Wageningen University – Department of Social Science

Do Smallholders Benefit from Group Certification?

A Case Study on the Social and Economic Effects of Rainforest Alliance Group Certification on Small-Scale Tea Farmers in Misiones, Argentina

MSc. Thesis

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Picture tea (cover): http://www.lipton.com.au/blog-posts/item/lipton-releases-its-2012-sustainable-australia-report

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Abstract

A common problem of voluntary, sustainable certification initiatives is that certification mainly reaches large-scale farmers. As a result, many small-scale farmers do not participate in a certification program. Therefore, several certification bodies initiated group certification as a tool to increase the accessibility for smallholders. The objective of this study is to generate insights on the effects of group certification on individual smallholders. In addition, this study aims to provide an understanding of the participation of smallholders in group certification. By conducting a case study on small-scale tea farmers in Argentina, the social and economic effects of Rainforest Alliance group certification and the participation of smallholders are investigated. The perceptions of certified smallholders are collected by field interviews. Additional information is gathered by interviews with other important stakeholders and by field observations. Analysis of the perceptions of the farmers showed that group certification barely contributed to the economic well-being of certified smallholders. As an oppose to the lack of economic benefits, the certified smallholders did perceive an improvement on their social well-being; the main social effect of group certification is increased knowledge level of the farmers. Furthermore, this study discovered that group certification remains focused on large-scale farmers. As a consequence, still a limited number of smallholders participate in group certification. Based on these results it cannot be assumed that group certification includes smallholders and that certification leads to social and economic benefits for farmers.

Key-words: group certification, smallholder, effect, tea, Argentina, Rainforest Alliance.

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Abbreviations

4C	Common Code for the Coffee Community Association
FLO	Fairtrade Labelling Organizations
FSC	Forest Stewardship Council
IFOAM	International Federation of Organic Agriculture Movements
ILO	International Labour Organization
INTA	National Institute of Agricultural Technology
NGO	Non-Governmental Organization
PEFC	Programme for the Endorsement of Forest Certification schemes
RA	Rainforest Alliance
SAI	Social Accountability International
SAN	Sustainable Agriculture Network
SFI	Sustainable Forestry Initiative
UN	United Nations
UTZ	UTZ Certified

Preface and acknowledgements

This research is the final proof of competence for obtaining the Master of Science (MSc.) degree in Economics, Environment and Governance at the Wageningen University in the Netherlands. This master thesis project has been a cooperation between Wageningen University and Imaflora.

During my study at the Wageningen University, I explored that I had large interests in agricultural economics, sustainable development and governance. In addition, I had a strong desire to go to Brazil. Via Otto Hospes, my supervisor of the Wageningen University, I came in contact with Imaflora, Institute for Agricultural and Forest Management and Certification, located in Brazil. As Imaflora works as a certification body it was soon decided that my thesis project was a research on the effects of group certification on small-scale tea farmers in Misiones, Argentina.

For six months I stayed in South America: three months at the office of Imaflora in Brazil and three months doing research and travelling through Argentina. The thesis project gave me the opportunity to learn about the interesting work of Imaflora, the Rainforest Alliance certificate and the daily lives of the tea farmers in Misiones. Besides, I also learned a lot about my own skills, capabilities and personality. I have learned to set up a research project, to deal with issues that were faced during the fieldwork and to adapt to this in a different culture.

For making it possible to do a successful research and having an unforgettable time in Brazil and Argentina, I would like to thank some people that were involved and who supported me during the thesis project.

First of all, I would like to thank the important contribution and guidance of my supervisor Otto Hospes, of the Wageningen University, in the realization of this research. The kindness and especially the patience to make this research a success, is very much appreciated.

In addition, I would like to thank Imaflora, because without their support, this research would not have been possible. Special thanks to Luis Fernando Guedes Pinto, executive director of Imaflora, for giving me the opportunity to do this interesting project. Also, special thanks to Tharic Galuchi, certification coordinator of Imaflora, for providing me information on the certification and helping me with the preparation of the fieldwork.

The actual fieldwork in Argentina would not have been possible without the help of José Moreira, technical consultant in Argentina. José Moreira helped a lot in the preparation of the fieldwork and provided lots of interesting information on group certification in Misiones. Also many thanks to his great daughter, Gal Moreira, for translating all the interviews. In addition, a lot of thanks to the rest of the family Moreira, for being a great and loving host family.

Also many thanks to the tea factory, who arranged the interviews with the farmers and provided logistical support. Especial thanks to the two technicians who were my drivers during the fieldwork and who provided lots of useful background information. Also thanks to the group administrator of the factory for providing information and for allowing the investigation of the group.

