

**A COMPARATIVE ANALYSIS OF CERTIFICATION SCHEMES: THE CASE OF
GLOBALGAP, FAIR TRADE, INTEGRATED FRUIT PRODUCTION AND
ORGANIC**

**ANÁLISE COMPARATIVA DA CERTIFICAÇÃO: O CASO DE GLOBALGAP,
COMÉRCIO JUSTO, PRODUÇÃO INTEGRADA DE FRUTAS E ORGANICO**

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ABSTRACT

Certification has become increasingly relevant as a marketing signal for agribusiness especially in the fruit sector over the past few years. Substantial parts of many value chains are by now certified by standards as GlobalGAP, Fair Trade, Integrated Fruit Production and Organic. At the same time, in developed countries, particularly in the European Union and the United States, demand for higher levels of food safety has led to the implementation of certification programs that address more types of safety-related attributes and impose stricter standards. The comparative analysis of the four certification schemes which exist in the fruit sector in Brazil has shown that GlobalGAP and the Integrated Fruit Production (PIF) are similar certification schemes. However, they differ with respect to the number of requirements and their distribution over various stages. Fairtrade certification concentrates on producers' organizations and cooperatives where small-scale farmers belong to and not on individual farmers. With respect to organic certification, the requirements are not directed to a particular product or crop and their level of compliance is not indicated.

Key-words: certification, fruits, Brazil, food safety

RESUMO

Certificação tem se tornado relevante como um sinal de comercialização especialmente no setor de frutas ao longo dos últimos anos. Muitas cadeias estão certificadas por sistemas como GlobalGAP, Comércio Justo, Produção Integrada de Frutas e Orgânico. Ao mesmo tempo, em países desenvolvidos, particularmente como a União Européia e os Estados Unidos, a demanda por níveis mais elevados de segurança do alimento tem levado a implantação de sistemas de certificação que relaciona atributos de segurança do alimento e impõe requerimentos mais restritos. A análise comparativa dos quatro sistemas de certificação que existem no setor de frutas no Brasil tem mostrado que o GlobalGAP e o Produção Integrado de Frutas (PIF) são similares. No entanto, eles diferem em relação ao número de requerimentos a respectiva distribuição ao longo dos estágios. Ao contrário de PIF e GlobalGAP, o Comércio Justo foca na associação de pequenos produtores e cooperativas e

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não em produtores individuais. Em relação à certificação orgânica, os requerimentos não são direcionados para um produto em particular ou cultura e seus níveis de requerimentos não são mencionados.

Palavras-chaves: certificação, frutas, Brasil, segurança do alimento

INTRODUCTION

Producers and exporters of fresh fruits and vegetables from developing countries like Brazil are increasingly required to demonstrate the safety and traceability of their produce up to the consumption stage. In order to access international markets such as the European Union (EU) and the United States (US), fruits producers need to meet the requirements from the buyers and comply increasingly with certification systems. In Brazil, these are specifically the Integrated Fruit Production (PIF), GlobalGAP, Fairtrade and Organic certification schemes. Not clear is the impact these certification schemes have on Brazilian fruit farmers. There is some evidence in the literature, that certification contributes positively to the development of specific export sectors in developing countries. In fact, the Brazilian export market is still relatively underdeveloped, with an export share of only 2.4% of the total produced volume. Brazil is the third largest producer of fruits among developing countries, after China and India. Its total production was 43.8 million tons in 2004, representing 3.2 % of the production of all developing countries. However, it is estimated that only around 2% of the country fruit production (in terms of volume) is exported generating US\$370 million (Brazilian Fruit Institute (IBRAF), 2004).

Grapes and mango exports have been the most successful cases, with around 260,000 tons and 550,000 tons each being cultivated. The regions of Petrolina and Juazeiro, which are part of the Sao Francisco river basin, is responsible for this export performance. This region produced 99% and 88% of the country's grapes and mango exports (IBRAF, 2004). VALEEXPORT (2006) estimates that the sector generates a total of 240,000 jobs directly and 960,000 jobs indirectly in the region.

