivered, the producer receives a part of the agreed amount to cover harvest expenses; the balance is then paid in various instalments until the next production season. In the State of Rio Negro, Provincial Law No. 3611 on Fruit Transparency, which took effect during the 2003 agricultural campaign, establishes a legal regime for the different stages of the production chain. This law requires transactions to be formalized in a written contract, and stipulates that specific information should be explicitly mentioned, such as delivery conditions, payment and classification. The producers and companies that adhere to this regime can claim a 10 per cent reduction in their property taxes. Within a short period of time, nearly 1,500 contracts had been signed.

Other stages of the supply chain include the provision of inputs and production services (e.g. seedlings, agrochemicals), packing, refrigeration and transport.

Citrus fruit

In Argentina, there are 5,300 citrus producers and 529 packing plants (of which only 79, or 15 per cent, qualify for export). The sector provides employment to some 100,000 workers. Production is concentrated in certain regions, in particular in the north of Argentina (Provinces of Jujuy, Tucumán and Salta). The increasing export orientation of this sector has required improvements in quality and the introduction of technologies that necessitate a larger minimum size of establishments for efficiency of production. Production and exports of both fresh and processed fruit have experienced continuous growth. In particular, exports of lemons and oranges have increased; however those of grapefruit have declined. New sanitary requirements in the EU may result in severe restrictions on exports from production zones where Cancrosis (*Xantomonas campestris*) and other diseases are prevalent.

Garlic

Garlic is produced in small farms, approximately 75 per cent of which are smaller than 5 ha, while only a few (4 per cent) are larger than 20 ha.

Impact of EurepGAP

The most frequently used quality systems in international markets are EurepGAP (for fresh fruit and vegetables), the Hazard Analysis and Critical Control Point (HACCP) system, the International Standards Organization's ISO 9001-2000 standard,[21] Good Manufacturing Practices (GMP) (for processing operations), and, to a lesser extent, the British Retail Consortium's (BRC) Global Food Standard.[22]

Producers who have already implemented EurepGAP do not require another quality system for their primary production. However, in addition to EurepGAP they may need to conform with different standards/requirements for grading and packaging, as some buyers (e.g. from the EU and the United States) may demand compliance with HACCP or GMP, and/or compliance with standards for environmental management systems (ISO 14001) and/or social responsibility (SA 8000).

[21] ISO 9001:2000 specifies requirements for a quality management system for any organization that needs to demonstrate its ability to consistently provide products that meet customer and applicable regulatory requirements and aim to enhance customer satisfaction.

[22] EurepGAP has developed technical interfaces with post-farm-gate standards, such as the BRC Standard and the International Food Standard, so that the chain from farm to fork is assured. The combination of pre- and post-farm-gate assurance, along with risk-based product testing, forms the core of many food retailers' strategy for product quality assurance (Garbutt and Coetzer, 2005).

Currently, large companies engaged in fresh fruit and vegetable export are already certified or at an advanced stage of fulfilling the conditions needed for certification. However, the situation varies considerably for small-scale producers, some of whom may know the names of the certification systems, but not their requirements or other details.

Several institutions such as the Secretariat for Agriculture, Livestock, Fisheries and Food (SAGPyA), the National Institute for Agricultural Technology (INTA), universities and producers' associations have been offering training and have carried out awareness-raising activities, including through workshops, seminars and courses in good practices for quality in foods. Courses have also been offered for producers of specific fruit (e.g. citrus fruits and berries). While some producers have benefited from such activities, others are still far from knowing and implementing the requirements. It should be emphasized that all small and medium-sized producers require assistance for the implementation of GAP programmes.

Importance of the EurepGAP standard in the main export markets

Buyers from the EU have begun to require EurepGAP certification. However, not all production exported to the EU has this certification. No official data are available on how much of the production is certified. Although the number of EurepGAP producers has been increasing since 2002, it is probable that only about 20 per cent of the exports to the EU have EurepGAP certification. The percentage varies according to crops and regions. Producers of pears and apples in the High Valley of Río Negro are the most advanced in GAP implementation and certification against EurepGAP. It is estimated that in other production zones (e.g. the province of Buenos Aires for citrus fruit) less than 10 per cent of exports come from EurepGAP-certified producers.

Many exporters obtain only part of their supplies from EurepGAP-certified producers. Usually they begin to implement EurepGAP in their own farms or promote EurepGAP compliance by those suppliers that have already implemented good agricultural practices. This implies that although the exporter is certified, only a part of the exported fruit and vegetable exports may actually meet the EurepGAP standard.

In some cases, the EurepGAP certification process has been initiated by cooperatives and farmer groups whose membership includes the most technologically developed farms or whose producers have been among the more active in quality practices, traceability and bookkeeping.

In Argentina, there was much concern that exporters without EurepGAP certification would face restricted access to the EU markets. However, when exporters and producers learned that certification was not a mandatory condition for market access, many postponed EurepGAP certification. A similar phenomenon has been observed in the case of the EurepGAP Integrated Farm Assurance (IFA) protocol. As certification is not mandatory, very few operators in the grain and animal product sectors have so far shown interest in certification.

Certification

A number of ISO-65-accredited certification bodies (CBs) are currently operating in Argentina. The following CBs have already been approved to carry out EurepGAP Fruit and Vegetable certification:[23]

CBs with headquarters in Argentina:

- Argencert SRL;
- Inspectorate de Argentina SA;
- IRAM-Instituto Argentino de Normalización y Certificación;
- Organización Internacional Agropecuaria; and
- SGS Systems and Services Certification.

[23] Source: EurepGAP website (www.eurepgap.org)

CBs with branches in the country:

- BVQI Argentina SA;
- CERES Argentina/Food safety;
- Union Control Argentina;
- LATU Sistemas SA (Argentina); and
- SGS Argentina.

Provisionally approved CBs:

- LETIS SA.

The number of qualified EurepGAP auditors and inspectors is still small. They may have to travel over long distances, resulting in high travel costs. Similarly, there are only a few local auditors for accreditation of CBs to carry out certification against the EurepGAP standard. Therefore, there is a need to train more auditors and inspectors.

National GAP guidelines

In Argentina, there are no national GAP schemes for FFV. However, the National Health and Agro-alimentary Quality Service (SENASA) has developed two sets of guidelines:

- Guidelines for Good Hygiene and Agricultural Practices in the Primary Production (cultivation-harvest), Packaging, Storage and Transport of Fresh Vegetables, 1999: Resolution 71/99 of the Secretariat for Agriculture, Livestock, Fisheries and Food.
- Guidelines for Good Hygiene and Agricultural Practices in the Primary Production (cultivation-harvest), Packaging, Storage and Transport of Fresh Fruit, 2002: Resolution 510/02 of SENASA.

The objectives of the guidelines are to:

- Specify the essential principles of hygiene in the primary production (in the field, under cover or in hydroponics), packaging, storage and transport of fresh fruit and vegetables in order to guarantee food that is safe for human consumption.
- Provide specific recommendations for hygiene and good agricultural practices in the primary production (cultivation-harvest), packaging, storage and transport of vegetables and fruit;
- Offer recommendations about good agricultural practices necessary for maintaining the characteristics and quality of the product.
- Establish guidelines aimed at protecting the safety and health of the people involved in the production chain.
- Preserve the natural resources.

The guidelines issued in 2002 are more detailed than those of 1999. They cover similar aspects as the EurepGAP protocol, with even more detail relating to specific aspects such as equipment, and the application of products for post-harvest use and for frost control. As they are guidelines, compliance is only recommended (not binding), and there is no official inspection mechanism yet which limits the credibility of the scheme.

There are also private-sector initiatives, such as the quality protocol developed by a cooperative of small organic producers called Integrated Argentine Producers (PAI). This protocol, which is to be applied by PAI members, has been developed for the production of pears, apples, plums and peaches and, among other things, covers integrated pest management (IPM). A few large retailer chains also have their own quality protocols for products sold in their own stores for domestic consumption.

Potential benefits of GAP schemes

Benefits arising from the development and implementation of any GAP scheme include the following:

- Enhanced consumer health (greater food safety).
- Improvement in the quality of life of workers: safe and healthy working conditions, training on risky activities; accident and emergency prevention and management procedures.

- More efficient use of resources: appropriate application of water, appropriate minimum application of crop protection products, use of quality seeds free from harmful pests and diseases, and calibration of machinery.
- Environmental care: prevention of contamination by minimum and appropriate use of agrochemicals, proper management of packaging waste, and environmental conservation (e.g. erosion prevention and risk assessments of new agricultural sites).
- Awareness and emergency procedures: precautionary measures to address risks of spills or fires in places where agrochemicals are stored, and accident prevention and management procedures.
- Improved installations.
- Economic and health benefits from identification of lots and batches to be withdrawn from the market when considered necessary. Traceability enables the withdrawal of only specific batches rather than the entire production.
- Availability of information as a result of bookkeeping requirements.
- The introduction of GAP standards improves knowledge of and compliance with official regulations, which are numerous but rarely observed and poorly enforced.

Potential benchmarking of a national scheme with EurepGAP could help Argentine producers take account of local conditions and maintain their national identity. However, the current benchmarking process requires full compliance with all requirements of the EurepGAP, including its General Regulations and the Control Points and Compliance Criteria (CPCC). On the other hand, a national GAP could potentially be more stringent than EurepGAP, which would create additional obstacles for Argentine producers.

The guidelines for GAP developed in Argentina are easy to understand and refer to local conditions. However, they only provide recommendations for voluntary measures, and have not yet been widely implemented. Therefore, it is difficult to assess the impact of those guidelines. Moreover, international buyers do not require compliance with the national guidelines. The EurepGAP protocol may therefore provide a stronger incentive to implement GAP than national guidelines.

Constraints on the implementation of GAP schemes

There are a number of constraints on the implementation of national GAP schemes, in particular:

- Insufficient access to credit to enable farmers to invest in improving machinery and installations.
- Lack of sufficiently trained personnel.
- Farmers' lack of interest: for example, in some regions where traditional family-type production prevails, the attitude of producers, linked with age and cultural habits, may be a constraint.
- GAP implementation does not result in a price premium for the product, and the producer has to absorb the costs of implementation and certification.

Factors to consider for EurepGAP implementation and a national GAP code

Producers, in particular smallgrowers, in Argentina may encounter a number of difficulties in implementing the EurepGAP standard. Such difficulties can be discussed in NTWGs and may also need to be reflected in a possible national GAP protocol. Of particular importance are the needs and conditions of smallholders.

Specific concerns and requirements of smallholders

The EurepGAP standard may cause reduced participation of small-scale producers in supply chains. Consequently, these producers will become dependent on links with large exporters that have sufficient capabilities to comply with the EurepGAP standard and to cope with the costs of inspection and certification.

The introduction of a national GAP for Argentina would not significantly change this situation, because its benchmarking with EurepGAP will require full compliance with all applicable requirements of the EurepGAP General Regulations and the Control Points and Compliance Criteria (CPCC).

Small-scale producers tend to have particular difficulties with internal self-inspection (CPCC 2.2), record keeping (CPCC 2.3), site-management (CPCC 4.2), and the application of fertilizers (CPCC 6.2) and crop protection products (CPCC 8.3). They also tend to face difficulties in meeting the requirements concerning storage of fertilizers (CPCC 6.4) and crop protection products (CPCC 8.8), hygiene procedures in harvesting (CPCC 9.1) and produce handling (CPCC 10.1). Risk assessments, for example for new plantings (CPCC 4.1) and hygiene in harvesting (CPCC 9.1.4), are difficult to implement and may need to de carried out at the group level to facilitate the process.

In Argentina, laboratories generally are not yet accredited to ISO 17025, or an equivalent standard for testing, as required by the control points on crop protection residue analysis (CPCC 8.7) and water quality (CPCC 10.2), and the analyses required by these control points pose difficulties for small-scale producers. In addition, export companies normally do not inform producers about the results of their own analyses.

Some agrochemicals are not officially registered in the country for use on certain crops, although they are in other countries of the region and in the country of destination. As the procedures for registration are expensive, dealers tend to register only those crop protection products that are used for the fruits and vegetables for which there is high demand, but not for several others. This renders it difficult to comply with the requirement to use only crop protection products that are registered in the country of use for the target crop where such a registration scheme exists (CPCC 8.2.2). This affects, for example, the cultivation of bilberries, avocados and figs.

EurepGAP National Technical Working Group

According to its website, "EurepGAP intends to link its global implementation activities closer to the grower, while at the same time seeking to gain qualified input from national experts in their own language with respect to specific legal and structural conditions within the different areas covered by EurepGAP". The establishment of EurepGAP NTWGs should help achieve this objective. The NTWGs work in close cooperation with the EurepGAP secretariat and the Technical Standards Committee. They are intended to support and facilitate EurepGAP implementation and foster continuous improvement. NTWGs for fruit and vegetables have been established in some 14 countries, including 5 developing countries (Argentina, Brazil, Colombia, Malaysia and Turkey). The ArgenINTA Foundation (Fundación ArgenINTA) is the host organization of the NTWG in Argentina;[24] there is also an NTWG for the Integrated Farm Assurance (IFA) protocol, which is hosted by Orgainvest Latinoamericano (OILA).

The NTWG was constituted and began its activities in June 2004, with the following objectives:

- To elaborate, in coordination with official institutions, adequate legislation to facilitate the fulfilment of certification requirements.
- To establish implementation guidelines for each sector.
- To make the fruit and vegetable producers aware of EurepGAP norms.
- To adapt the EurepGAP protocols to the specific conditions in Argentina.

The NTWG meets monthly. Its membership comprises exporters, several producer associations, certification bodies, official institutions, agrochemical suppliers and the chamber of independent laboratories (CALIBA). The producer associations are: the Argentine chamber of berry producers (CAPAB), the citrus federation (FEDERCITRUS), the Phytosanitary Association of Northeast Argentina (AFINOA) and CAFI (representing producers of pears, apples and other fruit). Regional Working Groups were formed in the Argentine northwest (NOA) and in the Cuyo region.

Group certification (EurepGAP Option 2) as an option for small-scale producers

Option 2 certification is a viable option for small-scale producers who participate in already legally

[24] The NTWG was originally hosted by the Argentine Chamber of Integrated Fruit Producers (CAFI).

established producer groups or are suppliers of large exporters. However, small-scale producers who create new groups with a view to achieving EurepGAP certification tend to face a number of constraints. In particular, they generally lack: a legal entity, an organizational structure, a quality management system, sufficiently trained staff and/or sufficient financial resources.

These producers urgently require support to develop affordable quality management systems that would enable them to participate in global value chains. At present, Option 2 certification is obtained mainly by small producers who are linked with an export company that supports its suppliers in implementing a quality management system. Examples exist in Argentina's organic agricultural sector of small producers forming groups to obtain certification, which has resulted in larger sales volumes for them. These producers do not require a quality system, but certification bodies individually visit all of them.

Role of the Government

In Argentina, SENASA, the National Health and Agro-alimentary Quality Service, operates a number of programmes that are relevant for different aspects of GAP implementation.

Fresh Fruit and Vegetable Products Control System (SICOFHOR): SENASA is implementing this system to promote good agricultural practices and good manufacturing practices at different stages of the FFV supply chain.