In addition, many thanks to all the farmers which were very welcoming and open during the interviews. All the interviewees have been very helpful and thoughtful.

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Last, but not least, a lot of thanks to my dear friend Laura van Duijvendijk - Snip for the English grammar and spelling check of this thesis.

Pytsje Bakker

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Summary

As a response to increasing concerns about the environment, sustainable certification was initiated. Sustainable certification is a market mechanism that aims to increase sustainable production. Despite an increasing number of sustainable certification initiatives, it is argued that it mainly reaches large-scale farmers. As a result, many small-scale farmers do not participate in the certification program. Consequently, several certification bodies initiated group certification as a tool to increase the accessibility for smallholders.

A lot of global certification initiatives, such as Rainforest Alliance, Forest Stewardship Council and Fairtrade, use group certification as a tool to include more smallholders. However, as group certification is a relatively new policy tool, group certification barely received attention in research. Therefore, the objective of this study is to generate insights on the effects of group certification on individual smallholders and it aims to provide an understanding of the participation of smallholders in group certification. By conducting a case study on small-scale tea farmers in Argentina, the social and economic effects of Rainforest Alliance group certification and the participation of smallholders are investigated.

This study seeks evidence of effects of group certification by means of a pipeline approach. The pipeline approach is an evaluation design in which different generations of certified farmers and farmers that are not certified yet, but are scheduled to do so, are being interviewed and compared with each other. In addition, a recall is added in the interviews, this means that information is gathered about the current situation and the situation prior to certification. The combination of the pipeline-approach and the recall generates a double-check in this study.

To reduce the selection bias, the focus was limited to one group of certified farmers. The investigated group is the first certified group of Argentina (in 2008). In addition, the group is assumed to include most smallholders of all the certified groups in Argentina. A total of 25 currently and prospectively certified farmers were visited at their farms and interviewed about their perceptions on the effects of group certification. During the in-depth interviews with the farmers, a member check was included to improve the research credibility. In addition, to establish causality with the possible effects, the farmers were asked if there are possible changes that can be attributed to the certification. Besides the interviews with the smallholders, additional information was gathered by interviews with other important stakeholders and by field observations during the site visits at the certified farms.

Analysis on the perceptions of the certified smallholders shows that group certification barely contributes to the economic well-being of the certified farmers. On one hand, half of the farmers believe that their productivity has increased. On the other hand, 90% of the farmers believe that their economic situation did not change because of the certification. One of the reasons is that 40% of the farmers perceived higher costs because of the certification. Another important reason that the farmers perceived no change in their economic situation is the low price of tea. This study found that minimum tea prices in Misiones are set by the government. As a response, the largest tea factories of Misiones decided to set their own price, which is obviously lower than the price that is set by the government. This study argues that because of this artificially low price, farmers cannot actually benefit from efficiency gains of production. This means that higher productivity could not improve the economic situation of the farmers.

As an oppose to the lack of economic benefits, the certified smallholders did perceive an improvement on their social well-being. Most farmers are not formally educated, therefore, the farmers believe that gaining knowledge on good agricultural practices is the most important contribution of the certification. Another important contribution of the certification is that the farmers take better care of their health. The knowledge gained and the changing agricultural practices ensure that the farmers work safer and are more aware of the risks at the farms.

Besides the socioeconomic effects of the certification on smallholders, also the participation of smallholders in the certification were investigated. As in this particular case study the factory organizes the certification, it is also the factory that decides which farms become certified. Since the factory owns many farms, they prefer to certify their own farms first. To minimize the costs, medium- or large-scale farmers with best agricultural practices are next to become certified. Moreover, in the case study it was found that the certification is arranged per farm (or plot) and not per farmer. As each farm has to be certified separately, it seems on paper that the certified group includes many smallholders. However, when looking closer to the different farms, it can be seen that several farms are owned by one farmer and thus the smallholders turn out to be medium- or sometimes even large-scale farmers. Although group certification is considered to increase the accessibility for smallholders, this study discovered that group certification remains focused on large-scale farmers, limiting the number of smallholders that participate in group certification.

This study concludes that it cannot be assumed that group certification includes smallholders and that certification leads to social and economic benefits for the farmers. The case study shows that group certification remains focused on large-scale farmers. As a consequence, only a limited number of smallholders participate in group certification. As a result of the certification this case study shows that certified smallholders perceive an improvement on their social well-being. Unfortunately, certified smallholders barely perceive an improvement on their economic well-being.