Given the trend towards tighter food safety requirements in international markets, in 1999 Brazil started to develop the Integrated Fruit Production (PIF) scheme, a national quality assurance program. The Ministry of Agriculture, Food Supply and Livestock (MAPA) requested the Brazilian Agricultural Research Company (EMBRAPA) to further develop the scheme for implementation. The pilot projects involved apples, grapes, mangoes and citrus. As

part of the Fruit Production Development Program (PROFRUTA), this system contributed to strengthen the ties between the public and private sectors, to aim at improving quality, competitiveness and share of national fruits at the international level (Andrigueto et al., 2002). Nevertheless, besides the effort of the Brazilian government in developing and implementing a national certification scheme, the acceptance at both national and international levels was below the expectation. Indeed, as Vitti & Cintra (2003) highlight, supermarkets in the European Union started to require the Global Partnership for Good Agricultural Practice (GlobalGAP) certification, instead of PIF, from Brazilian fruit exporters at the end of 2003. Thus, certification has become increasingly relevant as a marketing signal for agribusiness especially in the fruit sector over the past few years. Substantial parts of many value chains are by now certified by standards as GlobalGAP, Fair Trade, Integrated Fruit Production and Organic.

The objective of this paper is to present a comparative analysis of the different certification schemes which are applied to fruit production in Brazil and to highlight their importance to enhance the competitiveness of the chain. These are GlobalGAP, Integrated Fruit Production (PIF), Fairtrade and Organic.

The role of certification

There are a few studies on certification which have been carried out in Brazil. Major results will be briefly presented. A more detailed description of the four certification schemes will follow in the next section. The adoption of selected certification schemes in the fruit sector differs by region and product in Brazil. According to the statistics from INMETRO (2007), there are more than 1,500 producers with Integrated Fruit Production (PIF) certification or being in process of having it. They are responsible for nearly 1 million tons of fresh fruit produced on 40 thousand ha. Figure 1 shows the percentage of the total 1,521 producers spread over the country producing one of the 16 types of fruits. In the Sao Francisco Valley, there are totally 49 mangoes producers and 101 grapes producers who adopted PIF certification.

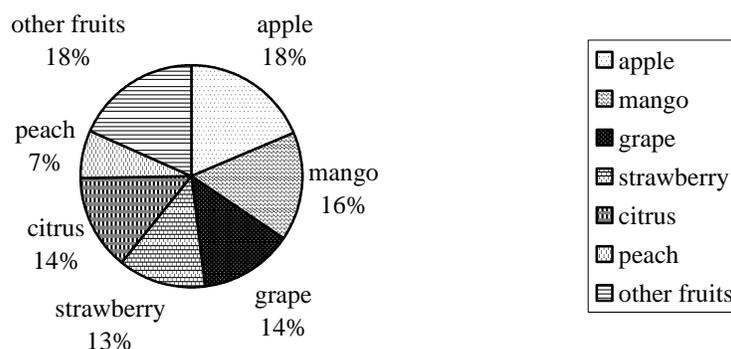


Figure 1: Number of producers with Integrated Fruit Production in 2006

Source: INMETRO (2007)

With respect to organic certification, Darolt (2000) verifies the evolution of organic production in Brazil and points out that the lack of updated statistics makes it difficult to evaluate this alternative agricultural system. Nevertheless, the author gathered data from the organic certifying companies and associations and concluded that around 100 thousand ha have been planted by 4,500 farmers concentrated mainly in the states of Paraná, Sao Paulo, Rio Grande do Sul and Espírito Santo in the year 2000.

Agrotecnologia (2007) presents data regarding the number of farmers with GlobalGAP certificate. In 2007, there were more than 68,000 producers spread all over the world, with approximately 10,000 being fruits and vegetables growers. In total there are only 540 Brazilian farmers who are certified according to GlobalGAP standards. This national figure is - in comparison with the global figure - relatively small. Most of the certified farmers are grapes (45%) and lime growers (33%). In terms of land, soybeans and maize crops require huge areas, occupying 48% of the total area certified involving only 8 farmers. On the other hand, fruit culture is characterized as an activity with intensive labor and is compatible with small productive areas. Therefore, it represents an important alternative to producers who depend largely on family labor force. There are no official data available on Fairtrade certification in Brazil though it does play some role in the survey regions. Implementation of Fairtrade certification started in 2005 only.