National Program of Quality Certification in Foods – Resolution 280/2001: This programme supports the certification of quality attributes of products and/or processes, and participation is voluntary. It is applicable to all types of food. The producer or processing company seeking certification assumes the primary responsibility for following procedures, carrying out effective registration and meeting protocols and national norms.

Federal Control System of Agrochemical and Biological Products (SIFFAB): Legislation makes SENASA responsible for controlling the registration of crop protection products, fertilizers and soil conditioners grants. Apart from carrying out phytosanitary controls, other objectives of the system are to ensure traceability, promote the correct operation of the equipment used in the application of plant protection products, enhance the knowledge of those who apply agrochemicals, and ensure responsible disposal of waste and packages resulting from the use of agrochemicals. This system is of particular relevance for compliance with EurepGAP requirements.

Argentine National System of Surveillance and Monitoring of Agricultural Plagues (SINAVIMO): This system works through a cooperative network. Its general mission is to provide up-to-date information on the phytosanitary conditions of the main crops.

More activities are required to cover all production regions, and especially to reach out to small-scale farmers. Apart from supporting the above-mentioned programmes, the Government could help promote good agricultural practices by focusing on:

- Creating or enhancing awareness among producers.
- Elaborating criteria and parameters to be considered when assessing new sites for FFV production.
- Assuring effective control of some elements that are referred to in EurepGAP control points: quality of seeds, GMOs, agrochemicals and labour laws;
- Offering conditions for compliance (e.g. facilities for the disposal of empty packages of agrochemicals).
- Effectively monitoring companies that supply services and inputs relevant to GAP, such as providers of calibration products and services, laboratories and suppliers of fertilizers and agrochemicals.

In Argentina, no government-run quality assurance schemes exist, and there is no attempt to promote a country brand as in Chile and Costa Rica.

Conclusions and recommendations

In general, large producers and exporters of FFV to the EU have managed to achieve EurepGAP certification when necessary. In certain cases, they have also assisted at least some of their suppliers in complying with EurepGAP requirements. However, small-scale producers tend to encounter major difficulties in meeting those requirements. Option 2 certification may be a viable option for small-scale producers who are members of already legally established producer groups or are suppliers of large exporters.

Several actions are needed to support the integration of small-scale producers into the fruit and vegetables supply chain, including, as appropriate, support by the FAO and UNCTAD. Some of the main actions could include:

- Identifying specific requirements of the EurepGAP standard that small-scale producers find difficult to comply with, and facilitating discussions among stakeholders and with the standard-setting organization on appropriate (including alternative) ways to ensure compliance.
- Supporting the establishment of quality management systems according to EurepGAP's Option 2 for small-scale producers.
- Supporting local institutions for rural extension services and certification.

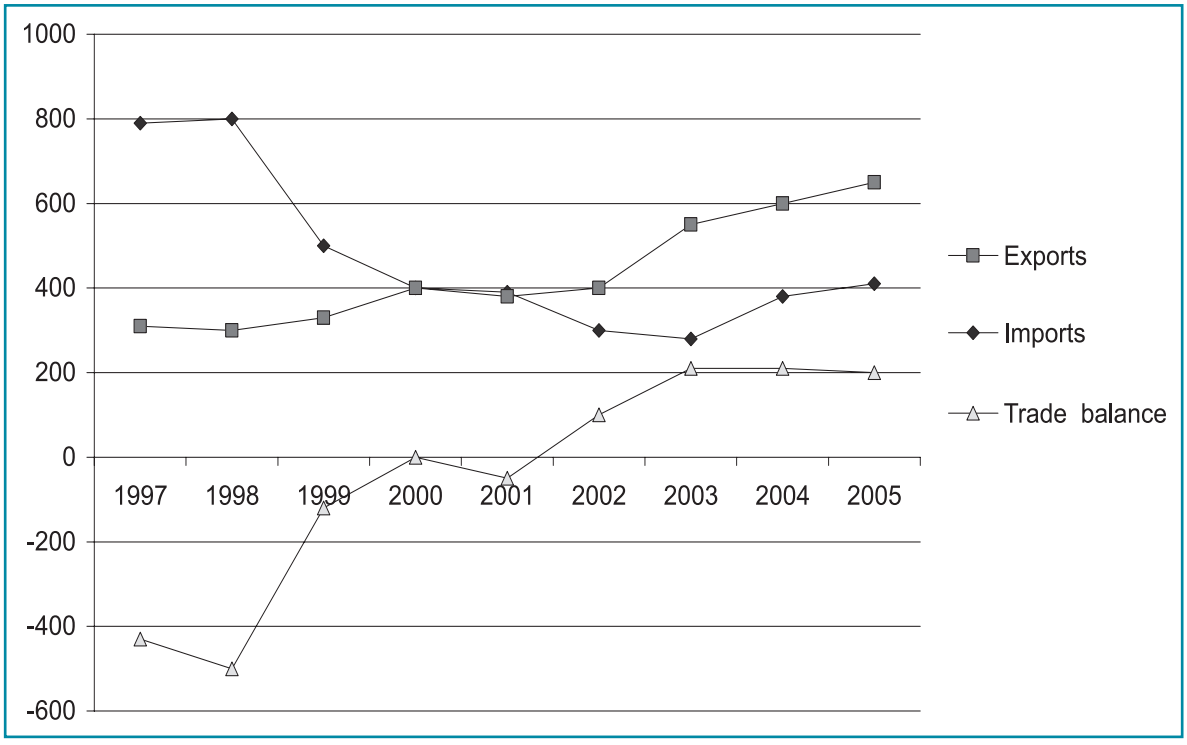
BRAZIL[25]

Fresh fruit and vegetables: production and international trade

Brazil is the third largest producer of fruit and vegetables among developing countries, after China and India (statistical annex, table A.1). Its total production of fruit and vegetables was 43.8 million tons in 2004, representing 3.2 per cent of the production of all developing countries. The fruit sector, which occupies an area of 3.4 million hectares, is of considerable strategic interest to Brazilian agro-business. This is largely because of its growing contribution to foreign exchange earnings and its role in rural development and employment.[26] Moreover, the FFV sector helps to retain workers in rural communities. FFV production is labour-intensive, generally requiring greater skills, training and awareness among rural producers and workers. It helps earn them higher incomes and generally provides decent standards of living, both to smallgrowers and to those working in large-scale projects.

The FFV sector achieved a trade surplus of $230.5 million in 2005, compared to a trade deficit of $473 million in 1997 (figure 6). In addition, it provides inputs for Brazil's processed fruit exports. Brazil's share in developing countries' exports of FFV (2.6 per cent in 2004, in value terms) is smaller than its share in developing countries' production, because of large domestic consumption. In 2005, the value of FFV exports was $692 million (COMTRADE); fruit exports (excluding nuts) rose to $448 million (65 per cent of total FFV exports), from $248 million in 2003 and $175 million in 2000. According to the Brazilian Fruit Institute, the goal is to further increase fresh fruit exports to $1 billion by 2010 (Instituto Brasileiro de Frutas, IBRAF).

Figure 6. Brazil's FFV trade:
exports, imports and trade balance, 1997-2005 ($ million)



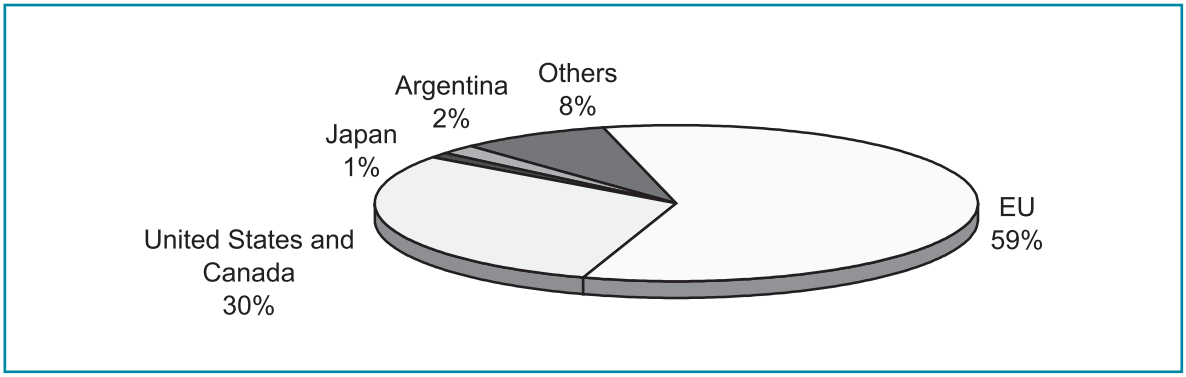
[25] This section is based on the country case study prepared for UNCTAD by Paul Espanion (Instituto Biodinâmico (IBD)/ Serviço Brasileira de Certificacões(SBC)), together with Daniela Mariuzzo (ECOLOG Consultoria), Juan Rojas (SBC), Sergio Pimenta and Reinaldo Rodrigues (Instituto de Ecologia Aplicada) and Alexandre Harkaly (IBD) (2005).

[26] In 2003, the fruit sector accounted for 13 per cent of Brazil's total agricultural GDP. The fruit sector generates direct employment for 5.6 million people, or 27 per cent of Brazil's total agricultural employment. It is estimated that for each $10,000 invested in fruit production, 3 permanent direct and 2 indirect jobs can be created (Andrigueto, Nasser and Teixeira, 2006)

Only a relatively small proportion of FFV production is exported because most fruit and, in particular, vegetables are sold in the domestic market. In 2003, around 9 per cent of apples and between 3 and 4 per cent of bananas and grapes (in volume terms) were exported (Ministry of Agriculture, Livestock and Food Supply, *Yearbook 2003*). And only 0.4 per cent of oranges were exported as fresh fruit, mainly because a significant share of production is processed and exported as fruit juice: Brazil's exports of orange juice were worth an average of $1.1 billion per year during the period 2003-2005. Overall, it is estimated that only around 2 per cent of Brazil's fruit (in volume terms) is exported (Andrigueto, Nasser and Teixeira, 2006).

The principal fresh fruit exported are melons, grapes, mangoes, apples, bananas, papayas and citrus fruit (lemons, oranges and tangerines), which together account for around 95 per cent of the value of Brazil's fresh fruit exports. The EU-15 is Brazil's largest and most dynamic export market: its share in Brazil's total FFV (i.e. fruit, nuts and vegetables) exports in 2005 was 60 per cent (figure 7); and as much as 84.5 per cent of the country's fruit (except nuts) exports in 2005 (in value terms) went to the EU-15 (figure 8), up from 71.2 per cent in 2000.

Figure 7. Brazil: Structure of exports of FFV (HS 07-08), in value terms, by market of destination (%), 2005



Exports of nuts amounted to $228 million (33 per cent of Brazil's total FFV exports) in 2005. These were largely cashew nuts ($187 million), which were exported mainly to the United States and Canada.

Exports of fresh vegetables fell from $22 million in 2002 to $15.6 million in 2005 and represented only around 2 per cent of Brazil's FFV exports in the latter year (table 7). This was largely due to a sharp decline in exports to Argentina. Over the same period, exports to the EU-15 increased, but remained small.

Figure 8. Brazil: Structure of exports of fresh fruit (HS 0803-0814), in value terms, by market of destination (%), 2005

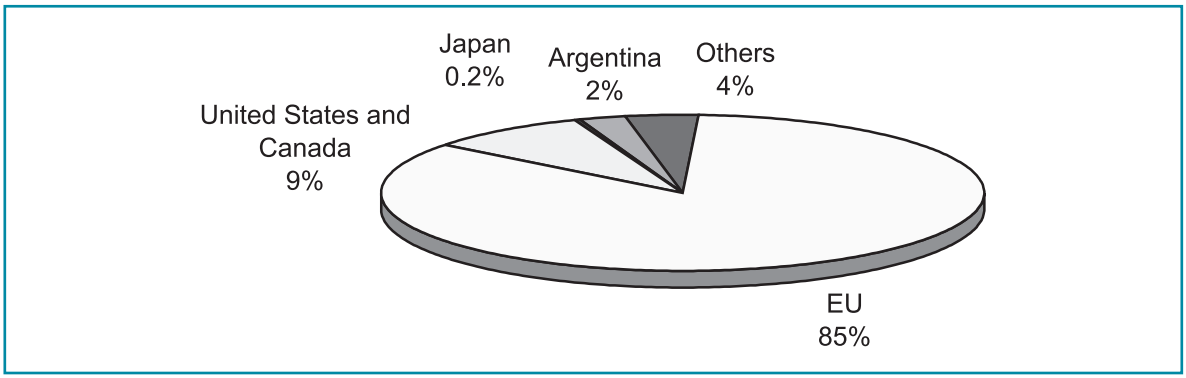


Table 7. Brazil: Exports of FFV to the world and the EU-15, 2003-2005

Product	HS codes (HS96)	Exports to the world, 2003-2005 ($ million)			Exports to EU-15, 2005		Share of FFV in Brazil's exports, 2005	
		2003	2004	2005	Value ($ m)	Share in FFV exports to the world (%)	Exports to the world (%)	Exports to the EU-15 (%)
FFV	07-08	518.0	606.2	692.4	415.1	59.9	100.0	100.0
Fruit	0803-0814	345.3	377.0	448.3	378.9	84.5	64.8	91.3
Melons	080711-19	61.8	67.3	98.4	97.1	98.6	14.2	23.4
Grapes	080610	59.9	62.8	107.3	90.5	84.4	15.5	21.8
Mangoes	080450	75.7	64.3	72.7	53.8	74.1	10.5	13.0
Apples	080810	37.8	72.6	45.8	42.5	92.9	6.6	10.2
Bananas	080300	30.0	27.0	33.0	19.7	59.6	4.8	4.7
Papayas	080720	29.2	26.6	30.6	24.7	80.7	4.4	6.0
Lemons	080530	16.9	18.3	26.3	25.6	97.4	3.8	6.2
Oranges	080510	13.3	21.5	9.0	7.8	87.6	1.3	1.9
Tangerines	080520	6.2	8.2	6.3	1.9	30.8	0.9	0.5
Frozen fruit	0811	6.3	5.2	6.3	4.4	69.2	0.9	1.1
Pineapples	080430	2.8	6.1	6.1	4.8	78.5	0.9	1.2
Figs	080420	1.7	2.1	2.1	2.2	97.1	0.3	0.5
Other fruit		3.5	5.2	4.4	3.8	86.8	0.6	0.9
Nuts	0801-0802	159.0	215.1	228.5	29.4	12.9	33.0	7.1
Vegetables	07	13.7	14.2	15.6	6.8	43.4	2.3	1.6

Source: COMTRADE

Private-sector protocols

Several private-sector protocols play an important role in international markets for FFV. Brazil's exports seek to conform mainly with EurepGAP for the EU market in general and Tesco Nature's Choice (TNC) for the United Kingdom market. The British Retail Consortium's (BRC) standards are important only for frozen and processed fruit. These protocols have several requirements in common, but there are also some differences. The common requirements concern:

- Food safety (absence of any chemical, physical and/or microbiological contamination);
- Traceability;
- Crop protection products and other products, which must be registered in the country of production and authorized in the country of destination; and
- Protocols that also cover workers' health and safety.