Chapter 1. Introduction

1.1. Problem Statement

As a response to increasing concerns about the environment, numerous initiatives have been introduced to improve sustainability issues. One of these initiatives is sustainable certification. Sustainable certification is a market mechanism that aims to increase sustainable production. Most of the sustainable certifications do not only concern the environment, but also social issues. One of the initiatives that concern both these issues is Rainforest Alliance (RA). RA was established in 1986 with its initial goal to protect the rainforest. Nowadays, RA is developed into a well-known international non-governmental organization (NGO) with the broad mission to conserve biodiversity and ensure sustainable livelihoods in developing and tropical countries (Rainforest Alliance, 2013a).

Despite an increasing number of sustainable certification initiatives, it is argued that certification mainly benefits large-scale farmers (Durst et al., 2006; Hajjar, 2012). The difficulties that smallholders face, such as high costs to gain knowledge about the certification and the difficulties to comply with the standards, can lead to non-participation of smallholders. Similar to other major certification systems, RA launched in 2004 an alternative tool, group certification, which is considered to increase the accessibility for smallholders. Group certification is a relatively new policy tool. It should give small-scale independent farmers the opportunity to apply for a certificate in a group. According to a report of the Forest Stewardship Council (FSC), there are three major benefits of group certification (FSC, 2009):

- Shared and therefore lower costs for the individual small-scale farmers;
- Shared information and support for members in order to achieve certification and to keep the certificate;
- Through the collective scale of production there is a better opportunity to have access to markets and to obtain a better price;

Although an increased number of initiatives that launched group certification, it barely received attention in research. Therefore, it is interesting to investigate the benefits of group certification for small-scale farmers. The basis for this investigation is a case study which is focused on small-scale tea farmers in Argentina that are certified in a group by RA. The driving question in this report is: does group certification contribute to the economic and social welfare of smallholders in developing/tropical countries?

1.2. Research objectives

The first objective of this research is to generate insights on the effects of group certification on individual smallholders. In general, it could be said that these individual smallholders are small-scale farmers that fully rely on their family for labour (FAO, 2012). The second objective is to contribute to the political and scientific discussion on whether group certification is capable of changing farming practices and increasing sustainable production of global commodities (social equality and economic viability). A specific objective is to support Imaflora (a non-profit organization to promote sustainable Forest and Agricultural practices) in order to gain knowledge on the effectiveness of their strategy for the certification of farmers.

This research can provide useful insights for different sustainable certification initiatives that are interested in group certification and in particular RA. This research can also be of interest for companies that made commitments with certification bodies, such as Unilever, Mars and Kraft. Lastly, researchers and policymakers may benefit from the results: it gives them insights on the functioning of this relatively new policy tool, group certification. In addition, consumers of developed countries are increasingly interested in the traceability of products they purchase: they want to know where the products come from, how and under what conditions it is produced and whether a label guarantees sustainable production and whether it benefits smallholders. In order to objectively answer the research question independent research is required.

1.3. Research question

The core of this research is to investigate if smallholders benefit from group certification. Based on a case study this research investigates the social and economic effects of RA group certification on small-scale tea farmers in the province of Misiones in Argentina. For comparative reasons, both certified farmers and farmers that want to become certified are investigated.

The research question that will be answered in this thesis is:

- To what extent has RA group certification improved the social-economic well-being of small-scale tea farmers in Argentina?

Several methods are used in order to collect the data, such as semi-structured interviews with key informants and site visits at small-scale certified tea farms. Key informants in this study are the (candidate) certified tea farmers, the group administrator, technicians, auditors and other people that are or were involved in the project. Besides the interviews, secondary sources are used such as scientific literature and several websites. Moreover, external audit reports of the certified group were gathered and analyzed.

1.4. Thesis outline

The thesis is organized in four parts. The first part, *part A*, shows the state of sustainability initiatives. *Part B* shows the evaluation framework and the related methodology of this study. *Part C* is specifically focused on the case study and *part D* shows the discussion and the conclusion of this thesis.

Part A is divided in two chapters. The first chapter, *chapter two*, presents a review of similar voluntary sustainability initiatives. The majority of the initiatives use group certification as a tool to increase the participation of smallholders. *Chapter three* shows a review of studies that measure the effects of sustainable certification. In addition, it shows the discussion and challenges that voluntary sustainability initiatives face. *Part B*, which consists of c*hapter four,* presents the evaluation framework and the related method that is used in this thesis. *Part C* is specifically focused on the case study. This part is divided in two chapters. *Chapter five* explains the policy of RA and the standards for group certification. *Chapter six* presents the results of the case study including the social and economic effects of RA group certification. Lastly, *part D*, which consists of *chapter seven*, answers the main research question and presents the conclusion and recommendations.