METHODOLOGY

A survey of 303 farmers was conducted between July and October 2006 in the Sao Francisco Valley, on the surroundings of Petrolina (state of Pernambuco) and Juazeiro (state of Bahia) in Brazil. The two-stage stratified sampling technique was applied as outlined by Levy & Lemeshow (1999). The first stratum included small[†] (<12 ha), medium (>13 and <49) and large producers (>50 ha) in both regions. The final step involved the identification of producers with certification, the ones without certification and those in the process of becoming certified. A total of 18 strata were identified. To ensure that this sample population could yield significant results from econometric analysis, a statistical power analysis was made to determine the sample size, whereby expected effect size, i.e. expected differences of means of two populations or the alternative hypothesis, can be detected with a certain power and significant level. This approach requires information on population means (μ) and standard deviation (σ) based on lists of producers. The sample size of each stratum was calculated using the program Russlenth[‡].

The paper focuses largely on comparisons among Integrated Fruit Production (PIF), GlobalGAP[§], Fairtrade from the Fairtrade Labeling Organizations International (FLO), and Organic Certification. Similarities and differences among them are investigated regarding the requirements for fruit producers. The materials used in this analysis are based on information from Normative N. 012 (2003) for mango production and from Normative from N. 011 (2003) for grapes concerning PIF and GlobalGAP (2007a) for GlobalGAP. Data on Fairtrade standards for fresh fruits are based on FLO (2007) and standards on organic production are based on (International Federation of Organic Agriculture Movements IFOAM, 2008).

DISCUSSIONS AND RESULTS

Integrated Fruit Production (PIF)

Integrated Fruit Production was first implemented in Europe in 1970 aiming to reduce the level of pesticides used in fruit production. Argentina, South Africa, New Zealand, US and Chile adopted the program in 1993, 1994, 1996 and 1998, respectively (Associacao Gaúcha dos Produtores de Maçã AGAPOMI, 2005). In Brazil, the Integrated Fruit Production (PIF) scheme started with apple production in the cities of Vacaria-RS and Fraiburgo-SC, in 1998. The producers' concern was that, without an adequate certification program they would

[†] Definition of land size according to SEBRAE of Petrolina

[‡] Available on the website: <http://www.cs.uiowa.edu/~rlenth/Power/> (Accessed on August 2006)

[§] Since 07th of September 2007, EUREPGAP has changed its title and logo to GlobalGAP.

certainly be out of the international market. Furthermore, other regions in the country started to implement the program supported by the Ministry of Agriculture, Food Supply and Livestock (MAPA) (AGAPOMI, 2005).

PIF is a program which was created in Brazil by the Normative N. 20 in 2002. The Normatives N. 11 (2003) and N. 12 (2003) establish the requirements for grapes and mango production, respectively. In 2006, the Normative N. 58 instituted the control of agro-toxic residues in fruits designated to the European Union, in compliance with the MAPA in the National Plan of Security and Product Quality of Vegetal Origin (PNSQV). The purpose of this instruction is to guarantee the fruits' quality and safety as well as the environmentally-friendly production.

Regardless of the fruit type, there are many requirements to be met by the producers to acquire the certificate. The level of compliance of requirements is divided in mandatory, recommended, forbidden and allowed with restrictions. Data were compiled considering each sub-thematic area within the major thematic area as one requirement having a different level of compliance. There are a total of 115 requirements of which mandatory thematic areas and recommended ones represent each around 37%. The forbidden sub-thematic areas relate to 16% of all requirements, while the remaining 10% is allowed with restrictions.

However, differentiating between the three stages (i) crop management, (ii) harvest and post-harvest and (iii) the remaining areas, it was found that the crop management stage represents almost 50% of total requirements, followed by harvest and post-harvest with 35% and finally nearly 15% for the remaining topic (Figure 2). Technical training of the farmers regarding Good Agricultural Practices (GAP), including all stages of the crop development, until the post-harvest process, is provided.

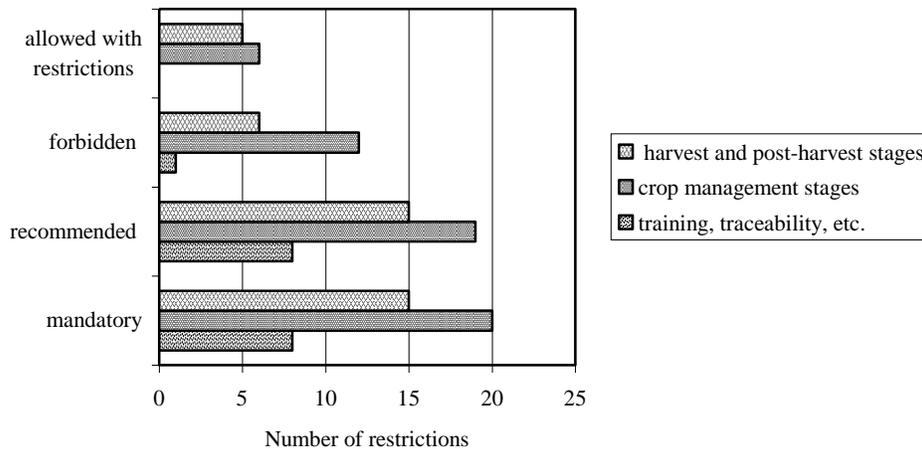


Figure 2: Summary of the PIF requirements

Source: Normative N. 11 and N. 12 (2003)