The main differences are:

- Standards are applicable to different stages of the supply chain (pre-farm gate, post-farm gate). For example EurepGAP is applied at the pre-farm-gate level (i.e. primary production). The standard is relevant for growers/farmers. Conversely, the BRC applies a post-farm-gate standard that covers food processing and packaging (see also the previous section on Argentina).
- Standards may or may not require a quality management system, such as ISO 9000. For example, the Safe Quality Food (SQF) standards differ from the BRC standard in that the latter requires conformity with HACCP, but not with ISO 9000 on food quality.
- Some standards, such as EurepGAP, require a commitment to continuous improvement, while others do not.
- Whereas EurepGAP, BRC, Tesco Nature's Choice (TNC), the International Food Standard

(IFS) and Brazil's Produção Integrada de Frutas (Integrated Fruit Production) (PIF, see box 2 below) include environmental protection, the Safe Quality Food standard (SQF) does not make reference to environmental issues.

- Brazil's PIF is the only protocol that covers product quality parameters such as colour, size, Brix (a minimum maturity criterion) and pH level (a measurement of the level of acidity).

In addition to industry-wide protocols, individual buyers may also insist on certain requirements. In response, a number of Brazilian producers implement specific quality programmes or management systems, such as environmental management systems conforming to the ISO 14001 standard and the SA 8000 standard that addresses social responsibility.

Producers engaged in organic agriculture also need to certify their production in accordance with the organic regulations of the importing market (for example Council Regulation 2092/91 for the EU market or the United States National Organic Program for the United States market) for their products to be labelled as organic.

Awareness among producers and exporters

Apart from large producers/exporters who maintain direct links with their buyers (importers, distributors, retailers, wholesalers) in the EU, awareness of existing public-sector regulations and private-sector standards in external markets is generally low. Large exporters often do not share information, as they perceive it as a tool to increase competitiveness vis-à-vis producers who ignore the new norms. Inmetro's Exporter Alert system (*Alerta Exportador*) provides registered users with information on new requirements, but only relating to those based on government regulations that have been notified in draft form to the World Trade Organization (WTO).

National GAP programmes

Given the trend towards tighter food safety requirements in international markets, in 1999 Brazil started to develop the PIF, a national quality assurance programme.[27] The Ministry of Agriculture, Livestock and Food Supply (MAPA) requested EMBRAPA (the Brazilian Agricultural Research Company) to elaborate the first PIF protocols. The first pilot projects involved apples, grapes, mangoes and citrus fruit. Box 2 provides some basic information on PIF.

The drafting of the protocols was, to a large extent, based on the concept of integrated production (as noted in box 1) and on the EurepGAP protocol for fruit and vegetables, although government entities and producers knew very little about this latter protocol.

The first PIF regulation was published in 2001, and by 2006 over 1,200 producers, with a combined area of 40,000 hectares and a production volume of over 1.2 million tons, were participating in the PIF programme (DEPROS/SDC/MAPA, 2006).

Unlike EurepGAP, PIF standards are crop-specific, having been developed (or are under development) for apples, bananas, cashew fruit, coconuts, citrus fruit, figs, grapes, guavas, kakis (persimmon), mangoes, melons, papayas, passion fruit, peaches and pineapples. In addition, the scope of PIF is larger than that of EurepGAP, in that apart from food safety, workers' health, safety and welfare, and

[27] Apple producers, through the Brazilian Association of Apple Producers (ABPM), had approached MAPA alleging increasingly strong pressures from international markets to provide guarantees concerning the production process. Brazil needed an instrument for providing guidance on good agricultural practices to producers and could also institutionalize a production system based on local as well as international market requirements in order to create credibility and confidence. In response to a request by the ABPM, MAPA created PROFRUTA, the Fruit Production Development Plan, which initiated 57 projects, funded by the 2002/2003 Pluri-Annual Plan (PPA) that aimed at improving the quality and competitiveness of the Brazilian fruit sector (Andrigueto, Nasser and Teixeira, 2006).

environmental issues,[28] PIF also establishes technical and quality criteria for planting, crop handling, calibration, coloration and Brix, among others. The PIF standards include most of the food safety, social and environmental aspects of the EurepGAP standard.

Box 2. Brazil's PIF system

Brazil's PIF system sets voluntary standards for the production of high-quality, healthy fruit, which meet requirements concerning environmental sustainability, food safety, workers' health and safety, and economic feasibility. It seeks to ensure effective control and tracking of the origin of products and processes (traceability) in accordance with the requirements set by the PIF system as well as contributing to the competitiveness of the fruit sector.

PIF has been developed in response to requirements of export markets, in particular the EU markets. It is based on the model of integrated fruit production, which is a systemic approach to agriculture. The International Organization for Biological Control (IOBC), which, in the international context, has provided leadership in developing the concept of integrated production, general guidelines and crop-specific technical guidelines, defines the concept as a "farming system that produces high quality food and other products by using natural resources and regulating mechanisms to replace polluting inputs and to secure sustainable farming. Emphasis is placed on a holistic systems approach involving the entire farm as the basic unit, on the central role of agro-ecosystems, on balanced nutrient cycles, and on the welfare of all species in animal husbandry. The preservation and improvement of soil fertility and of a diversified environment are essential components. Biological, technical and chemical methods are balanced carefully taking into account the protection of the environment, profitability and social requirements."

The PIF system contains General Guidelines for Integrated Fruit Production and General Technical Norms for Integrated Fruit Production, classified as "mandatory", "recommended", "forbidden" and "allowed with restrictions". The general technical norms provide a basis for the development of specific technical norms (STNs) and an agrochemical chart[a] for each crop and production region.

A Technical Commission for PIF was created in 2001 to advise and support MAPA in the implementation of the PIF system. Its competencies include articulating and proposing actions that are considered necessary for the full regulation and implementation of the provisions stated in the General Guidelines, General Technical Norms and STNs, and evaluating the STNs. The Technical Commission for PIF has eight members, of which four represent the government sector (two representatives of MAPA, one from Inmetro and one from EMBRAPA) and the other four represent the private sector. In addition, there are technical commissions for each product with a similar structure. The latter play an important role in proposing STNs.

The PIF document identifies a number of prerequisites for effective PIF implementation (such as training), and highlights the need for infrastructural support. Support includes: (a) the establishment of an adequate technological base, including through technical cooperation and partnerships with institutions affiliated to the National System for Agricultural Research (NSAR) and private-sector research institutes; (b) the establishment of a system of observation/alert stations; (c) the establishment of laboratories to carry out analyses of chemical residues according to internationally accepted methodologies; (d) the application of sample methods in accordance with international standards; (e) information management; (f) the promotion of regional centres for collecting pesticide containers; and (g) partnerships with the private sector, local governments and non-governmental organizations (NGOs). The PIF document also sets out regulations for conformity assessment of the PIF.

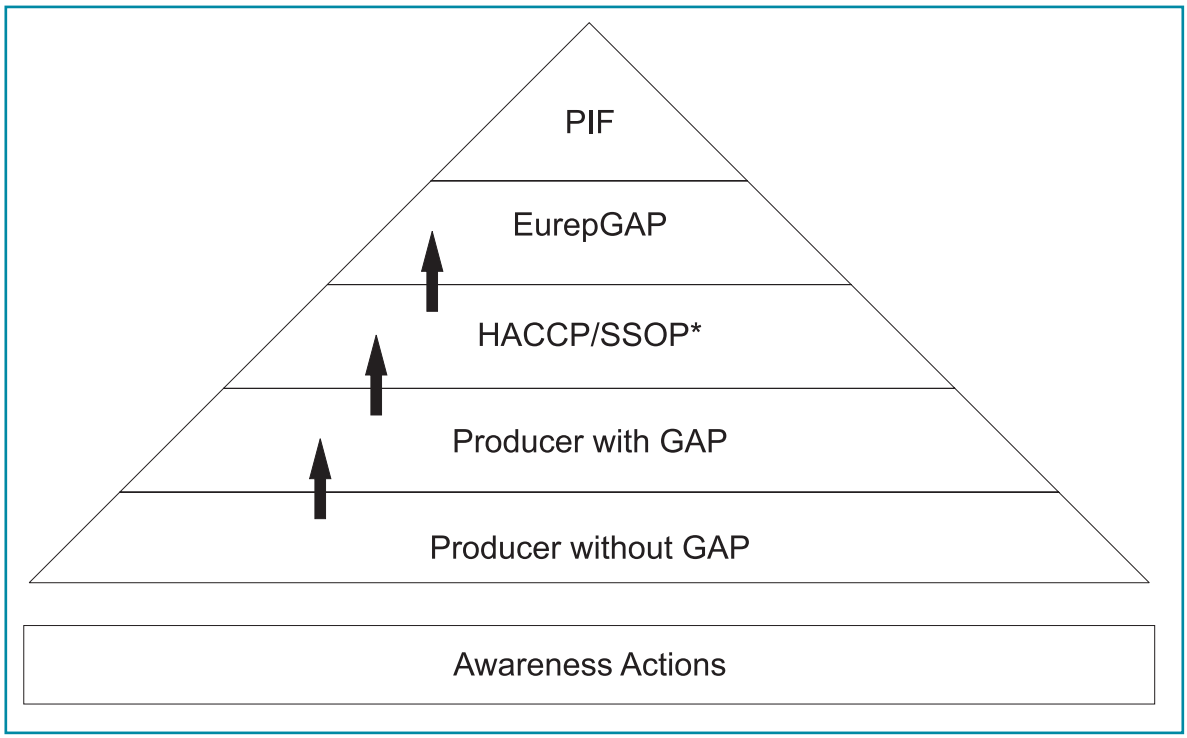
Source: Ministry of Agriculture, Livestock and Food Supply, 2002.

[a] A list of agrochemicals which are registered for use on specific crops and for specific pests, in accordance with existing legislation, while considering their efficiency, risks of possible pest resistance and persistence, toxicity, residues in fruit and environmental impact according to the product application and in accordance with the specific technical norms for each crop and region.

[28] Environmental criteria in PIF originally focused on reduction in the use of agrochemicals with potentially harmful environmental impacts (apart from the reduction of residues, largely for food safety reasons). When efforts were made to bring the environmental criteria of the PIF protocol closer to those of EurepGAP, further environmental criteria were incorporated into the PIF protocol which go beyond those concerned with reduction in the use of agrochemicals. Of particular relevance in this context is PIF's section 3.1on Natural Resources (Luciano Gebler, Embrapa Uva e Vinho, Avaliação de Impactos Ambientais da Produção Integrada de Maçãs. http://www.cpatsa.embrapa.br/sbpif6/arquivos_palestras/Palestra_Gebler.doc).

The PIF protocols thus imply requirements that in many respects are more stringent than the EurepGAP standard for fruit and vegetables. Andrigueto, Kososki and de Azevedo Oliveira Domingo (2005), for example, place PIF at the top of a pyramid of fresh fruit production systems, based, among other factors, on a more advanced level of organization, technology and handling (figure 9).

Figure 9. Pyramid of fresh fruit production systems



Source: Adapted from JRA/ARK-MAPA.
*SSOP – Sanitation Standard Operating Procedures

The area that complies with PIF represents around 1.5 per cent of the total area under fruit production in Brazil (Andrigueto and Kososki, 2005).[29] Andrigueto, Nasser and Teixeira (2006) cite examples of significant impacts and positive results of PIF in key production areas. For example, in the Vale do Rio São Francisco, 36 per cent of the area planted with vine and 35 per cent for mango production is now cultivated in accordance with PIF criteria. The Integrated Apple Production (PIM) system has had an important impact. In 2005, 283 apple producers, occupying an area of 17,319 ha (45 per cent of the total area planted with apple trees) in the States of Santa Catarina, Rio Grande do Sul and Paraná, and producing 461,860 tons, were participating in PIM. The ABPM believes that during the 2005/06 harvest, the third harvest eligible for receiving the PIF seal, the PIM system will cover 60 per cent of the total area devoted to apple production.[30]

The PIM is believed to have resulted in an increase of about 3 per cent in employment and income. This PIF protocol for apples has also contributed to significant cuts in production costs (of around 40 per cent in the case of fertilizers) and has led to a reduced application of agro-toxics and lower agrochemical residues. In general, PIF is expected to have contributed to environmental improvement, product quality and to greater occupational health and safety of rural workers (see next section).

Some have argued that the Brazilian national GAP standard may in certain respects be too comprehensive

[29] In countries like Austria, the Netherlands, Switzerland and the United Kingdom, the area under integrated fruit production represents between 70 and 85 per cent of the total area under fruit production.

[30] Apples with the PIF label have been commercialized in Brazil's domestic market and three EU countries (the Netherlands, Spain and the United Kingdom). The rapid increase in Brazil's apple exports in recent years, in particular to the EU market, is to a large extent the result of the improved quality and competitiveness of its apples (table 7 shows that apple exports increased 92 per cent in 2004, but fell in 2005).

and stringent, demanding enormous efforts from producers to adapt to its requirements, but lacking recognition by the market, unlike EurepGAP. Small producers will only be interested in national GAP programmes to the extent that these provide a bridge between their own conditions and needs and the requirements of buyers.

The official PIF documents show that this programme, which covers the major crops, focuses on exports and on enhancing the know-how of producers to offer products for the export market. The focus on exports could benefit larger producers with export experience, but it appears to be less important for the domestic market. Local consumers have little or no knowledge of the programme and generally do not require PIF compliance. Supermarkets may be interested in procuring fruit and vegetables that comply with PIF as they are at the end of the supply chain and need to ensure the quality and safety of the food they sell. Some supermarket chains, such as the French Carrefour Group and the Brazilian Group *Pão de Açucar,* have developed their own quality assurance protocols and seals.

National institutions involved in the PIF programme are seeking to increase producer participation by offering subsidies, for instance with resources through the programme *Bônus Certificação* of SEBRAE, for small and medium producers. These subsidies are generally not available for EurepGAP certification, there being just one well-known case of a major fruit producer, Petrolina-Juazeiro, receiving such subsidies (80 per cent of the costs of EurepGAP certification). PIF certification is nevertheless developing more slowly than expected, perhaps because of its low recognition in international markets, in particular compared with EurepGAP.[31] Many producers are more interested in a certification programme that enjoys international recognition, especially when importers or exporters exercise pressure on them to comply with GAP. Some even bear the costs of becoming EurepGAP-certified.

The Ministry of Agriculture is also developing a new project based on the PIF experience called Sistema Agropecuário de Produção Integrada (SAPI), or System of Integrated Agricultural Production, for other crops such as vegetables and grains, flowers and products of animal origin.