Part A. The state of sustainability initiatives

Chapter 2. The standards context

This chapter aims to place the topic of this study in a global context. This chapter presents a review of different major certification schemes. In addition, this chapter gives insights on the market trends of a number of certified products.

2.1. Review of sustainability initiatives

Already in the 1920s environmental movements raised concerns about the use of pesticides and the environmental pollution of food production. The environmental movements received more support after the publication of the book 'Silent Spring' in 1962 written by Rachel Carlson. The book discussed concerns about the uncontrolled use of pesticides and its consequences for the well-being of animals, specifically birds, and humans. It was one of the first books discussing environmental issues in the food production (NRDC, 1997). As a consequence of increasing concerns of the use of pesticides, many independent local standards were established around the world, which were based on a so called bottom up approach. In 1972 the International Federations of Organic Agriculture Movements (IFOAM) was formed, which is nowadays a well-known umbrella organization for different independent organic organizations (Steering Committee, 2012).

Over the years, consumers and companies became more aware of the urgency to protect the environment. To protect the environment, standards were established and some products became certified. However, until the late 1980s, beginning 1990s, these certified products were mainly seen as luxury products. In these years, more sustainable certifications were established and certified products became more mainstream. One of the first sustainable certifications was RA and Max Havelaar. RA was established in 1987 to protect the rainforest. Max Havelaar, was launched in 1988 to promote fair trade. Like many other certifications, RA and Max Havelaar were a result of social movements. However, also individual industries, coalitions of industries, governments, NGO's and other important stakeholders launched sustainability standards. One example of a standard that was launched by the industry is the UTZ Certified standard which was created by Ahold (an international retailing group). Another example is the Common Code for the Coffee Community (4C Association) that was launched by a coalition of different stakeholders. Particularly in the last decade, industries played an important role in the development of an increasing number of sustainable certifications. Several commitments were made between sustainable certification initiatives and large companies such as Mars, Nestle and Unilever (Potts et al., 2010:13). An example of such a commitment is between Unilever and RA; All Lipton and PG tips tea will be RA certified by 2015 (Rainforest Alliance, 2013b). Another example is of the coffee of McDonald's McCafe, this coffee should originate from certified sources such as RA, UTZ Certified or Fair Trade International (McDonald's, 2013). As a result, certification and their labels become well known among many (western) consumers.

2.1.1. Voluntary sustainability initiatives

A voluntary sustainability initiative is a non-obligatory initiative that promotes sustainable development. It is seen as a market incentive to stimulate responsible behavior of e.g. industries or consumers. The following initiatives, that all include standards, have been reviewed by Potts et al. (2010):

- 4C Association (4C)
- Fairtrade Labelling Organizations (FLO)
- Forest Stewardship Council (FSC)
- GlobalGAP
- International Federation of Organic Agriculture Movements (IFOAM)
- Programme for the Endorsement of Forest Certification schemes (PEFC)
- Social Accountability International (SAI)
- Sustainable Forestry Initiative (SFI)
- Rainforest Alliance (RA)
- UTZ Certified (UTZ)

There are many other sustainable certification initiatives; the Marine Stewardship Council (MSC), the Better Sugarcane Initiative (Bonsucro, BSI) or the Better Cotton Initiative (BCI). There are also the so called Roundtables, such as the Roundtable on Sustainable Palm Oil (RSPO), Roundtable for Sustainable Biofuels (RSB) and the Roundtable on Responsible Soy Association (RTRS). Nevertheless, a selection had to be made and therefore only ten initiatives have been reviewed by Potts et al. (2010) and are shortly presented below[1].

Rainforest Alliance / Sustainable Agriculture Network (SAN)

RA was founded in 1987 as a response to major concerns of deforestation and loss of biodiversity in tropical rainforests throughout Central America. RA started the first sustainable forestry certification program in 1989 and was one of the founders of FSC in 1993. The first agricultural standards of RA were launched in 1990 with the aim to conserve biodiversity and ensure sustainable livelihoods by changing land-use practices, business practices and consumer behavior. It started to certify bananas in 1990, followed by coffee (1995), citrus and cocoa (1997) and nowadays many other agricultural products in mainly tropical and developing countries. Since 2004 RA uses the tool of group certification to include more smallholders. RA has commitments with large industrial companies such as Unilever, Kraft, McDonald's, Nestlé and Mars. Besides agricultural products, since 2000 tourism is covered by RA. RA helps tourism entrepreneurs in Latin America to conserve their environments and to contribute to local livelihoods (Rainforest Alliance, 2013a; SAN, 2011).