For PIF certification, book keeping records are required for inspections. The book keeping process along the production chain is well-defined, including three stages. While the book keeping 1 includes more general information, climate conditions and machinery, field book keeping 2 contains data with respect to each plot of the productive area. In this section, the producers have to control for possible diseases, plagues and natural enemies which may occur during the different stages of growth. The data regarding crop management, fertilizers, agrochemicals, irrigation and crop protection is also required in detail. The post-harvest book keeping is related to data about the identification of the fruit, and an analysis of defective fruits. Furthermore, producers have to fill in the form of the packed fruit, the control of the sample quality, the hygienic control of the packing house and calibration control of the equipment.

Andrigheto (2002:42) describes the procedure when an individual or entity decides to become part of the Integrated Fruit Production system. Roughly, they must go through a waiting period necessary for provisions and requirements (Normative N. 20) of the PIF system, according to the individual fruit species, as published by the Ministry of Agriculture, Livestock and Food Supply. The waiting period corresponds to one agriculture cycle. The conformity to acquire the PIF certificate is developed into six stages: regularization; request; auditing; decision; acquiring the certificate and maintenance.

GlobalGAP

GlobalGAP started in 1997 as an initiative from retailers belonging to the Euro-Retailer Produce Working Group (EUREP). It has subsequently evolved into an equal partnership formed by agricultural producers and their retail customers. Their aim was to develop widely accepted standards and procedures for the global certification of Good Agricultural Practices (GAP) (GlobalGAP, 2007b).

GlobalGAP is a private sector body that sets voluntary standards for the certification of agricultural products. The standard is primarily designed to reassure consumers about the way food is produced on the farm by minimising detrimental environmental impacts of farming operations, reducing the use of chemical inputs and ensuring a responsible approach to workers' health and safety as well as animal welfare (GlobalGAP, 2007b).

The characteristics of GlobalGAP which can be summarized as (a) a pre-farm-gate standard, which means that the certificate covers the process of the certified product from farm inputs like feeding or seedlings and all the farming activities until the product leaves the farm; (b) including annual inspections of the producers and additional unannounced inspections; and (c) consisting of a set of normative documents. These documents cover the general regulations, the Points of Control and Compliance Criteria and the checklist (GlobalGAP, 2007b).

Even though the organization possesses an updated version from July 2007, the analysis considers the former version, Version 2.1 from October 2004, valid during the data collection of this survey. There are three types of points of control within the GlobalGAP program that producers need to meet to obtain the GlobalGAP recognition: "major musts", "minor musts" and "recommendations". As regards "major musts", a 100% of compliance is required, while for "minor musts" it is 95%. The "recommendations" do not require a minimum percentage.

In total, there are 214 control points and compliance criteria of the GlobalGAP certificate. They are categorized as major musts which represent 23%, minor musts 46% and recommended 31%. Within the highlighted compliance points classified as major musts are crop protection with 31% and production handling with 24%. The item crop protection is also a control target in the minor musts category with 43%, followed by fertilizer use with 15% and finally, both produce production handling and worker health, safety and welfare with 14% each. Recommendations emphasize fertilizer use with 23% compliance points, worker health, safety and welfare with 14% and environmental issues with 12%.

The same requirements cited above were grouped into three sets: the first one refers to all stages related to crop management (soil, fertilizer, varieties, etc); the second includes after harvesting and production handling and the third comprehends the remaining points such as traceability, environmental issues, book keeping, worker health, safety and welfare. According to the compilation, nearly 60% of the three categories of compliance relate to the crop management; within this, minor musts requirements sum 46% of the total, 31% are recommendations and finally 30% are major musts (Figure 3).