Benefits

The following are some of the main benefits that can accrue from the development of GAP standards and their implementation:

- With regard to the environment, the reduced use of crop protection products results in lower toxic residues and contributes to the conservation of natural areas and the improvement of local biodiversity. The PIF programme has been successful in substantially reducing the use of different kinds of chemical pesticides in various crops (table 8).
- In the social area, rural producers are required to train their employees, comply with labour regulations and improve worker's health and safety. However, social welfare requirements vary and depend on the specific GAP standard. Training and pilot projects can play an important role in this aspect of PIF.
- From an economic and commercial point of view, even though GAP-certified producers do

[31] On 23 October 2006, MAPA published draft regulation 58 (*Instrução Normativa*, IN-58) on pest residues, which included a requirement according to which exporters of fruit to the EU should source their products from producers and packhouses that comply with the PIF regime (article 2). IN-58 was discussed at a special meeting of the Sectoral Chamber of Fruit Growers (*Câmara Setorial da Fruticultura*) of IBRAF on 13 November 2006, but was revoked by IN-67 of 8 December 2006. The latter contains provisions concerning the monitoring of pesticide residues in fruit exported to the EU and requires exports to the EU to register with MAPA, but no longer contains the requirement to source fruit products exported to the EU from producers that operate under the PIF regime. Adherence to PIF may provide some advantages in obtaining phytosanitary certificates. In accordance with Regulation 38 of the National Secretary of Agricultural Defense (Secretaria de Defesa Agropecuária) published in the Official Journal of 20 November 2006, producers who adhere to PIF can use their documents on production and post-harvest inspection to obtain a phytosanitary certificate (Certificado Fitossanitário de Origem) which is necessary for export.

not receive a higher price for their products, they generally find it easier to commercialize their produce. GAP may also result in higher salaries for employees, and generate a range of long-term economical and social benefits. For example a reduction in pesticide use has resulted in lower costs to producers.

Table 8. Indicators of reductions in pesticide use achieved through PIF (%), 2005*

	Apple	Mango	Grape	Papaya	Cashew	Melon	Peach	Citrus
Insecticides	25.0	70.0	89.0	35.7	25.0	20.0	66.0	75.0
Fungicides	15.0	31.0	42.0	30.0	30.0	10.0	39.0	20.0
Herbicides	67.0	95.0	100.0	78.0	-	-	50.0	66.7
Acaricides**	67.0	72.0	100.0	35.7	-	20.0	87.5	45.0

Source: DEPROS/SDC/MAPA, 2006.
* Reductions achieved in major producing areas (in particular states of Brazil) covered by PIF, compared to pesticide use in conventional production of each crop.
**Acaricide is an agent, usually a chemical, that kills mites.

GAP programmes may also improve compliance with relevant national legislation, for example by enhancing understanding among producers. In this context, private-sector certification bodies involved in verifying compliance with legislation as one of the requirements for GAP certification play an important role in monitoring compliance, including compliance with environmental and social standards.

Obstacles to the development and implementation of GAP

Some general obstacles to the implementation of GAP aimed at meeting either PIF or EurepGAP standards, include: (a) complex technical requirements; (b) implementation and personnel costs; (c) high costs of certification (d) lack of markets for the certified products and lack of international recognition of national GAP codes; and (e) inadequate extension services.

The national PIF programme has a well-structured technical and normative content, but considering the low levels of education of most producers, the technical requirements may be too detailed and strict, in particular when compared with other GAP programmes. These, along with cultural barriers, may hinder wider acceptance, especially by small producers.

Furthermore, individual small-scale producers lack the means to make the necessary investments for GAP implementation and compliance. Flanking measures implemented by the Government, including measures to reduce implementation costs for producers, may help overcome this obstacle. The creation or strengthening of producer associations, either on the producers' own initiatives or with government support, may also be useful.

Costs of certification may be another obstacle, especially for small producers. In the case of PIF, certification costs may be particularly high for producers that grow different kinds of fruit, as they need to certify and obtain a label for each category.

Another drawback is that the PIF programme is not well recognized in international markets. To gain such recognition, greater harmonization of PIF norms and those of programmes which are recognized in international markets, such as EurepGAP, might be necessary.

The importance of extension services for meeting the GAP requirements is highlighted in more detail below.

In addition, there are a number of specific obstacles to GAP implementation such as:

- Shortcomings in the registration of crop protection products. One key constraint in implementing GAP standards is the issue of pesticides registration. The PIF agrochemical charts play an important role in providing information on agrochemicals that are registered for use in each specific crop.
- Insufficient information and training provided to rural workers and technicians. In this context,

the training provided on PIF principles and implementation is worth mentioning.

- Lack of a well-articulated campaign for the dissemination of information on the benefits of GAP schemes for producers and consumers.
- Lack of capacities of small producers to meet traceability requirements, make the necessary investments and provide training to their workers. Many small producers fear that investments and the higher costs involved in GAP implementation will not be compensated by better prices.
- A number of large exporters source FFV from many suppliers, and this may make it difficult to trace the origin of production and provide quality assurance.
- Lack of facilities to assist small producers in easily accessing information, for example on MRLs and active substances that are permitted for use in pesticides applied to crops exported to the EU.

Small producers face a number of other obstacles to GAP implementation, for example:

- Compliance with all relevant legislation may be particularly problematic for small producers in developing countries because of the lack of support services and financial resources.
- Compliance with a range of GAP criteria is difficult due the lack of infrastructure.
- Small producers may also find it difficult to implement proper record keeping and internal self-inspection.

Importance of stakeholder involvement in standards development

The relevant stakeholders need to participate in the development of GAP standards. In Brazil, the parties involved in the development of PIF standards are the Ministry of Agriculture, Livestock and Food Supply, EMBRAPA, Inmetro, the National Council for Scientific and Technological Development (CNPq), universities and research centres (over 200 institutions in all). Producers and producer associations often participate in technical meetings, and half of the participants in the Technical Commission for PIF represent producers. STNs are elaborated with the participation of associations of producers of the specific fruit category in question, or, where such associations do not exist, of individual producers. These norms are approved only after the viability of meeting the corresponding requirement is first field-tested in pilot farms. Yet the majority of small producers may, in practice, have little opportunity to influence the development of PIF standards.

Issues to be considered in a national GAP programme

For implementation of national GAP programmes to be effective, there are a number of prerequisites, such as training, rural extension services and infrastructural support (as recognized in the PIF document, box 2). Some of the issues requiring special attention are discussed below.

Addressing the problem of non-registered crop protection products
PIF and EurepGAP prohibit any use of non-registered crop protection products. However, in Brazil, many such products are registered only for some "major crops". The total or partial lack of registration of certain crop protection products that may be used for crops such as acerola, fig, guava, banana, peach, passion fruit and *açaí* (a tropical berry native to Brazil that resembles a blueberry), is a major obstacle to EurepGAP certification. The Government therefore needs to improve the provisions relating to pesticide registration.

Provisional registration should be allowed in order to facilitate certification of certain export-oriented production. In July 2005, the Ministry of Agriculture, Livestock and Food Supply submitted a provisional law for "obtaining Emergency Registration for pesticides and similar products" (*Portaría* 104) for public consultation. However, this legal procedure has only a limited effect. Consequently, registration remains an issue of concern.

A key question for small producers is whether they could join forces to push for international harmonization and/or bilateral agreements on pesticide use. For example, even if all avocado producers with an export interest were to join forces, they would probably still not be able to obtain the registration of a pesticide that is allowed for this crop in Europe.

Training
Lack of information and insufficient training of rural workers and technicians is another handicap. Currently, workshops are oriented largely towards consultants and certifiers, but less towards producers. They are charged for their participation in EurepGAP workshops. Training should be improved and should be free. In this regard it is noteworthy that important efforts have been made in the context of PIF: EMBRAPA, SEBRAE and other research institutions have already organized around 200 courses to disseminate PIF principles and prepare some 7,000 trainers to provide further training.

International recognition
As noted earlier, since EurepGAP enjoys wider recognition in international markets, producers with an export interest have little incentive to implement PIF. In any case, benchmarking of PIF might improve international recognition, but not necessarily its acceptance by farmers and exporters.

National recognition
There have been several attempts to introduce PIF-certified products into local supermarkets, but because of low levels of knowledge and the modest economic resources of local consumers, the PIF seal does not make much difference to fruit consumption in Brazil.

Promoting the PIF programme
A strong campaign showing producers, consumers, supermarkets and traders the advantages of PIF-certified fruits would help generate wider acceptance for the programme.

Small producers
Small farmers are often not able to implement the programme and do not expect economic benefits commensurate with the added expenses involved in implementing it. Official consultancy and funding programmes should therefore be intensified to enhance group certification of small farmers.

Information tools
There is no official service to assist small producers in accessing information on permitted and banned crop protection products and MRLs. Information is available only through the Internet and in English.

Supervision of certifiers
Some certifiers are offering consulting and certification packages, which is a clear conflict of interest, and not in line with the requirements of the ISO 65 guide on accreditation of certification bodies.

Certification infrastructure

The increasing demands for certification under different programmes have been motivating several certifiers to establish a presence in Brazil. The first certification bodies (CBs) came from Europe. Foreign and national CBs are physically located in strategic areas of production and their presence is likely to increase. Currently, some 15 CBs have been accredited, or are in the process of obtaining accreditation, to carry out EurepGAP, Tesco Nature's Choice (TNC) and/or PIF certification of fruit and vegetables.

The following CBs with headquarters or branches in Brazil have already been approved to carry out EurepGAP fruit and vegetable certification:

- SBC Serviço Brasileiro de Certificações Ltda;
- BVQI - Bureau Veritas Quality International do Brasil;
- WQS Certificação de Produtos Ltda;
- SKAL International do Brasil;
- BCS Brazil;
- IMO Brazil;
- Moody International Brazil;
- National Britannia Certification Ltd;
- OIA - Organização Internacional Agropecuária; and
- SGS ICS Certificadora.

The EurepGAP website lists the following provisionally approved CBs:

- TECPAR (Instituto de Technology de Paraná); and
- TUV Rheinland Brasil.

The following CBs have been accredited to carry out PIF certification:

- Instituto da Normalização na Segurança, Saúde, Qualidade, Produtividade, Avaliações e Juizo Arbitral (INOR);
- Det Norske Veritas Certificadora Ltda. (DNV);
- BVQI do Brasil Sociedade Certificadora Ltda;
- Instituto de Tecnologia do Paraná (TECPAR);
- Instituto Baiano de Metrologia, Normalização e Qualidade Industrial (IBAMETRO);
- Instituto de Avaliação da Qualidade de Produtos da Cadeia Agro Alimentar (CERTIFICA); and
- SGS ICS Certificadora Ltda.

Indicative certification costs are estimated as follows:

- Individual certification:
  - $1,000-$1,500 – administrative fee/certificate;
  - $700- $800 per audit; and
  - Plus travelling costs of the inspector.
- Group certification:
  - $200-$300 per producer; and
  - In addition, there are general administration and registration fees as well as travelling costs of the inspector.

Accreditation

Inmetro is responsible for accreditation of the certification bodies authorized to audit for conformity with the PIF standards. National CBs accredited by Inmetro and approved by FoodPLUS (the legal operator of the EurepGAP standards), have to pay high annual fees of $10,000–$50,000 to maintain their EurepGAP certification. These costs often are not fully incorporated in certification fees.

Facilitating EurepGAP certification

Despite the progress made in the development and implementation of the PIF system, many producers and exporters give priority to direct certification against the EurepGAP standard because it enjoys broad recognition in key export markets. Producers who grow more than one crop may also opt for direct EurepGAP certification to preclude the need to certify against different product-specific PIF protocols. Large producers have generally been able to obtain EurepGAP certification, but smallgrowers find it difficult without assistance.

Failure to meet the requirements of internationally well-recognized standards, such as EurepGAP, poses a greater risk to exporters than failure to meet the requirements of national GAP protocols. From this perspective, support to small-scale producers should focus on assisting them in meeting the relevant EurepGAP requirements. This may enable them to participate in the value chain without having to become dependent on links with specific customers. A benchmarked national standard may provide an opportunity to adapt the interpretation of EurepGAP requirements to local conditions and to generate stakeholder support (Garbutt and Coetzer, 2005). However, some have argued that national GAP standards that impose additional and more stringent requirements may, under certain conditions, even hinder the inclusion of small-scale producers in value chains.

National Technical Working Group for Fruit and Vegetables

A National Technical Working Group (NTWG) for Fruit and Vegetables was established in July 2006. It is hosted by the Instituto de Agrotecnologia (agro-technology institute)[32] in Petrolina, Vale do São

[32] http://www.agrotecnologia.org.br/sedeeurepgap.html

Francisco, State of Pernambuco (in northeast Brazil), and representatives of other production regions also participate in its work. The establishment of this working group is an important step forward. It could assume the following tasks:

- Develop national interpretation guidelines, an area in which work has already begun.[33]
- Forward proposals for updates and new protocols to the Technical Standards Committee (TSC) of EurepGAP.
- Organize EurepGAP train-the-trainer and CB workshops with national professionals with a view to reducing the costs of EurepGAP training workshops.
- Explore and, if considered appropriate, support national benchmarking processes.
- Exchange information and analysis with the national and, where relevant, product-specific PIF technical commissions.

However, NTWG host organizations must avoid conflicts of interest and ensure that all interested parties are invited to the meetings and receive the minutes.

Benchmarking

In 2005, the Brazilian Government expressed an interest in seeking benchmarking of the PIM standard (for apple production) to EurepGAP. The technical standard that incorporates the relevant EurepGAP requirements was published in September 2005. Brazil has not formally submitted an application for benchmarking to FoodPLUS, and currently is not actively pursuing such benchmarking.

Some work has been undertaken by experts from MAPA, Inmetro and other institutions, in consultation with some key producers and exporters, to compare the EurepGAP and PIF requirements. It was found that some 80 per cent of all requirements were very similar and benchmarking would not create any problems. Experts, however, identified certain differences, both with regard to conformity assessment issues and GAP requirements themselves. For example, self-inspection is an important requirement of the EurepGAP standard, whereas PIF relies largely on third-party conformity evaluation. Experts also found that certain requirements of the EurepGAP standard would not be relevant and/or appropriate in the Brazilian context. While some of the differences between EurepGAP and PIF approaches and requirements identified by the experts may be relatively difficult to reconcile, especially in the short term, in other cases problems may be more political than technical in nature. In this context, there is also concern that benchmarking would imply that possible future changes and adjustments in the criteria of PIF, which is a Government-owned scheme, would have to be submitted to (and be recognised as equivalent by) a private-sector scheme, like EurepGAP.

The benchmarking process is unilateral in the sense that it demonstrates that the PIF standard is equivalent to EurepGAP, but a EurepGAP-certified producer is not necessarily in conformity with PIF (which in certain respects has more stringent requirements).

Group certification

Group certification may be a viable option for small producers to obtain EurepGAP certification. However, the training and investment costs incurred in implementing and maintaining an internal control system tend to be high. The minimum number of producers in a group will depend on the turnover of the group and its capacity to maintain the internal control system.

In addition, large growers/exporters should be able to facilitate certification of their key suppliers (including those associated in producer groups) through outgrower certification under Option 1.