4C Association

The Common Code for the Coffee Community Association (4C) was founded in 2006. The only sector covered by this certification is coffee. Different stakeholders such as farmers, traders, industries, governments, civil society organizations and researchers were involved in the development of 4C in order to create minimum social and environmental standards for sustainable coffee production. The aim of 4C is to include all relevant coffee stakeholders to create a sustainable production. In addition, one of the objectives of 4C is to prepare producers for eventual compliance with other consumer-facing initiatives. All farmers that are certified have to be part of a so called 4C Unit: a group of

[1] For this and the next few paragraphs the report of the State of Sustainability Initiatives Review 2010 is used. This report was a joint initiative of the International Institute for Environment and Development (IIED), the International Institute for Sustainable Development (IISD), Aidenvironment, the United Nations Conference on Trade and Development (UNCTAD) and ENTWINED (Potts et al., 2010). The report is used to provide a review and a comparison of the characteristics and the market trends concerning ten voluntary sustainability initiatives in the forestry, coffee, tea, cocoa and banana sectors.

farmers that produces 4C compliant coffee. A cooperative, a farmers' association or just group of farmers can together become certified (4C Association, 2013).

UTZ Certified

UTZ was an initiative of the Dutch Ahold Coffee Company and a Belgian-Guatemalan coffee bean grower. This certification of sustainable coffee was launched in 1997 and in 2002 UTZ became an independent organization. Since 2002 also other commodities became UTZ certified, nowadays also cocoa and tea are included. UTZ applies group certification to be able to include more smallholders in developing countries. The (group) certification enables farmers to learn better farming practices, improve working conditions and take better care of their children and the environment. UTZ made commitments with companies such as Mars, Ahold, IKEA, D.E. Master Blenders 1753, and Nestlé (UTZ Certified, 2013).

GlobalGAP

GlobalGAP was founded in 1997. GlobalGAP was initiated by European supermarkets under the name EuropGAP. Because of its global reach it changed the name in 2007 to GlobalGAP. The initiative is a response to the increasing concerns of consumers regarding product safety, environmental and human health effects, safety and welfare of workers and animals. The group of retailers established their own certification system for Good Agricultural Practices (GAP) for safe and sustainable products. Sectors covered are among others crop production, livestock and aquaculture. Individual and group certification are both applicable (EuropGAP, 2013; GlobalGAP, 2014).

International Federations of Organic Agriculture Movements (IFOAM)

IFOAM was founded in 1972. IFOAM is the international umbrella organization for organic agriculture. The initiative is a response to the increasing awareness of the impact of the uncontrolled use of pesticides in the agricultural sector on the environment and human health. National organic standards wish to become endorsed by IFOAM, as this is a leading global organization of organic agriculture. If a standard is endorsed by IFOAM, it is internationally recognized as a good organic standard. Since 1994 IFOAM has been developing criteria for group certification (IFOAM, 2003; IFOAM, 2014).

Fairtrade Labelling Organizations International (FLO)

FLO, now simply known as Fairtrade International, was founded in 1997. The sectors covered are a large range of agricultural products including cocoa, coffee, tea and fruits. Since the establishment of Max Havelaar in the Netherlands in 1988, several similar fair trade initiatives were launched around the world. In 1997, FLO united the initiatives under one umbrella, including the Max Havelaars initiatives, to harmonize the standards and the certifications. Nowadays 25 fair trade initiatives from all parts over the world are united by FLO. The fair trade standards are applied to fair trade producers and to companies that trade with fair trade products. Almost all certified products are labeled with the so called Fairtrade certification mark, some labeling initiatives use their own mark. FLO is mainly trying to help smallholders and workers in developing countries. The main goals of the standard are to support farmers to be successful on international markets and to reduce poverty by giving "fair" prices to the farmers. In addition, it aims for good working conditions and "fair" salaries for workers. FLO stimulates collaboration between small-scale producers; therefore it does not

certify individual farmers, but only organizations of which the majority consists of smallholders (Fairtrade International, 2013; Max Havelaar, 2013).