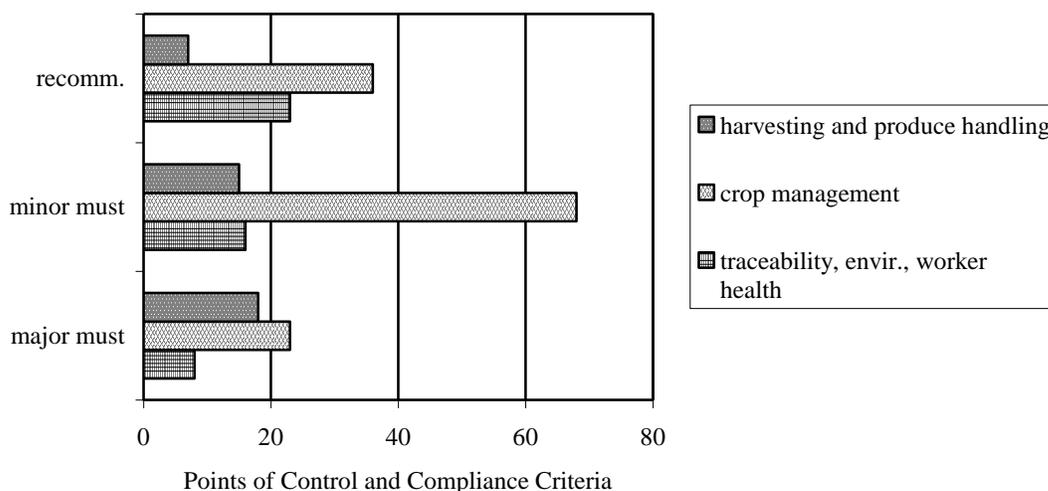


Figure 3: Summary of GlobalGAP requirements

Source: Own compilation based on EurepGAP checklist (2004)

GlobalGAP (2007b) highlights that the standard requirements have to be applied equally around the world. Due to structural reasons small-scale farmers often face more difficulties to meet the requirements to the same extent as medium and large producers. As a result the small-scale farmers are at risk of missing out market access. GlobalGAP has, therefore, implemented group certification to facilitate market access for small-scale farmers. Group certification implies that smallholders form a group and obtain a certification together. It allows the farmers to significantly reduce certification costs such as inspection charges and overhead costs. In addition, since many requirements necessary for GlobalGAP certification can be centralized (e.g. pesticide controls), farmer groups can benefit from the scale effects. Group structures are also an easier way to provide farmers with advice regarding the implementation of the standard. The monitoring is done twice a year. The farmer is aware

about the time of the first visit, while the second one takes place without informing. The certificate is valid for 12 months.

Benchmarking among GlobalGAP and other schemes

Initially, individual supermarkets had developed their own systems and labels. For example, in the UK, Tesco has developed “Tesco’s Nature’s Choice,” and Marks & Spencer created the “Farm to Fork” label. As a result, the various companies’ codes of practice became increasingly confusing, and the multiple inspections were costly and time-consuming. In response, firms have organized collective action to formulate and apply joint or industry-wide protocols embodying the core elements of GAP, Good Manufacturing Practices (GMP), and HACCP. In doing so, they hoped to reduce problems created by having a plethora of industry standards. EurepGAP has been one prominent initiative as such at the level of primary production which developed into GlobalGAP later on.

Jahn, Schramm & Spiller (2004b) argue that a wide variety of certification systems lead to increasing transaction costs. Therefore, they recommend an international benchmarking and the harmonization of standards. Retailers in particular introduced umbrella organizations to ensure the same quality level for all their products independent of the country of origin. GlobalGAP has developed certain benchmark procedures. Recently, the Belgian, Dutch, Danish and German meat sector has founded the “European Meat Alliance” to create common standards.

On the contrary, as highlighted by WTO (2005:26), “harmonization to international standards is not always desirable, as it reduces product variety. Besides, it may not always be easy to agree on a global standard as local standards are often the outcome of specific technical requirements of domestic producers as well as the reflection of social values in a society”.

The benchmarking process is based on existing national or regional farm assurance schemes recognized as an equivalent to GlobalGAP. Examples of benchmarking processes can be seen in South and Central America, Africa, and Asia, most recently in Japan and Thailand [such as ChileGAP, ChinaGAP, KenyaGAP, MexicoGAP, JGAP (Japan) and ThaiGAP]. They are backed by national governments, retailers, producers and exporters. The figures presented by GlobalGAP (2007b) show that worldwide 11 processes of benchmarking between a national certification scheme and GlobalGAP of fruit and vegetables as well as flowers have already been approved, 6 cases are provisionally approved and 7 cases are in process.