Extension services

Rural extension and support services are a necessary condition for GAP implementation. Services that need to be improved include the following:

[33] Daniel Velloso, President of the Instituto Agrotecnologia, in the newspaper *O Povo*, 12 September 2006 (http://www.opovo.com.br/opovo/opiniao/629136.html)

- Laboratory analysis: There are only a few professional laboratories for pest, soil and water analysis, and these are concentrated in the south and southeast of the country.
- Training and education (rural extension): Official professional and subsidized training activities involving all GAP standards are necessary to facilitate adherence, mainly by small producers, to GAP.
- Producer associations: Public institutions regularly promote associations of agricultural producers. The private sector, principally exporters, is also encouraging small producers to create producer associations to achieve quality and facilitate commercialization. Associations could offer many benefits. For example, they may enable their members to gain easier access to credit, improve the commercialization of their products, obtain different kinds of support services and request public- and private-sector extension services. However, more effective efforts are needed to promote producer associations that could facilitate GAP implementation.
- Financial support is needed, for example to facilitate GAP certification by small producers.

The PIF document explicitly recognizes that training and infrastructure support are essential for effective GAP implementation (see box 2). Andrigueto, Kososki and de Azevedo Oliveira (2005) describe a range of activities aimed at facilitating PIF implementation.

Government institutions involved in technical assistance and rural extension include EMATER (a company providing technical assistance and rural extension) and CATI (Coordination for Integral Technical Assistance).

The private sector can play an important role in providing support services through large producer associations such as ABPM, IBRAF, ABECITRUS (Brazilian Citrus Exporter Association), VALEXPORT (Horticulture Producer and Exporter association of the São Francisco river valley) and ABEPEL (Brazilian Lemon Producer and Exporter Association).

Roles of the Government and other stakeholders

The Government has a key role to play in coordination, issuing regulations and establishing procedures, providing the necessary infrastructure and support services (e.g. the provision of laboratories for analysis of pesticide residues and water), supporting training and publicity campaigns, and promoting associations of producers, in particular small-scale producers as well as public-private partnerships. The Government should also enact legislation for credible accreditation and certification. However, certification itself should be left to independent certification bodies.

Conclusions and recommendations

If there were appropriate extension services in place, Brazil would be able to enhance GAP implementation in its FFV production, in particular in the fruit sector, so as to achieve a greater degree of competitiveness in international markets. The national PIF system is very comprehensive and, in many respects (in particular in agronomic terms), more stringent than other GAP codes, including EurepGAP. Its strengths include successful reduction in the application of agrochemicals and pesticide residues, its emphasis on continuous training, research and development (R&D), capacity development through pilot projects, and the strong commitment of MAPA and other government institutions to ensuring its overall success. Yet the PIF system has encountered difficulties in gaining broad acceptance by different stakeholders and consumers. Greater efforts should be made to find an appropriate balance and harmonization of PIF with the requirements of international markets and the domestic market. There is also a need to promote greater involvement of retailers. All these should be taken into account in the further development and revisions of the system.

Many large producers and exporters have opted for direct EurepGAP certification, but this is more difficult for small producers. From a trade perspective, greater attention may need to be given to assisting smallholders to obtain direct EurepGAP certification through the group certification option. Since a quality management system is a key condition for group certification, practical guidance and training may need to be given to farmer groups on how to establish and implement such an internal control system.

The establishment of a NTWG for Fruit and Vegetables has the potential to facilitate GAP implementation, and presents an opportunity for national experts to provide inputs concerning the legal and structural conditions covered by various aspects of EurepGAP. The NTWG could also help with the development of national interpretation guidelines.

If benchmarking is sought, it might be appropriate to harmonize crop-specific national GAP standards so that producers could certify their entire production rather than having to seek certification for each crop. This would be especially helpful for those farmers, particularly smallgrowers, who tend to diversify their crops in order to reduce risks. One could argue that benchmarking PIF protocols to the EurepGAP standard could provide a good opportunity to foster international recognition of PIF and harmonization between PIF and EurepGAP requirements. Benchmarking could also be helpful for smallholders with an export interest, in particular those who benefit from the above-mentioned assistance for PIF certification provided by SEBRAE (with resources through the programme *Bônus Certificação*).

Large producers and exporters are likely to derive relatively few benefits from benchmarking as most of them are already EurepGAP-certified or can obtain certification if the market so requires. From this perspective, benchmarking may not be as pressing as many may think.

Nevertheless, the PIF programme should be revised and strongly promoted to gain larger recognition in the domestic market as well as by international importers and retailers. Brazil's FFV exports will continue to grow, but food security has to be assured, and social and environmental aspects need to be considered, whether through adherence to the EurepGAP programme or the national PIF programme.

COSTA RICA[34]

Production and export of FFV

Agricultural exports, particularly of fresh products, are important to Costa Rica's economy. They accounted for 32.9 per cent of the value of the country's total exports of goods in 2005 (down from 55.2 per cent in 1997); FFV exports accounted for 43.2 per cent of its agricultural exports and 14.2 per cent of its total exports. As a small country, most of Costa Rica's production of fruit and vegetables (4.1 million tons in 2004, table 2) is exported.

In 2005, the value of Costa Rica's FFV exports reached over $1 billion dollars, of which 42.2 per cent went to the EU-15 and 52.4 per cent to the United States (table 9). Fruit and nuts, in particular bananas and pineapples, represented some 91 per cent of the value of all FFV exports, with bananas alone accounting for 48.2 per cent (down from around 70 per cent in the late 1990s). Vegetables, largely manioc (cassava) and other tubers, accounted for 9 per cent (figure 10).

Table 9. Costa Rica: Exports of FFV to the world and the EU-15, 2003-2005

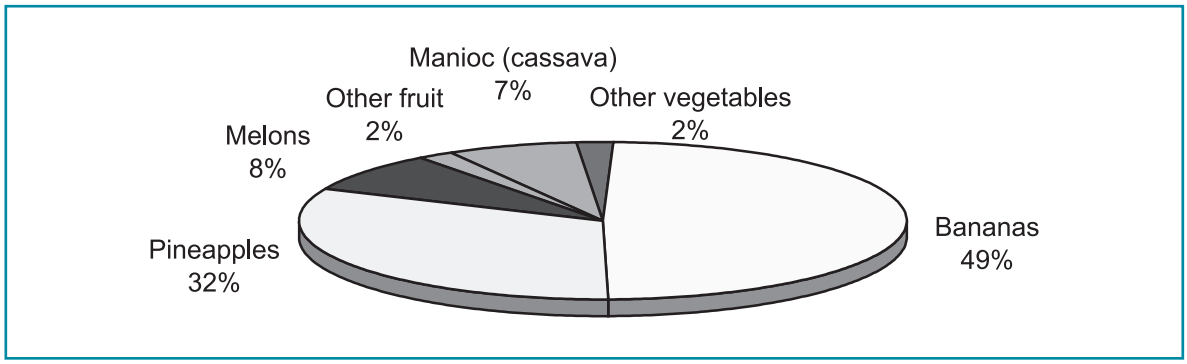
Product	HS code	Exports to the world, 2003-2005 ($ million)			Exports to EU-15, 2005		Distribution of FFV exports, 2005	
		2003	2004	2005	Value ($ m)	Share in exports to the world (%)	Exports to the world	Exports to the EU-15
FFV	07-08	912.8	988.0	1 017.3	429.8	42.2	100.0	100.0
Excl. bananas		350.2	431.6	527.3	218.9	41.5	51.8	50.9
Fruit and nuts	08	852.5	910.6	925.6	417.6	45.1	91.0	97.2
Bananas	0803	562.6	556.4	490.0	210.9	43.0	48.2	49.1
Pineapples	080430	198.9	257.2	328.7	161.3	49.1	32.3	37.5
Melons	080711-19	71.3	78.3	81.8	33.6	41.1	8.0	7.8
Fruit, frozen	0811	9.7	8.8	11.1	4.0	36.0	1.1	0.9
Mangoes	080450	3.7	4.1	6.0	4.2	70.0	0.6	1.0
Other		6.3	5.8	8.0	3.6	45.0	0.8	0.8
Vegetables	07	60.3	77.4	91.7	12.2	13.3	9.0	2.8
Manioc	0714	43.2	57.9	70.7	11.1	15.7	6.9	2.6
Other vegetables	070990	13.2	15.1	16.0	1.1	6.9	1.6	0.3
Other		3.9	4.4	5.0	-	-	0.5	-

Source: COMTRADE

Fruit exports to the EU-15 amounted to $417.6 million in 2005. During the period 1997-2005, the value of banana exports to the EU-15 fluctuated between $200 and $265 million per annum. Exports of pineapple have increased significantly in recent years. EU-15 import data show that Costa Rica increased its share of EU-15 pineapple imports from outside the EU (in volume terms) from 35 per cent in 2000 to 59 per cent in 2005, overtaking Côte d'Ivoire as the principal supplier (largely due to the successful introduction of a new variety and a greater emphasis on export-oriented production).

[34] This section is based on the country case study prepared for UNCTAD by Bernard Kilian (Sustainable Markets Intelligence Centre (CIMS) in collaboration with Lloyd Rivera, (CIMS) (2005).

Figure 10. Share of key items in Costa Rica's FFV exports, in value terms, 2005



Source: COMTRADE

Awareness of key food safety and quality requirements

Due to the considerable importance to Costa Rica's economy of fresh produce exports and the significant role of transnational corporations as well as large, locally owned companies in FFV exports, most exporters are well aware of the main food safety and quality requirements in international markets. According to Servicio Sanitario del Estado, the country's sanitary authority, most of the FFV exporters to the major markets (United States and Europe) are able to carry out the necessary investment (for example in infrastructure and training) to obtain the relevant certification (such as EurepGAP, GMP and HACCP) and meet the requirements of government regulations, including the United States Bioterrorism Act of 2002. The certification requirements of the United States are particularly relevant as it is the largest market for Costa Rican FFV exports (52.4 per cent in 2005).

Exporters and producers generally consider EurepGAP as very important for being able to export to the EU. It has been estimated that about 90 per cent of FFV exports to the EU are already EurepGAP-certified. Nevertheless, some of the major FFV exporters believe that only the buyer (supermarket, distributor) can tell them whether certification is actually required to maintain or increase market shares.

Certification requirements in the United States and the EU

As its name indicates, EurepGAP focuses on good agricultural practices. The Bioterrorism Act focuses to a large extent on traceability, whereas HACCP emphasizes good manufacturing practices (GMP). Experts involved in certification have suggested that compliance criteria for these different standards be put together in a single implementation manual for exporters to both the United States and EU markets because several requirements (e.g. keeping farm records) are common to all the standards. Some believe that the EurepGAP standard could be the basis for such a manual and that certification audits could cover the requirements of the EurepGAP standard, the Bioterrorism Act and HACCP. The use of an implementation manual could be made part of national regulations, also with a view to enhancing the safety and quality of locally consumed FFV.

Producer profiles

While most transnational corporations and other large producers and exporters have already obtained certification for EurepGAP and other standards and regulations, as mentioned earlier, this is much more difficult for small producers. For example, those who export only occasionally find it unprofitable to make the investments needed to obtain certification. Moreover, small producers who rent the land they cultivate will obtain little or no direct benefits from EurepGAP certification, as the returns on investments needed to obtain certification accrue to the landowner. Even when small- and medium-sized producers have already obtained certification, they may not be interested in renewing it when they perceive that buyers are no longer paying attention to such certification.

Therefore, the producers' profile in each sector is an important factor to be considered. For Costa Rica's key horticultural products, these profiles can be briefly summarized as follows:

- *Bananas*: Costa Rica has a total area of 42,000 hectares of banana plantations. Medium-sized producers (150-250 hectares) account for more than 80 per cent of production. Exports are mainly done through transnational corporations such as Chiquita, Dole and Del Monte.
- *Pineapples*: The largest producers (with land areas of 3,000-7,000 hectares) are mostly independent exporters. It is mainly middle-sized producers (1,000-1,500 hectares) who are engaged in growing this crop. Large exporters (e.g. Del Monte and some local firms) account for approximately 90 per cent of exports; adapting processes to meet stringent quality and food-safety requirements is not a problem for these firms. Since the industry has recently received very good prices for its produce, the investment needed to obtain certification is not a major problem. However, in practice, certification is sought only if it provides an economic benefit.
- *Melons*: Of a total of around 30 melon producers, about 10 are large producers (1,000-1,500 hectares) and 20 are small producers (5-10 hectares). Del Monte manages about 90 per cent of total exports. About 30 per cent of all exports go to Europe. Most large producers are already EurepGAP-certified, even though their buyers do not always ask for certification.
- *Cassava and tubers*: Large farmers (30-50 hectares) are the only regular producers and some of them also export. Small producers (mostly with 2-3 hectares) generally rent land for cultivation as they lack funds to invest in farmland. They regularly change crops from year to year and frequently move from one place to another. EurepGAP certification is therefore not a key priority for them.

Possible implications of EurepGAP certification for small producers

Since most large producers and exporters already have the necessary certifications, including for EurepGAP, efforts should be made to facilitate certification for small producers with (potential) export opportunities, such as through benchmarking and/or group certification.

The potential benefits may depend on the specific conditions of each sector:

- *Bananas*: There are very few small producers, and most of them grow organic produce. Although some sell fresh fruit, most production is sold as raw material to processing plants (e.g. for baby food).
- *Pineapples*: Small producers who own their land but currently have no EurepGAP certification could benefit from efforts to facilitate certification (when buyers request it).
- *Melons*: There are no small melon producers in Costa Rica. Medium-sized producers with export opportunities export either directly or through a large exporter. In most cases exporters to the EU already have EurepGAP certification.
- *Cassava and tubers*: Producers normally cultivate part of the farmland with tubers, and the rest with other crops. Since they often grow crops in rotation and switch from one area to another, certification becomes problematic. Recently, tuber and root vegetable exporters have been unable to meet the high demand in the United States. Europe, on the other hand, is not a major market and so the impact of EurepGAP is very limited.

EurepGAP certification

According to Eco-LOGICA, a national certification body, the average basic cost of certification for a producer ranges from $800 to $1,200, plus additional costs that depend on the farmland extension, location and conditions of access to the farm. The costs during the consulting period (when technical support is provided to prepare for the certification inspection) vary from $3,000 (if a group of companies receives certification and technical support) to $12,000. These costs depend on, for example, the certification body, the provider of technical support, the extent of the company's/producer's prior knowledge of GAP, experience in record keeping and existing infrastructure. Indeed, investment in the infrastructure needed to comply with GAP requirements may often be the major cost element.

Eco-LOGICA is the only national certification body accredited to carry out EurepGAP certification. International certification bodies that have certified Costa Rican producers include: SKAL, SGS, LATU and Primus Labs.

Possible costs and benefits of creating a national GAP standard

Currently, Costa Rica does not have a national GAP programme and standard, although it has sufficient expertise to develop them. This is mainly due to a lack of resources.

The Chamber for Agriculture and Agro-industry (Cámara de Agricultura y Agro Industria), together with the National Production Council (CNP), had a programme to assist producers in obtaining certification. Of the 100 companies assisted, half succeeded in becoming certified. Its assistance programme covered part of the implementation and certification costs ($2,000-$3,000 per producer). The Chamber assumed responsibility for implementation and paid the entire travelling costs of the supervisors, while the CNP covered salary and laboratory costs. This programme was, however, discontinued.

The Chamber is currently elaborating an initiative for GAP implementation. It is still not clear whether there would be interest in seeking EurepGAP benchmarking; most producers interested in EurepGAP are already certified. The Chamber believes that any GAP standard should also take into account the requirements of the United States market.