Forest Stewardship Council (FSC)

FSC was founded in 1993. The sectors covered are timber and non-timber forest products. FSC was founded by environmental organizations. It was established as a response to the concerns of global deforestation which were debated during the UN conference in Rio de Janeiro (Brazil) in 1992, the so called Rio Earth Summit. FSC is a certification scheme towards sustainable forest management. Since 1997 FSC introduced group certification in order to improve market access for small-scale forest owners. FSC is supported by international businesses, governments and NGOs such as the World Wide Fund for Nature (WWF) and Greenpeace. In 2012 146 million ha were FSC certified (FSC, 2013).

Programme for the Endorsement of Forest Certification schemes (PEFC)

PEFC was founded in 1999. The sectors covered are the same as FSC, namely timber and non-timber forest products. PEFC is an international umbrella organization towards sustainable forest management. Different than FSC, PEFC uses a 'bottom-up' approach to establish the criteria. Each specific country develops its own criteria with different relevant stakeholders. In addition, the criteria for sustainable forest management need to comply with existing national laws and regulations. To become a member of the PEFC, the national certification system has to be endorsed. PEFC applies both individual and group certification. PEFC is the largest forest certification system worldwide by covering 242 million ha in 2012 (PEFC Nederland, 2011).

Sustainable Forestry Initiative (SFI)

SFI was founded in 1994 by the American Forest and Paper Association (AFRA) in a response to the concerns of forest management and illegal logging. SFI is a certification scheme aiming for sustainable forest management. Originally the standard was established only for the United States of America. However, nowadays it is recognized as a North American standard, with more than half of the certified forest production coming from Canada. In 2005 SFI was endorsed by PEFC. SFI is at this moment the largest member of the PEFC. Group certification is also included in the standard (PEFC, 2013a; SFI, 2009).

Social Accountability International (SAI) / SA8000

SAI was developed by trade unions, NGOs, civil society organizations and companies in 1997. It covers all sectors and aims to improve the conditions of workers worldwide. The SAI was established as a response to concerns of worker conditions in the textile and other sectors. SAI developed a certification system with labour standards and human rights. It works on local capacity for better working conditions. The standards are based on existing conventions and declarations of the United Nations (UN) and International Labour Organization (ILO). SAI does not include programs for group certification (SAI, 2013).

ISEAL Alliance

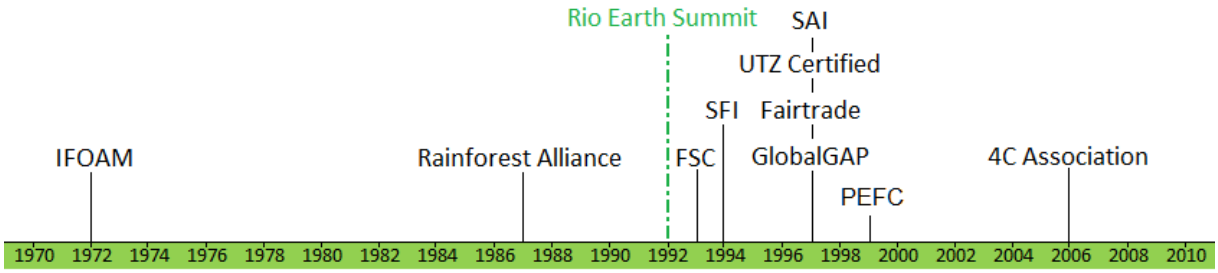
In 1999, the majority of the initiatives mentioned above came together to discuss possible cooperation. In 2002 the organizations decided to merge and the International Social and Environmental Accreditation and Labeling Alliance was formed, which is nowadays the ISEAL Alliance (ISEAL Alliance, 2014).

It is noteworthy that the majority of the initiatives mentioned in this chapter use group certification and other tools to include smallholders in the certification. Some of the initiatives have been using group certification already for a long time; IFOAM certified smallholder groups already since the mid 1980s, but in 1994 IFOAM published for the first time official guidelines and accreditation criteria for group certification (Dimatteo, 2007). In addition, FSC introduced a policy for group certification in 1998 and RA in 2004. However, for most initiatives group certification is a relatively new policy tool.

2.1.2. Diversity of the sustainability initiatives

As presented in the previous paragraph, most certification initiatives are quite young, as the majority was established in the last two decades. *Figure 2.1* gives an overview of the establishment of the initiatives reviewed in this thesis. It can be noted that after the Rio Earth Summit in 1992, several sustainability initiatives were developed, and thus it can be given that the Rio Declaration successfully promoted global sustainable development.

Figure 2.1. Establishment of the sustainability initiatives.