Garbutt & Coetzer (2005) explain in their paper that the GlobalGAP certification system tries to set the benchmark for the procedure and the importance of harmonizing different private sectors. The GlobalGAP certification system also tries to guarantee food assurance standards on a global level. The benchmarking process consists of a multi-staged process: (i) application; (ii) the technical review process (preliminary technical review, peer review, independent technical review, independent witness assessment, technical and standards committee review) and (iii) formal recognition of applicant's standards.

In a discussion by Espanion et al. (2005), benchmarking between GlobalGAP and PIF systems for fruits and vegetables in Brazil was mentioned. The authors pointed out some equivalence between PIF and GlobalGAP such as the guarantee of food safety, traceability, and the use of pesticides registered in the exporting or importing country as well as safety of the worker. While PIF shows the details of each product, for example, color of the fruit, size, level of sugar, pH, texture, etc. GlobalGAP represents generic requirements for fruits and vegetables, meat, seeds, etc. The attempt of the Ministry of Agriculture, Livestock and Food Supply to benchmark is still ongoing.

Fairtrade

The Fairtrade Labeling Organization (FLO) was created in 1997. It is recognized as a non-profit organization which offers the development of standards that benefit small farmers and their employees and also promote sustainable production as well as guarantee fair prices and an extra premium. Besides the minimum requirements, FLO expects that producers continuously improve the working conditions, increase the environmental sustainability and also invest in human capital. Furthermore, FLO supports producers with information regarding new business and market opportunities. Apart from fruits and vegetables, the range of products to which FLO is applied includes tea, coffee, cocoa, honey, juices, wine grapes, dried fruits, nuts and spices and non-food products such as flowers and plants, sports balls and cotton seed (FLO, 2006:3-5).

According to FLO (2007a), Fairtrade requires fair and transparent trading conditions concerning prices, payment and quality procedures. The standards require that all products sold with the Fairtrade label must be produced by certified producers. Considering prices and price premium, the buyers shall pay the producers' organizations at least the minimum Fairtrade price set by FLO. Producers and buyers should have a contract establishing the

volume, quality, price and payment conditions. The payment requirement is for example that 50% of the price should be paid at the moment the product is delivered and the payment of the rest should follow 48 hours after receiving the product.

According to FLO (2007) the total number of requirements is 105, 55 being considered as “minimum” (or 52%) and 50 considered as “progress” (48%). The “minimum” must be achieved by all producers, while with respect to the “progress requirements”, permanent improvement must be visible as documented through a yearly report by the producer organizations. FLO tries to ensure that fair trade benefits are reaching small farmers and small producers’ organizations which have potential for development.

In addition, FLO requires that these organizations should always follow the national legislation and in case of standards being higher than those issued by FLO, the former ones should prevail. The standards applied to small producers’ organizations are divided into four sections: social development, economic development, environmental development, and standards on labor conditions.

The first section considers social aspects such as democracy, participation, transparency and non-discrimination, among others. In the economic development part, the concerns are about the premium, the ability to export and the organizational improvements. The environmental part focuses on the assessment, planning and monitoring based on an environmental plan, with each producer being responsible for ensuring his/her compliance. Thus, the maintenance of protected areas, the sustainability of native species, the improvement of the environmental and agricultural practices should be planned and reported. The concern is extended to the conservation of fauna and flora and to water management issues. The details about the use and non-use of agrochemicals are well defined. Recycling materials, fire, soil management and non-use of Genetically Modified Organisms (GMO) deserve some attention in the analysis. The last section sets the standards on labor conditions according to International Labor Organization (ILO) Conventions. An overview of the four sections is presented in Figure 4. There is higher emphasis on environmental development issues (45% of the minimum and 44% of the progress requirements) and standards on labor conditions (22% and 34%, respectively).