Conclusions and recommendations

Large producers, who dominate FFV exports to the EU market, have obtained EurepGAP certification directly. Therefore, small and medium-sized producers interested in exporting to the EU market but who do not yet have EurepGAP certification are likely to benefit most from the development of a national GAP programme and its eventual benchmarking to EurepGAP. Although certification seems to be an increasingly important factor in the marketplace, the time and resources invested may not yield the expected results. Perhaps the major benefits of GAP implementation for small producers would be in terms of better organization and enhanced awareness of opportunities to increase efficiency and profits. Given the already high number of large players that have EurepGAP certification, the development of a national GAP scheme would require that smallholders have a critical mass of exports.

IV. EUREPGAP BENCHMARKING[35]

This chapter seeks to explain the EurepGAP certification system, in particular the various benchmarking options and procedures.

A locally developed GAP standard,[36] owned by a group such as exporters, a government agency, or a combination of both, that has been recognized as equivalent to EurepGAP, offers an option for producers to certify their products under that standard. Benefits of benchmarking include: (a) the possibility to certify products under a single standard that has international buyer recognition rather than face a multitude of different buyer requirements; and (b) local stakeholder support. A major advantage of benchmarking locally developed standards to an internationally recognized standard such as EurepGAP is that it permits interpretation of the EurepGAP criteria to fit local regulatory, agronomic or social conditions. This makes implementation more successful, widespread and cost-effective. Moreover, a benchmarked national standard may help smallholder farmers by presenting requirements in a way that is easier to understand. A national standard can also provide the opportunity for marketplace branding and advertising.

The applicant's standard has to go through a benchmarking process by independent reviewers as well as EurepGAP members (as described below). This process is illustrated in this chapter by the experience of ChileGAP, a national standard that has been successfully benchmarked against the EurepGAP Fruit and Vegetables V2.1-Jan04 version. The chapter also describes some alternative ways to achieve EurepGAP certification where there are no local public and/or private organizational structures to support horticultural exports as exist in Chile. In those circumstances, where a national standard is unlikely to achieve a viable critical mass of producer member support, producers have other options of EurepGAP certification more relevant to their circumstances. The chapter also highlights the importance of harmonization of different private-sector food assurance standards at a global level.

EurepGAP certification: the options

EurepGAP provides the standards and framework for independent, third-party certification of farm production processes based on the international standard, ISO Guide 65. Farm certification can only be done through an accredited and EurepGAP-approved certification body.

Benchmarking, especially Option 4, has recently gained interest. EurepGAP encourages independent owners of national GAP schemes to benchmark. The benchmarking system of EurepGAP is an example of a transparent assessment and comparison tool for realizing a globally harmonized solution for food assurance systems. Harmonization is likely to reduce duplication of inspection activities by farmers as well as by certification bodies (CB). This has the benefit of lowering certification costs to farmers, as they only have to pay for one certification inspection while gaining access to all markets where EurepGAP and the benchmarked standard are required.

For a standard to be successfully benchmarked against EurepGAP, it has to be considered equivalent to every aspect of EurepGAP: its General Regulations, Control Points and Compliance Criteria, as well as internal management of the standard. The benchmarked standard can cover additional criteria that might go beyond the scope of EurepGAP. These additional criteria might be market- or customer-specific, or relate to local preferences. In all cases, the EurepGAP standard requires compliance with the national legislation of the country of production.

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[35] This section is based on a paper prepared for UNCTAD by Nigel Garbutt (Chairman, EurepGAP) and Elmé Coetzer (FoodPlus GmbH), Options for the development of national/subregional codes of good agricultural practice for horticultural products benchmarked to EurepGAP, 2005. The full draft is available on the UNCTAD CTF website at: http://www.unctad.org/trade_env/test1/meetings/eurepgap/EurepGAP_benchmarking_UNCTAD_November-NG.pdf.

[36] The development of a national GAP provides an opportunity to introduce a home-grown solution by identifying local policies, legislation and weaknesses in the export of fresh produce, and comparing the local techniques and requirements with those of the importing countries.

For full EurepGAP certification (not benchmarked), the applicant producer must comply with both the EurepGAP Control Points (CPs) and the EurepGAP General Regulations (GRs).[37]

Table 10. Options for achieving EurepGAP certification

EurepGAP	
Option 1 Individual certification where an individual farmer applies for a EurepGAP certificate • Farmer is certificate holder • Annual external inspection • Farmer's self-assessment	Option 2 Group certification where a farmers' group applies for a EurepGAP certificate • Farmers' group is certificate holder - Individual farmer - Quality management system • Annual external inspection • Farmers' self-assessment
Benchmarked GAP	
Option 3 Individual farmer applies for EurepGAP benchmarked scheme certificate See above, option 1	Option 4 Farmers' group applies for EurepGAP benchmarked scheme certificate See above, Option 2

For the benchmarked schemes, there are 2 accreditation options. In accordance with the first option, called the "Approved Modified Checklist" option (previously this option was called "EurepGAP Plus Accreditation"), the benchmarked scheme only differs from EurepGAP on the Control Points; the General Regulations are those of EurepGAP. ChileGAP has accepted this option because it does not have its own GRs. It only has its own control points, which are written in a slightly different way and order, but still equivalent.

Table 11. Accreditation options for benchmarking

Normative documents	EurepGAP accreditation	"Approved Modified Checklist" option (formerly called EurepGAP Plus Accreditation)	Benchmarked scheme's own accreditation
Control Points and Compliance Criteria (CPCC)	EurepGAP	Applicant scheme's CPCC benchmarked against EurepGAP	Applicant scheme's CPCC benchmarked against EurepGAP
General Regulations (GR)	EurepGAP	EurepGAP	Applicant scheme's GR benchmarked against EurepGAP

Several standards have been successfully benchmarked against the EurepGAP Fruit and Vegetable Standard of Sept 2001, Rev. 01, but when the new version (2.1, Jan. 04) was released in September 2003, these standards had to renew their benchmarking status by incorporating the changes. By April 2005, two standards had been fully approved: ChileGAP (see below) and the Agrarmarkt Austria Marketing GesmbH (AMA) Stamp of Quality Control Directive. Other standards were at different stages of the benchmarking procedure (either renewing their benchmarking status or applying for approval as equivalent to EurepGAP for the first time).

There are two notable cases where governments have played an important role in catalysing the development and consolidation of a national GAP standard and initiating the benchmarking process with EurepGAP. In China, the Certification and Accreditation Administration of the People's Republic of China (CNCA) signed a wide-ranging Memorandum of Understanding (MoU) on technical cooperation with EurepGAP/FoodPLUS in May 2005. The MoU provides for specific cooperation and technical exchange in the field of certification and accreditation of agricultural products. In

[37] The objective of the GR document is to explain and regulate the operation of the EurepGAP Scheme and the interaction between the CBs, the registered farmer or farmer group, the schemes seeking equivalence acceptance and the EurepGAP Secretariat. The GR document explains the structure of certification to EurepGAP Standard for Fruit and Vegetables and the procedures that should be followed in order to obtain and maintain certification.

essence, the ChinaGAP will be a valid and full translation of EurepGAP protocols. A national working group drawn from a wide range of stakeholders has been established to consider the practicalities of implementation of such a standard. In Mexico, the Ministry of Agriculture (SAGARPA) led the development of MexicoGAP, which has successfully completed the EurepGAP benchmarking process. The development of MexicoGAP benefited from the expertise and experience that Mexico has acquired over many years working with the United States Food and Drug Administration (USFDA). The SAGARPA-owned export promotion body, known as Mexico Quality Supreme, which has close links with the main producers and exporters, is responsible for implementation of this standard .

The State-owned Brazilian Produção Integrada de Frutas (PIF) has expressed an interest in evaluating the benchmarking procedures for this standard (see chapter II above).

Requirements in applying for benchmarking

When applying for benchmarking, the standard must meet the following conditions:

- Certification bodies must be accredited for ISO Guide 65, and accreditation must be sought from an accreditation body that is either part of the multilateral agreement (MLA) on certification of products of the European co-operation for Accreditation (EA)[38] or a member of the International Accreditation Forum (IAF).
- The standard must be drawn up by or for an organization or sector. This organization should also be the owner and/or administrator of the standard and must hold the copyright to the standard and any trademarks.
- The standard must be intended for assuring compliance with the food safety, environmental protection, occupational health, safety and welfare, and animal welfare requirements (where applicable), as set out in EurepGAP.
- Assurance must be provided that all farmers/farms registered are operating under the rules of the applicant's standard.
- At least regularly, but every three years at the latest, and whenever EurepGAP announces an update or change, there must be an evaluation and update together with the parties involved.
- The language and terminology used to develop a standard must be clear, to enable an unambiguous interpretation of the certification standard during inspections.
- The standard should not allow products that are not produced under it to be labelled or described in a way that suggests that they comply with EurepGAP or the benchmarked standard.
- The standard's owner(s) should agree to a method of supervision that may be imposed by EurepGAP to ensure compliance should this be required.
- The standard must be publicly available. Levying a reasonable fee for the purchase of the standard will not be regarded as a restriction or limitation.

Stakeholder involvement

The standard must have credibility in the sector, and have the support of regulatory bodies and/or the relevant professional groups. Since the applicant's standard needs to seek its own accreditation to ISO Guide 65, all relevant farmers and supplier organizations should be represented in the consultation process and support the standard before benchmarking. In this way the standard will gain its ISO accreditation and immediate market acceptance by all the stakeholders, once it has been fully approved as equivalent.

Technical competence

In order for a standard to apply for benchmarking there must be a certain level of technical competence. Normally a technical committee develops and maintains the technical aspects of the standard. This committee will also be responsible for justifying the standard during the benchmarking procedure and for updating the standard when EurepGAP revises its standards. This also implies that the technical committee must have the authority to amend the standard when required.

[38] Known as the EA MLA.

Understanding of EurepGAP

The technical committee of the applicant's standard will also be responsible for completing the initial cross-reference table to be submitted during the application. It must therefore understand the interpretation of the EurepGAP standards and their compliance criteria.

Experience with standards (accreditation)

The standard must be certifiable and operational. It must provide a framework for independent, third-party certification of farm production processes based on ISO Guide 65 (certification of production processes to ensure that only those products that reach a certain level of compliance with established good agricultural practices, in this case as set out by EurepGAP, are certified).

The administrator of the certification scheme must record agreements with individual CBs to carry out the inspections. It should be demonstrable that the CBs operate in accordance with the standard's rules.

EurepGAP benchmarking procedure

One of EurepGAP's core activities is the recognition, via benchmarking, of other farm assurance schemes that are essentially identical to EurepGAP. FoodPLUS, the legal operator of the EurepGAP standards, has developed a series of procedures to ascertain whether a standard and its certification system can demonstrate equivalence to the EurepGAP standard and its certification system, and as a result be formally recognized. In order for a standard to be formally recognized, it must comply with all Control Points and Compliance Criteria as set out in the relevant EurepGAP standard. This is a strict interpretation of equivalence, but is considered necessary if buyers are to have confidence in the comparability of different standards.

Transparency and impartiality

Transparency is one of EurepGAP's key aims, and in order to improve the perceived and actual integrity and transparency of the system, the EurepGAP Technical and Standards Committee (TSC) has approved a benchmarking procedure for EurepGAP. To ensure impartiality, the EurepGAP Steering Committee (SC) decided to appoint external, recognized and competent organizations to undertake independent technical reviews and witness audits (otherwise known as "physical benchmarking").

The EurepGAP secretariat has announced a tender process to accreditation bodies currently involved in EurepGAP accreditation. The key criteria for applicants are: (a) they have to be part of the European Accreditation MLA on product certification, or members of the International Accreditation Forum; (b) independence; (c) technical expertise; and (d) qualifications in accreditation systems (ISO Guide 65) in the agricultural field. The tender is designed to identify an organization that has the desired level of credibility with the public and industry, and which has the global resources, technical and organizational competence and efficiency to handle the EurepGAP benchmarking procedure in an affordable manner for the industry. Of the applications received, the tenders from the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) and from the German Accreditation System and Testing Ltd. (Deutsches Akkreditierungssystem und Prüfwesen GmbH, DAP) have been accepted as those most closely meeting the criteria.

Furthermore, to uphold the integrity of the benchmarking system, FoodPLUS requires the equivalent owner of the standard to have documented arrangements with all the individual CBs certifying the equivalent (benchmarked) standard to ensure that they operate in compliance with all the requirements of the EurepGAP certification system, including ISO/IEC Guide 65. The owners of standards can make claims regarding equivalence only in respect to the scope for which equivalence is granted if they own more than one standard. They have to incorporate technical changes and updates in the equivalent standard as well as innovations and improvements in the certification mechanism implemented by FoodPLUS within the time frames indicated by FoodPLUS.

The EurepGAP website (www.eurep.org) under the heading, Approved Schemes, lists standards that are fully approved, and indicates the status of the standards that are still undergoing the benchmarking

process. Members of EurepGAP have the benefit of viewing the documents submitted by the applicant's standard and can also participate in the peer review stage of the process (i.e. step (b) in the procedures below). The Technical and Standards Committee (TSC) also has the opportunity to give its votes online, and can add comments online that can be viewed by other TSC members, FoodPLUS and the accreditation body.

Consultation and the standard-setting process

Good practices for consultation and standardization are followed during the benchmarking procedure, as with the development of the EurepGAP standards and their revision, which takes place every three years.

- The consultation process is extensive and involves the stakeholders directly.
- Formal approval of standards is based on evidence of consensus.
- Parties involved with the benchmarking procedure (discussed below under process) receive timely notifications, which offer them the opportunity to make substantive contributions.
- Proper records of the whole benchmarking procedure are prepared, maintained and traceable.
- Recognition is given to all approved standards on the website, to which all EurepGAP members have access.

The benchmarking process is described in detail below. The involvement of EurepGAP members and independent experts, as shown, ensures exposure to a cross-section of the industry and thus improves credibility of the benchmarked standard. The responsible parties are also given enough response time to be able to provide valuable input during the different review processes.

The benchmarking process

The benchmarking process consists of a number of phases:

(a) The application;
(b) The technical review process:
- Preliminary technical review;
- Peer review;
- Independent technical review;
- Independent witness assessment; and
- Technical and Standards Committee Review.

(c) Formal recognition of applicant's standard.

Application

Owners of a standard can apply for benchmarking. In the case of government ownership, there is usually a committee that can request the government representatives to proceed with the application for the benchmarking procedure.

The application process consists of two parts: (a) application by the standard's owner, and (b) application by a CB that is certifying the equivalent standard. The standard's owner must apply directly to either JAS-ANZ or DAP to undertake the benchmarking procedure. At this stage, an initial contract is signed between the standard's owner and FoodPLUS. Among other things, this contract details the financial conditions, termination conditions and other review procedures as well as the right of FoodPLUS to review the standard through an independent technical review body.

As part of the application, which must be completed in English, the standard's owner must submit a summary of the standard, detailing its objectives and its development and operating procedures. The application must also include a clause-by-clause cross-reference of the applicant's standard to the EurepGAP standard (General Regulations and Control Points and Compliance Criteria). This technical benchmarking document should detail the compliance or stricter requirements of the applicant's standard and provide any arguments necessary to justify equivalence. If the document has been translated into English, each point should also be shown in the original language of the standard, if applicable, and translations must be officially authenticated.