As shown in the previous paragraph, many sustainability initiatives are organized by multi stakeholder groups, such as FSC, SAI, PEFC and 4C. The other initiatives studied in this review are organized exclusively by NGO's (FLO, IFOAM and RA) or the private sector (UTZ, SFI and GlobalGAP).

It can also be seen that a distinction exist between single and multiple sectors covered by the initiative. FSC, SFI and PEFC focus only on the forestry sector and 4C focuses only on the coffee sector, they are therefore single sector oriented. RA, UTZ, FLO, IFOAM, GlobalGAP and SAI cover multiple sectors, with the majority of the products related to the agricultural sector.

In history, the majority of the initiatives were focused on single issues, such as deforestation and the use of toxic chemicals. Since the Rio Earth Summit in 1992, there is a growing emphasis on broad based sustainable development including economic, social and/or environmental aspects. The advantage of a multiple issue initiative is that it is expected to make improvements on several aspects while a single issue initiative is expected to improve only one aspect of the problem (Potts et al., 2010:26).

The majority of the initiatives develop the standards at global level. IFOAM and PEFC are umbrella organizations and the only initiatives that include national and local developed standards. In order to be endorsed by IFOAM and PEFC, these local initiatives need to comply with global guidelines. IFOAM and PEFC have therefore a bottom-up approach, while the other initiatives have a top-down approach. However, the majority of these initiatives include localized indicators and all the initiatives have local auditors engaged. A disadvantage of developing regional standards or localized indicators is that it can bring additional transaction costs, which can end up by e.g. producers or consumers. Also a risk of using different criteria for each region exists: it can lead to unfairness, with more strict criteria for one stakeholder and less strict criteria for the other. On the other hand, applying the same criteria for each stakeholder over the world may not be the most effective method, as each region has different conditions: different culture, soil, species, economy etc. In addition, each country has different sustainable problems and priorities (Potts et al., 2010:30).

2.1.3. Governance structure

The board of directors is important for the management and the decision making of the initiatives. As mentioned before, the majority of the initiatives are multi-sector initiatives and therefore the majority of the boards consist of stakeholders of different sectors. However, NGO's remain a dominant force in the board, as can be seen in figure 2.5 in the report of Potts et al. (2010:39).

Figure 2.5 in the report of Potts et al. (2010:39) shows a great variety in the representatives at the board level of the initiatives. NGO's and civil society play an important role at the board level as they are seated in almost all boards. The board of the Sustainable Agricultural Network (SAN), the standard setter of RA, even consists entirely of a coalition of NGO's. The significant presence of NGO's is not surprising, as many initiatives are initiated or supported by them. The industry and producers also play an significant role at the board level. A good example is the board of GlobalGAP, which consists of half industry/private sector and the other half of producers. The significant presence of the industry is attributed to the origin of GlobalGAP, as it was established by the industry (Potts et al., 2010:38).

Another division at the board level can be made between representatives of developed versus developing countries. The majority of the initiatives originate from developed continents, such as Europe and North America. However, most initiatives focus on sustainable issues in the agricultural or forestry sector in developing continents, such as Africa, Asia and South America. There have been many discussions about the so called North-South conflict; in short, the wealthy North wants the poor South to produce in a sustainable manner to overcome environmental and economic consequences of unsustainable development. The conflict is that the South thinks this is hypocritical, as the North became wealthy by unsustainable development. Also, the South does not have the technology nor the financial assets to meet the requirements set by the North. Therefore, one can say that it is not fair towards developing countries to ask them to comply with all kinds of environmental requirements set by developed countries. In addition, it is argued that the North is afraid of the upcoming economies in the South and wants to keep a competitive advantage by regulating the development. This North-South conflict, as presented in a nutshell, makes it interesting to look at the North-South division in the boards of the initiatives (USAR, 1999). Figure 2.6 in the report of Potts et al. (2010:39) shows the board representation divided by developed versus developing countries.

Figure 2.6 in the report of Potts et al. (2010:39) shows that the majority of the boards are represented by developed countries, suggesting that developed countries indeed determine rules for developing countries. However, the SAN is an exception as the majority of the board members come from developing countries. The SAN sets the standards for RA, implying that the standards of RA are mainly set by developing countries themselves. Nevertheless, it should be noted that the board members of RA are mainly of developed countries. This can be due to the fact that RA consists of stakeholder such as consultants, financial institutions, industry etc.; NGO's are only represented by a small number. All the other initiatives are evenly divided or dominated by developed countries. FSC, GLobalGAP and IFOAM are more or less evenly divided between Southern and Northern countries. SFI entirely consists of representatives of the North. This can be attributed to the fact that SFI deals with North America and not with developing countries (Potts et al., 2010:39). This also implies that SFI is not involved in the North-South conflict.