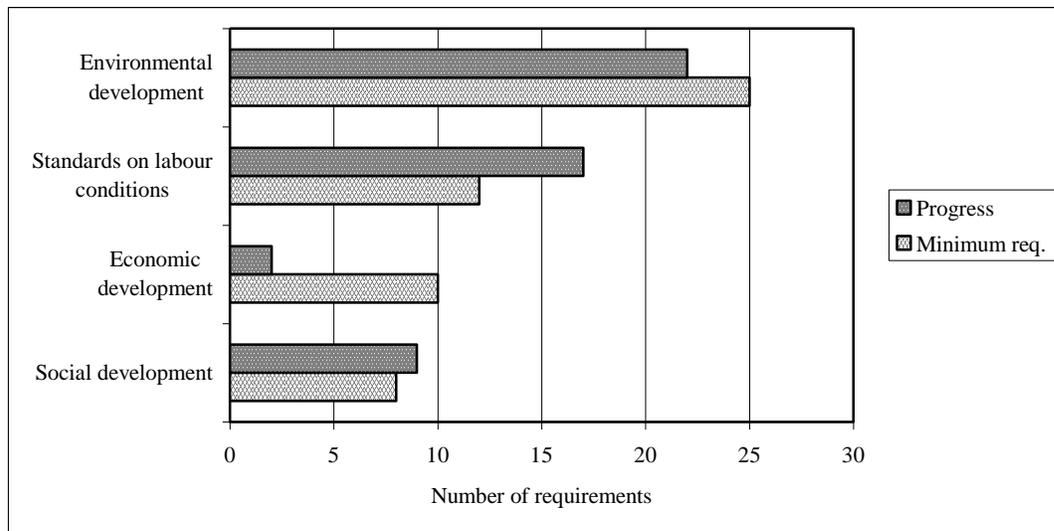


Figure 4: Summary of Fairtrade requirements

Source: Own compilation based on FLO (2007)

Fairtrade certification is accomplished by an international certification company, the FLO-CERT GMBH, in more than 70 countries (FLO, 2006; FLO-CERT, 2007). The steps to be followed for certification can be divided into: application, initial inspection, evaluation, acquiring certification and after certification.

The application process begins with filling the application form. The purpose is to provide some information and clarify the rules of FLO. Afterwards the inspection takes place in order to evaluate the compliance of the producer or trader with the relevant Fairtrade standards. In a next step, the correction of the earlier non-conformities is evaluated. Once all of them are fixed, the organization issues a one-year period certificate. Before the end of a certification cycle, a renewal inspection is done in order to verify the compliance with the standards.

Organic certification

According to IFOAM (2007), organic standards have long been used to create an agreement within organic agriculture about what an “organic” claim on a product means, and to some extent, to inform consumers about it. Certification is a voluntary activity, although the market began to demand it for sales transactions. The Organic Guarantee System (OGS) Committee is designed to facilitate the development of organic standards as well as to provide an international guarantee. It unites the organic world through a common system of standards, verification, and market identity. Furthermore, organic certification is a procedure to verify that the production process conforms to certain standards. In other words, certification is

primarily an acknowledgement that these products have been produced according to organic standards.

According to IFOAM (2008), the organic requirements are divided in (i) organic system, (ii) type of production (plant and crop production and genetically modified organisms); (iii) processing and handling; (iv) labeling; and (v) social justice. The 70 organic agriculture's requirements are classified in "required" and "prohibited" standards. The requirements on the sections which address more attention are crop production and processing/handling with 14 or 25% of the required standards for each of them. However, processing/handling also has 7 of the requirements classified as prohibited. The requirements on the sections GMO, labeling and social justice are fewer.

Regarding ecosystem and biodiversity principles, IFOAM (2008) notes that organic standards must ensure firstly that the biodiversity is maintained or enhanced on the farm holding on crop and/or non-crop habitats. Secondly, socially significant elements of the landscape on the farm holding such as historic features or sacred sites must be preserved. The principle applied to resource management relates to a set of requirements that standards have to meet.

The conversion of a plant production system takes at least 12 months. The objective is to establish a suitable period of organic management prior to the organic status of a crop, during which contaminants are reduced and healthy soils and sustainable ecosystems are being established. The organic management aims at sustaining production at all production stages in order to ensure that organic practices are implemented along the entire production chain from propagation to the final product including the production of seeds and propagation materials. Further, organic crop production sustains and enhances the health of the soil and ecosystem. The management of soil fertility requires the enhancing of the soil-ecosystem by incorporating green manure and other biodegradable inputs. The substances used are on the IFOAM Indicative List of Substances for Organic Production and Processing. The prohibited practices refer to the use of synthetic nitrogen fertilizers, phosphates and sodium nitrate as well as producing crops in hydroponics systems (IFOAM, 2008).