The application procedure for individual CBs that certify the equivalent standard and equivalent certification system, to become formally approved by FoodPLUS, should be in accordance with the EurepGAP Certification Body Approval Procedure. Applicant CBs must provide written proof that the equivalent standard's owner has no objection to the applicant CB issuing certificates concerning the equivalent standard's scope.

Technical review process

The technical review process involves a rigorous series of reviews by various independent parties, as well as by EurepGAP members. It consists of a detailed paper review (i.e. a preliminary technical review, a peer review and an independent technical review) as well as a physical, on-site assessment or audit (an independent witness assessment) and, finally, a technical and standards committee review of the summary of all the above.

Preliminary technical review: The technical person or organization responsible for this review, appointed by EurepGAP, should be independent (of the applicant's standard), competent and have experience in conformity assessment. This person or organization checks whether the technical benchmarking document is complete, and if there are any relevant technical omissions the application is returned for amendment by the standard's owner and a new application needs to be submitted. A two-week period is given for a preliminary technical review report to be issued.

Peer review: Following the preliminary technical review, the application undergoes peer review. EurepGAP members and stakeholders, including primary producers, manufacturers, wholesale distributors, retailers, consumers, government, academics and CBs operating EurepGAP and/or the standard-seeking equivalence, are invited to make written, technical comments. These comments can be made online so that they can be viewed by the standard's owner, FoodPLUS and other members of EurepGAP. This review process has a duration of two to three months.

Independent technical review: An independent, impartial and technically competent person or organization appointed by FoodPLUS, with no direct connection with FoodPLUS or the standard-seeking equivalence, reviews the application detail and all the consultation responses. The appointed person or organization that undertakes the independent technical review must have experience in conformity assessment, and, if applicable, knowledge of the field of application and geographical region where the applicant's standard and certification system is proposing to operate.

The reviewer summarizes the consultation responses and the application details in a report with one of the following recommendations: (i) accept equivalence, (ii) accept equivalence conditional on agreed changes, or (iii) reject the application. If any technical deficiencies are detected, the application is returned and the standard's owner has one month to propose amendments to the reviewer. The independent technical review must be finalized within a period of one month (or as soon as the reviewer receives amendments, if applicable). The detailed report, as prepared by the reviewer is then sent to the auditor responsible for the witness assessment.

Independent witness assessment

The witness assessment of an audit is carried out in the field by an auditor of the certification body that is certifying the scope of the equivalence-seeking standard. It is performed by an independent, impartial and technically competent person or organization appointed by FoodPLUS, with no direct connection with FoodPlus or the certification body conducting the audit or the standard's owners. If more than one CB is undertaking to certify the applicable scope of the applicant's standard, FoodPLUS, JAS-ANZ or DAP select one of them to assess.

The auditor only validates the reviewed cross-referencing of the CPCC (not the General Regulations) with the selected CB. Validation of implementation of the certification system (cross-reference of the General Regulations) is carried out by an accreditation body as part of the accreditation process of each CB. The witness assessor produces a detailed report summarizing all areas of conflict, if any. The objective of this independent witness assessment is to ensure that the standard is, in practice,

equivalent to EurepGAP, and that the CB interprets the standard's requirements in a manner that is acceptable to EurepGAP.

This report is returned to the applicant, who has one month to propose amendments to the witness assessor; thereafter the witness assessor evaluates the amendments in a final report. In this final report, the assessor makes one of the following recommendations to the Technical and Standards Committee: i) accept equivalence, ii) accept equivalence with agreed changes, or iii) reject the application.

Technical and Standards Committee Review

In this step, the Technical and Standards Committee responsible for the development of the EurepGAP standard against which equivalence is being sought, considers the independent technical review as well as the witness assessor's report. The Committee has to decide whether to accept or reject the recommendations made by the previous reviewers. If the Committee does not approve the recommendations, written justification has to accompany this decision. These proposals are normally discussed at the next scheduled meeting. In case of exceptions, the Committee has three weeks to give its decision.

Formal recognition of applicant's standard

If the Technical Standards Committee gives a favourable recommendation, a notice of intent to formally recognize the standard as equivalent is circulated to all those who participated in the peer review. The Committee then reviews any final comments and, if there is no negative comment, formally accepts equivalence. The participants of the peer review have two weeks to give their final comments.

Contractual arrangements between FoodPLUS and the owner of the now "benchmarked" standard then agree on details such as the termination date, cancellation clauses and dispute procedures. EurepGAP requires that the owner of the approved standard only make claims with respect to the standard accepted through the benchmarking procedure. The owner may not make use of the acceptance in any way that might bring EurepGAP into discredit. In the event of suspension or withdrawal of the acceptance, the owner will no longer be able to advertise the standard's equivalence to EurepGAP in any way whatsoever. Technical modifications and updates to EurepGAP should be included in the accepted standard once they have been made available, and within the period of time specified in the contract.

The standard's owner then receives formal, written notification of the outcome of the benchmarking process and this is also publicly announced on the website.

Theoretically, the shortest time period to complete this process, from the time of application to full, formal recognition, is around six months, but it can take up to 12 months when several amendments are required to be made and when human resources are limited.

The ChileGAP experience

Chile exported 2.1 million boxes of fresh fruit during the 2004/05 season, of which 31 per cent went to the EU. The value of its fresh fruit exports amounted to $1.8 billion in 2004, with $482.9 million (27 per cent) going to the EU (COMTRADE). Fresh fruit exports represented 30.9 per cent of the value of its total agricultural exports and 5.8 per cent of all exports.

ChileGAP is a private standard and food safety scheme developed by the Foundation for Fruit Development (FDF) since 1999 by virtue of a mandate of the Chilean fresh fruit and vegetable industry. It has two main objectives:

- To help growers comply with the growing market requirements in terms of GAP and food safety by harmonizing local regulations with the requirements of GAP standards in the markets of importance to Chilean fruit exports (i.e. Europe and North America).
- To reduce certification costs for the growers by removing the need for multiple audits through the use of just one standard that considers the main requirements of the markets and by supplying clear guidelines for implementation of the required standards.

Unlike some of the other benchmarked standards that cover only the production of certain crops such as citrus or sweet corn, ChileGAP is applied to almost the entire fruit and vegetable industry in Chile. Since ChileGAP has been successfully benchmarked against the EurepGAP Fruit and Vegetables standard twice (the first and updated version), it can offer valuable lessons from its experiences with the whole process.

General organization of ChileGAP

The ChileGAP standard is headed by a steering committee of 12 members. They represent exporters, growers, industry and academic institutions, thus ensuring a multidisciplinary approach that encompasses all sectors involved in the production and export of Chilean fresh fruit.

The technical committee comprises nine members: four each from the export sector and the production sector, and the technical manager of the FDF. The role of the technical committee is to analyse, assess, develop and make proposals to the steering committee on the following matters: (a) revisions of normative documents, (b) development of technical documents, and (c) approval and sanctioning of the certification bodies.

ChileGAP also has a secretariat at FDF, whose main function is to maintain records on certification bodies, consultants and trainers.

Benchmarking stages

According to Adonis (Technical Manager, FDF, personal communication), there are four key aspects or issues that need to be taken into account in the benchmarking process:

(i) The spirit and philosophy of EurepGAP needs to be respected throughout the development of the standard, and should be applied to the standard's specific requirements. The essence of the ChileGAP standard is that it seeks to meet global requirements while taking into account the local context and needs. The establishment of clear and accurate criteria for Chilean growers prevents confusion in using the standard.

(ii) The process takes a long time. It takes approximately one year to prepare the final standard for submission for benchmarking, and another eight months to obtain official recognition. The applicant's standard is carefully evaluated and reviewed by a team of experts, which is not only good for the integrity of EurepGAP but also for the benchmarked standard. During this process, the standard's owner is requested to clarify and justify some aspects. The process can be shortened significantly if the initial work is done accurately. Approval by technical and scientific experts throughout the industry provides a good basis for the credibility of the standard.

(iii) The "on-site" visit by an independent expert (witness assessor) together with the approved certification body is important, as the compliance criteria that have been developed for the applicant's standard are tested in real life conditions against those of EurepGAP. It is imperative that those criteria be well defined and their equivalence accepted by any inspector who is chosen for this witness assessment step.

(iv) Harmonization is a continuous process, and the manager of the standard is responsible for keeping abreast of any changes that need to be incorporated. The challenge is to ensure the standard keeps up with market requirements and yet is not changed too often, as this would affect implementation by the growers. The quality of the harmonization work done at the early stages is therefore essential for achieving this.

Impact of benchmarking for Chilean FFV exports

Before the benchmarking, in many instances Chilean growers had to be EurepGAP-certified to comply with European retailer requirements, but because the growers also export to the United States, they needed verification for that market as well. This meant two inspections per farm, resulting in high certification costs for the grower: before ChileGAP, the cost was about $700 per inspection per farm per year; after the benchmark, this cost was reduced to $550 to $600 per inspection per farm per year.

Chilean producer organizations sought harmonization of the requirements of both markets. The ChileGAP initiative was created to develop a standard that could easily be implemented by local growers, and which would have recognition in the main markets of Europe and North America. To achieve this, two successive initial versions of the standard were developed and applied on farms for two years. This can be seen as a trial period which enabled growers to get accustomed to all the new GAP requirements such as record keeping, self-assessments and external inspections. This trial period was based on a plan agreed by the industry in which 1,380 growers participated.

In some cases, the content of the EurepGAP standard (whose official version is in English) needed specific adaptation for local conditions. This was solved by developing clear and precise definitions of the Compliance Criteria specifically for ChileGAP, taking into account the growers' and exporters' perspectives. Because EurepGAP had a clear, transparent and well-defined process for benchmarking, it was decided to obtain international recognition of ChileGAP.

EurepGAP's Option 4 (group certification in a benchmarked scenario) forms part of ChileGAP and at least a couple of groups have obtained certification under this option.

ChileGAP has been designed to help all Chilean growers whose produce is intended for export. Many suppliers of export companies are small and medium-sized growers and they are all implementing this standard because it is easy to understand. The benchmark has had a significant impact on the smallgrowers. For example, about 1,000 smallgrowers that cultivate raspberries have implemented and benefited from this scheme.

Costs during the development stages were borne by the private sector and government agencies. The private sector assumed about 60 per cent of the costs, mainly financing the salaries of the experts working on the process and also participation in international forums. The remaining 40 per cent, which included activities such as training, preparation of guidelines, publications, dissemination of information and other promotional activities – both in Chile and overseas – were covered by government agencies. In other areas, some government agencies have taken a proactive role to maintain up-to-date information for growers, as requested by ChileGAP. An example is the agency in charge of registration of crop protection products, which now has a list of all the registered crop protection products available on the Internet, and has developed a faster registration process for crop protection products. The Ministry of Agriculture, which has established the Chilean Commission for GAP with the participation of the private sector, seeks to extend participation in ChileGAP mainly by smallgrowers. Finally the Government plays a role in the promotion of ChileGAP in foreign markets through commercial missions that explain ChileGAP to customers in Europe and the United States.

In principle, European supermarkets can still require EurepGAP certification instead of ChileGAP certification. This is possible because the EurepGAP General Regulations do not limit the options of the supermarkets in this matter. However this has not happened; on the contrary, retailers have immediately accepted a ChileGAP certificate as equivalent to EurepGAP. The development of ChileGAP has had no effect on the participation of retailers in the domestic market.

Technical cooperation/capacity-building is one of the major benefits from the ChileGAP benchmark process. It has created an opportunity for the development of strong technical capabilities inside ChileGAP through the following activities:

- Development of technical capabilities to harmonize requirements of ChileGAP and other standards, such as United States standards.
- Participation in other EurepGAP benchmarking applications.
- Participation in specific technical committees.
- ChileGAP has been one of the leaders (in conjunction with the Southern Hemisphere Association for Fresh Fruit Exports (SHAFFE)) in the drive for a global harmonization process.
- The research carried out to meet specific GAP requirements has resulted in a range of publications, such as an interactive guideline for insect monitoring in different crops, a special format for registers to be kept in farms and packhouses, hygiene monitoring systems, and an electronic version for internal audits.

The harmonization process leading up to the creation of ChileGAP has demonstrated to the market the commitment of the Chilean industry to GAP and food safety; and retailers have begun to trust ChileGAP as a reliable standard. This has also contributed to what is now a well-developed export promotion programme, with extensive investments made in marketing and advertising, including publicizing Chile's commitment to food safety in the marketplace.

ChileGAP has achieved its first certifications, and the most proactive growers engaging in the standard are actively involved in the programme. However, continued dissemination of information is needed to maintain growers' awareness of the significance of ChileGAP.

Conclusions and recommendations

EurepGAP certification

EurepGAP certification is possible by various routes. Because national circumstances vary greatly, there is unlikely to be a single, global, "one-size-fits-all" approach. Group certification is unequivocally the most appropriate route for small-scale farmers who benefit in a variety of ways from the dynamics of well-organized groups. However, the existence of a risk-analysed, but practical, quality management system is a prerequisite before attempting certification.

The optimal size of the groups should initially be relatively small to ensure they are manageable, but it would be advisable to increase their size in subsequent seasons as competence increases and risk is reduced. This would cut certification costs per farmer. There is also room for greater collaboration among producer groups undergoing certification to reduce, rather than replicate, fixed costs such as training and analysis.

Of some concern is the apparent lack of underpinning support for GAP implementation in developing countries, evidenced by the gradual erosion and disappearance of official agricultural extension services. This would seem at odds with the apparent policy goals of governments and multilateral institutions to involve small-scale farmers in the export sector, which would help retain them in rural communities rather than inducing their displacement to overpopulated urban areas.

It is unlikely that market mechanisms alone would be sufficient to bear all the one-off costs of training and capital investment that are required to make the very large numbers of smallholders/subsistence farmers compliant with GAP. In this context, the role of development partners in providing technical assistance has been, and continues to be, of great importance. However the future participation of small farmers in export markets needs to be coordinated and discussed with the commercial supply chain partners to ensure a planned and orderly entrance and prevent oversupply or attempts to sell products that do not meet market requirements. This dialogue could usefully be organized between a range of stakeholders in the public and private sectors.

EurepGAP would also welcome any dialogue to explore how private- or public-sector standards could achieve a greater degree of harmonization and complementarity. This could be of particular interest to developing countries where there is potential for enhanced food safety control measures (say for the home market) without the necessity of incurring large investments, or where there is potential for cost reduction to meet public-sector regulations to access external markets. UNCTAD, in cooperation with the FAO, may be able to assist in facilitating such discussions between relevant parties.

These linkages would be an innovative step towards achieving the shared goals of both the public and private sectors to facilitate sustainable development and trade.

Responsible exporters can play a key role both in market development and in linking small-scale producers with the marketplace. Exporters also provide the crucial interface between retailers and the production base. In some cases, the supply chains are more complex, with importing companies and distributors also playing important roles in many markets.

As part of its ambition to establish a "Global Partnership for Safe and Sustainable Agriculture", EurepGAP intends to link its global implementation activities closer to the grower, while at the same

time seeking to gain qualified input from national experts, in their native language, with respect to specific legal and structural conditions within the different areas covered by EurepGAP. This goal is achieved through the establishment of NTWGs.

Benchmarking

EurepGAP benchmarking was conceived at an early stage in the development of its verification systems (around 1998). From the outset, the rationale was to provide a tool for bringing together similar sector schemes, to recognize existing standards and not duplicate or impose unsuitable, new requirements. EurepGAP stakeholders have worked to produce an equivalence system with a high degree of rigour and transparency. This is critical for maintaining the confidence of all those involved who expect it to be both fair and effective.

EurepGAP is committed to offering the benchmarking option of certification for two main reasons. First, it has already proved of strategic importance in bringing about the harmonization of private-sector standards that share similar goals and philosophies to that of EurepGAP. For example, there is a growing "family" of GAP schemes in important producing nations in Europe, Asia, Africa and Latin America that are closely related and share a high degree of equivalence. Second, it also encourages producers and other key stakeholders to "put their own stamp" on their produce. Experience shows that by voluntarily taking ownership in this way, adoption of certification is becomes less of a burden to the producer.

A major benefit for these benchmarked schemes is that they gain international buyer recognition and establish a core set of standards for producers who no longer have to respond to a plethora of different requirements. With the increasing pace of globalization of both production and retailing, this aspect of the benchmarking model is developing greater relevance and appeal amongst the key supply chain actors.

However benchmarking will always remain just one certification option under EurepGAP and will not be suitable for producers everywhere. Case studies show that it works best where there is an existing strong, cohesive force within a reasonably mature production industry, as opposed to an embryonic or fragmented export sector. It also requires a coordinated, multi-stakeholder approach that necessitates both public- and private-sector participation. Being voluntary in nature, a sizeable, critical mass of interested producers is necessary to effectively support the costs of development and promotion among producers and beyond.

Thus the structure of the industry, its relative stage of development, the importance to it of international trade and availability of supporting infrastructures are all factors that need to be considered when deciding on whether to develop a national or regional code suitable for attaining equivalence to EurepGAP. EurepGAP therefore encourages groups to take these factors into consideration before developing a benchmark scheme. It does not have a policy to promote or recommend the benchmarking option over any other form of certification option. This is a decision that should be taken by governments, producers and exporters, bearing in mind local circumstances and requirements.

References

Andrigueto JR, Kososki AR (2005). Desenvolvimento e Conquistas da Produção Integrada de Frutas no Brasil até 2004. http://www.inmetro.gov.br/qualidade/relatório2005.doc.

Andrigueto J, Nasser LCB and Teixeira JMA (2006). Produção Integrada de Frutas: Conceito, Histórico e a Evolução para o Sistema Agropecuário de Produção Integrada – SAPI, Brasilia, Brazil.

Andrigueto JR, Adilson Kososki T and de Azevedo Oliveira Domingo (2005). *Maracujá no contexto do desenvolvimento e conquistas da produção integrada de frutas no Brasil*, chapter 21. In: Faleiro, F.G.; Junqueira, N.T.V.; Braga, M.F. (Eds.) *Maracujá: germoplasma e melhoramento genético*. Planaltina, DF: EMBRAPA Cerrados, 2005. p. 509-556. Memória da IV Reunião Técnica de Pesquisas em Maracujazeiro. Planaltina, DF: EMBRAPA Cerrados, 2005. http://www.cpac.embrapa.br/ivrtpm/.

Babboni M, Glusman V and Neuendorff J (2005). Country case studies on reflecting national circumstances and development priorities in national codes on good agricultural practice that can be benchmarked to EurepGAP: Argentina (mimeo). Prepared for UNCTAD (see Chapter III of this manuscript).

COLEACP (2007). Private voluntary standards: how can we make them more accessible to smaller players, presentation at the FAO-UNCTAD Regional Workshop on GAP in Eastern and Southern Africa: Practices and Policies, Nairobi, 6-9 March 2007, accessible at: www.unctad.org/trade_env/meeting.asp?MeetingID=217.

Departamento de Sistemas de Produção e Sustentabilidade - DEPROS/SDC/MAPA. Programas e Sistemas Institucionais para obtenção de alimentos seguros. 2006.

Dijkstra T (2006). Commentary on chapter I, Environmental requirements and market access for developing countries: Promoting environmental – not trade – protection. In: UNCTAD *Trade and Environment Review 2006* (UNCTAD/DITC/TED/2005/12), available at: www.unctad.org/trade_env/test1/publications.htm.

Espanion P (2005). Country case study on reflecting Brazilian circumstances and development priorities in national codes on good agricultural practice that can be benchmarked to EurepGAP (mimeo). Prepared for UNCTAD (see Chapter III of this manuscript).

European Commission, Health and Consumer Protection Directorate-General (2005). Final report of a mission to Brazil 16 to 25 November to evaluate control systems for pesticide residues in foodstuffs of plant origin, in particular in apples and papayas, intended for export to the European Union, DG(SANCO)7703/2005-MR Final.

Garbutt N and Coetzer E (2005). Options for the development of national/subregional codes of good agricultural practice for horticultural products benchmarked to EurepGAP. Consultation Draft, September (mimeo). Prepared for UNCTAD (see Chapter III of this manuscript).

Gandhi SR (2005). Regulating the use of voluntary environmental standards within the World Trade Organization legal regime: Making a case for developing countries, *Journal of World Trade*, 39(5): 855-880.

Graffham A (2007). Impact of EurepGAP on small-scal vegetable growers in Kenya and Zambia, Natural Resources Institute (NRI) and International Institute for Environment and Development (IIED), Fresh Insights no. 6, accessible at: agrifoodstandards.net.

He Changchui (2005). Opening remarks at the FAO-Thailand Joint Workshop on Good Agricultural Practices (GAP) for Fresh Fruit and Vegetables in Thailand, Bangkok, 14–15 September: accessible at: www.fao.org/world/regional/rap/speeches/2005/20050914.html.

Hoffmann U and Vossenaar R, eds. (2007). Food safety and environmental requirements in export markets – friend or foe for producers of fruit and vegetables in Asian developing countries? (UNCTAD/DITC/TED/2006/8), Geneva, UNCTAD.

Humphrey J (2005). Shaping value chains for development: Global value chains in agribusiness. Research paper for GTZ, Eschborn, Germany: 22-25; available at: www.gtz.de/trade.

INDEC (Instituto Nacional de Estadística y Censos de la República Argentina), 2002: Censo Nacional Agropecuario.

Kilian B (2005). Costa RicaGAP case study (mimeo). Prepared for UNCTAD (see Chapter III in this manuscript).

Labaste P, ed. (2005). *The European Horticulture Market, Opportunities for Sub-Saharan African Exporters*. Washington, DC, World Bank.

Lumpkin T, Weinberger K and Moore S (2005). Increasing income through fruit and vegetable production: Opportunities and challenges. *CGIAR Priorities: Science for the Poor.* Draft note. Consultative Group on International Agricultural Research Science Forum, Marrakech, Morocco, December.

Ministry of Agriculture, Livestock and Food Supply (2002). Legal marks of integrated fruit production in Brazil. Brasilia, September.

O'Brien T and Díaz Rodríguez A (2004). Improving competitiveness and market access for agricultural exports through the development and application of food safety and quality standards The example of Peruvian asparagus. A Report by the Agricultural Health and Food Safety Program of the Inter-American Institute for Cooperation on Agriculture (IICA). July 2004. http://infoagro.net/shared/docs/a3/CODEX_PERU.pdf.

OECD (2006). Working Party on Agricultural Policies and Markets, Private standard schemes and developing country access to global value chains: challenges and opportunities emerging from four case studies (AGR/CA/APM(2006)/20), Paris, 27 September 2006.

Pay E (2005). Overview of the sanitary and phytosanitary measures in QUAD countries on tropical fruits and vegetables imported from developing countries. *Trade-related Agenda, Development and Equity Research Papers*, No. 1. Geneva, South Centre, November.

Poisot AS (2007). Implementing national GAP programmes: key considerations for developing countries, presentation at the FAO-UNCTAD Regional Workshop on GAP in Eastern and Southern Africa: Practices and Policies, Nairobi, 6-9 March 2007, accessible at: www.unctad.org/trade_env/meeting.asp?MeetingID=217.

UNCTAD (2006a). Food safety and environmental requirements, market access and export competitiveness: turning challenges into opportunities for developing countries. Issues note (UNCTAD/DITC/TED/2006/2), Geneva; accessible at: www.unctad.org/trade_env/test1/meetings/ctf3.htm.

UNCTAD (2006b). Report of the workshop on Environmental Requirements and Market Access for Developing Countries: How to Turn Challenges into Opportunities. Geneva, 3-4 July 2006. UNCTAD/DITC/TED/MISC/2006/1.

UNCTAD (2007). Private Sector Standards and Developing Country Exports of Fresh Fruit and Vegetables. Communication from the UNCTAD secretariat to the WTO Committee on Sanitary and Phytosanitary Measures. G/SPS/GEN/761, 26 February 2007.

Vander Stichele M, van der Wal S, and Oldenziel J (2006). Who reaps the fruit? Critical issues in the fresh fruit and vegetable chain. Amsterdam, Centre for Research on Multinational Corporations (SOMO).

Villalobos P and Santocoloma P (2005). Chile's experience with implementing a national GAP benchmarked to EurepGAP. Presentation made at the Subregional Stakeholder Consultation on Issues in Benchmarking National Codes on Good Agricultural Practice for Horticultural Products to EurepGAP, Rio de Janeiro, 8-10 December 2005.

WTO (2007). Private standards and the SPS Agreement, Note by the WTO secretariat, Geneva, 23 January 2007, G/SPS/GEN/746.

Statistical Annex

Table A.1. Production of fruit and vegetables of leading producers and shares in world production, 1979/81-2004

	Production					Share				
	1979-1981	1989-1991	1999-2001	2003	2004	1979-1981	1989-1991	1999-2001	2003	2004
World	629.7	812.7	1207.6	1345.1	1383.6	100.0	100.0	100.0	100.0	100.0
China	67.5	150.2	387.9	488.7	506.6	10.72	18.48	32.12	36.33	36.62
India	56.5	76.1	117.4	126.6	127.6	8.98	9.36	9.72	9.42	9.22
EU-15	104.9	105.3	116.3	109.7	117.3	16.66	12.95	9.63	8.16	8.47
US	51.9	56.3	68.1	65.9	69.4	8.24	6.93	5.64	4.90	5.01
Brazil	22.9	36.1	42.9	44.0	43.8	3.64	4.44	3.55	3.27	3.16
Argentina	8.6	8.9	10.6	10.8	10.7	1.36	1.09	0.88	0.80	0.77
Costa Rica	1.4	2.5	4.3	4.4	4.1	0.23	0.30	0.36	0.32	0.30
Sub-total [a]	32.9	47.5	57.7	59.2	58.6	5.23	5.84	4.78	4.40	4.23
Latin America	67.5	90.6	118.2	122.7	123.5	10.72	11.15	9.79	9.12	8.92
Developing countries	361.5	541.0	917.4	1057.6	1083.7	57.44	66.59	75.99	78.65	78.30

Source: FAO Statistical Yearbook, table B.3.
http://www.fao.org/statistics/yearbook/vol_1_1/xls/b03.xls.
[a] Argentina, Brazil and Costa Rica.

Table A.2. Principal developing-country exporters of FFV, 2005

Fruit and vegetables (HS07 and 08)			Fruit, excluding nuts (HS0803-0814)		
Exporter	**Value ($ million)**	**Share in developing countries' exports (%)**	**Exporter**	**2005 ($ million)**	**Share in developing countries' exports (%)**
All developing countries	29 760.0	100.0	All developing countries	14 750.0	100.0
Mexico	4 596.2	15.4	Chile	1 864.5	12.6
China	4 119.5	13.8	Mexico	1 358.9	9.2
Turkey	3 034.2	10.2	Turkey	1 251.9	8.5
Chile	2 037.7	6.8	South Africa	1 182.3	8.0
India	1 423.4	4.8	Ecuador	1 145.8	7.8
Islamic Rep. of Iran	1 381.6	4.6	Costa Rica	920.9	6.2
South Africa	1 286.7	4.3	China	868.7	5.9
Ecuador	1 207.8	4.1	Argentina	781.9	5.3
Argentina	1 023.6	3.8	Colombia	544.4	3.7
Costa Rica	1 017.3	3.8	Islamic Rep. of Iran	528.0	3.6
Thailand	830.7	3.2	Brazil	448.3	3.0
Morocco	722.2	2.4	Philippines	447.7	3.0
Brazil	692.4	2.3	Morocco	447.7	3.0
Philippines	606.3	2.1	Guatemala	355.9	2.4
Colombia	576.7	1.9	Thailand	288.5	2.0
Guatemala	473.2	1.6	Panama	236.0	1.6
Viet Nam (2003)	438.8	1.5	India	232.8	1.6
Peru	426.0	1.4	Honduras	193.5	1.3

Source: COMTRADE

Table A.3. Principal developing-country FFV suppliers to the EU-15, in value and volume terms, 2005*

	Value ($ million)**			Volume (1000 tons)		
	Fruit and nuts (HS 07)	Vegetables (HS 08)	FFV (HS 07-08)	Fruit and nuts (HS 07)	Vegetables (HS 08)	FFV (HS 07-08)
Turkey	1 296.1	246.0	1 542.1	632.3	243.6	875.9
South Africa	1 119.9	15.5	1 135.4	1 002.1	10.9	1 013.0
Costa Rica	863.5	14.6	878.0	1 023.7	19.2	1 042.9
Morocco	346.3	462.6	828.6	338.8	449.8	788.6
Chile	745.5	36.3	781.8	543.3	44.6	587.9
Ecuador	744.9	31.2	776.1	972.8	28.4	1 001.2
Colombia	683.6	1.7	685.3	811.8	1.2	813.0
Argentina	554.5	93.5	648.0	651.0	133.8	784.7
Brazil	573.3	8.5	582.1	542.9	8.1	550.9
China	206.8	351.6	558.5	159.8	322.6	482.3
India	276.3	65.9	342.3	72.3	69.7	142.0
Egypt	126.8	196.6	323.4	139.5	331.2	470.7
Côte d'Ivoire	249.3	1.2	250.4	297.2	1.3	298.5
Cameroon	221.8	3.1	224.9	255.8	2.5	258.3
Panama	218.0	0.7	218.7	279.9	0.8	280.7
Peru	112.1	106.0	218.1	88.7	33.0	121.7
Kenya	24.5	182.5	207.0	20.4	51.7	72.1
Islamic Rep. of Iran	201.4	1.4	202.7	63.7	0.7	64.4
Mexico	74.5	57.7	132.2	44.5	45.8	90.2
Viet Nam	117.5	6.4	123.9	32.0	5.3	37.3
Thailand	30.9	92.3	123.1	15.6	358.6	374.2

Source: Export Helpdesk.
* Listed in descending order of FFV imports in value terms.
**Converted from euros to dollars at € 1 = $ 1.20.