The standards on processing and handling require that risks of product contamination and environmental pollution are identified and minimized, transparency and traceability in the organic processing chain are guaranteed, and measures are taken to prevent co-mingling of organic products with non-organic products in processing, packing, storage, and transport. A

product labeled as organic or in-conversion should comply with the applicable organic standards where 95 to 100% of the ingredients are organic. The labels identify the person or company responsible for the product and the body that assures conformity to the applicable organic standard (IFOAM, 2008).

Organic agriculture has a social policy that is in accordance with the International Labor Organization's (ILO) conditions; employees and contracted workers have the freedom to associate, to organize, to bargain collectively, to have equal opportunities, are not discriminated and are guaranteed human rights and fair working conditions (IFOAM, 2008).

According to FAO (2001) producers and exporters of organic fruits and vegetables seeking to sell their products under the organic label in developed countries have to obtain organic certification. This can be done by the certification bodies of the countries targeted for export, or by other foreign certification bodies, or under a partnership agreement between these two types of certification bodies. To date, relatively few developing countries have certification bodies within their borders, although the situation is changing.

In Brazil, according to the Organic Planet (2007), there are 18 certifying companies able to certify organic products such as fruits, vegetables, dairy products, sugar, poultry, coffee and grains. The Institute of Biodynamic Certification Association (IBD) is one of the companies which deals with the certification and control of organic and biodynamic production. According to this company, the certification procedures involve, apart from other requirements, a process to convert the land lasting from 2 to 3 years. This process is accompanied by extension workers who inspect the land and guide the producers during all stages. The monitoring is done once a year (IBD, 2007).

CONCLUSION

This paper presents a detailed review of the PIF, GlobalGAP, Fairtrade and organic certification schemes. Farmers have a certificate assured for 12 months. The monitoring occurs three times a year for PIF certified farmers, twice for GlobalGAP and once for organic and Fairtrade ones. Particularly, farmers with PIF certification have to comply with 115 requirements. In order to acquire GlobalGAP certification, farmers have to comply with 214 requirements. A comparison of the compliance points of PIF and GlobalGAP reveals that PIF has 85 of the total requirements set as mandatory or with some restrictions, while GlobalGAP has 148 major and minor musts. Most of the requirements from GlobalGAP are inclusive in

PIF, but differences exist with respect to their level of importance and distribution over various stages. PIF focuses with 57 of the total requirements on the crop management compared to 128 of GlobalGAP. In both cases, the second major stage is the post-harvesting process and related issues. Additionally, it has been found that farmers with GlobalGAP certification utilize the book keeping provided by PIF, although GlobalGAP itself does not require any book keeping. It means that the process to certify with GlobalGAP becomes easier and faster when the farmer has already PIF. PIF provides through normatives, specific procedures with regard to plant management and post-harvesting for each type of fruit. GlobalGAP in contrast presents overall requirements to be applied for all fruits and vegetables, not observing their different characteristics.

The analysis of the Fairtrade requirements reveals that it focuses on small producers' organizations. All producers must achieve 55 out of the 105 of the requirements. Considering both types of requirements, minimum and progress, it was found that the stage which receives most attention is the environmental part with 48 requirements, followed by the labor conditions with 29. Fairtrade certification does not have its own book keeping. It focuses more on the overall process instead of on particular characteristics and procedures of the production system. It guarantees a minimum price premium for farmers, in contrast to other certification systems.

An analysis of the organic certification standards reveals that the program disposes requirements as required (total of 57 out of 70) and prohibited (total of 13) but does not specify their level of compliance. In addition, the requirements are not directed to any kind of product or crop in particular. Major emphasis is put on the production system. Organic certification does not include any book keeping obligation.

Based on the findings, adopting certification is considered a catalyst to increase fruits exports, with farmers benefiting in economic and environmental terms. On the one hand, farmers have an incentive to upgrade and are able to access the international market with certification. Mango and grapes producers having a certificate are more likely to find customers in the international markets. Thus, certification is indeed a passport to access international markets. On the other hand, certification excludes less capable growers from the market, meaning that the increasing level of requirements *per se* selects the farmers who are able to comply. But also the access to information may also restrict farmers from participation in certification programs. Thus, organizations

supported by government should assure that information is available and that certification is a transparent and a voluntary process.

The Brazilian government and the private sector could promote the consumption of certified fruits via campaigns on the TV or fairs in strategic geographical locations. Domestic consumers should become aware of the environmental benefits of certified products. In particular, focus should be given to the benefits of consuming healthier fruits. In addition, promoting the consumption of certified fruits would give incentives to more farmers to adopt certification.

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