2.1.4. Criteria

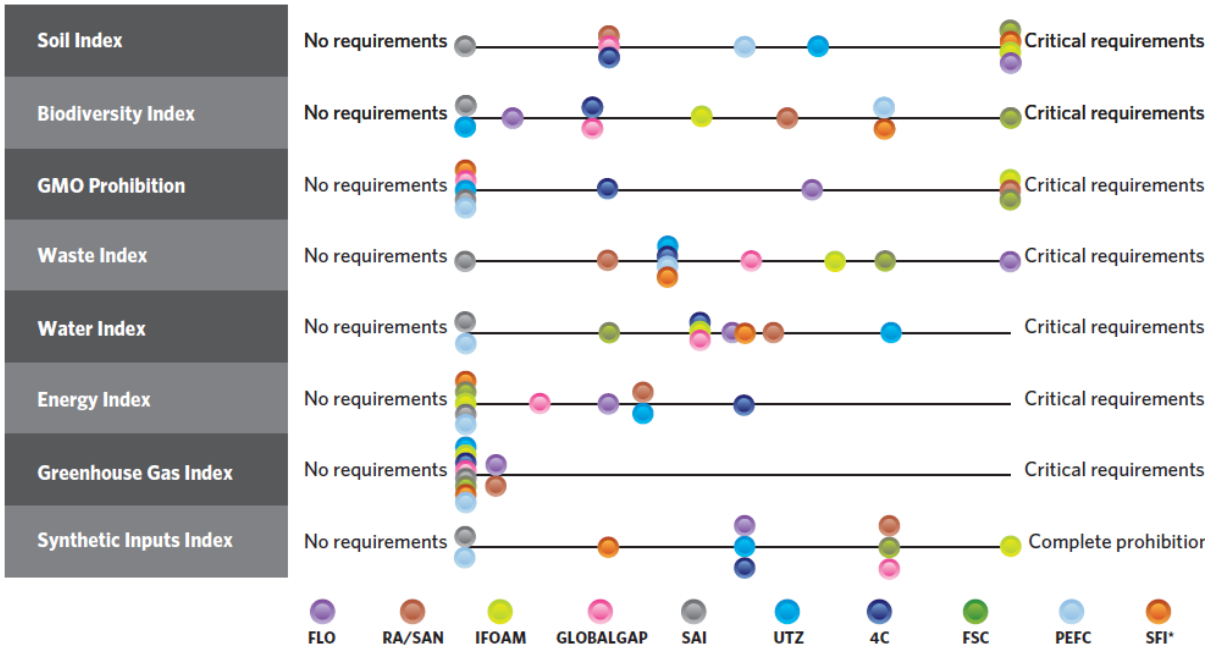
This paragraph mentions the criteria with respect to the three pillars of sustainability: social, economic and environmental sustainability. It is assumed that the criteria for individual and group certification are the same. Most of the initiatives deal with environmental aspects, followed by social and lastly with economic aspects. In addition, Potts et al. (2010:49) concluded that most standards focus on processes rather than performance. This implies that most standards are focused on progress towards best agricultural practices rather than on the results of those practices. Furthermore, it must be mentioned that most of the criteria are descriptions of social, economic and environmental requirements.

In order to analyze the criteria of the initiatives, Potts et al. (2010) distinguished six different scales: (1) No requirements, (2) recommended, (3) required as a long-term objective, (4) required in less than three years, (5) threshold requirements, (6) critical requirement, which is a requirement as precondition, no compliance with a critical criteria means no certification. It is important to mention that only criteria that are listed in global criteria documents or in standard documents have been reviewed by Potts et al (2010). Specific criteria on local, regional or national level are not included in the analysis. It is possible that some initiatives require compliance with regional or national laws. Due to the complexity, these criteria or laws have been excluded in the review of Potts et al. (2010:50). As this paragraph is based on the review of Potts et al. (2010), not all the criteria of the initiatives are covered in this paragraph.

Environmental criteria

In *Figure 2.2* the environmental criteria covered by the different initiatives can be seen. The salient points of *figure 2.2* will be explained. The definition or explanation of the environmental criteria included in the figure can be found in the report of Potts et al. (2010:47).

Figure 2.2. Environmental criteria covered by the initiatives.



* If the requirements of US and Canadian law were to be considered in the index calculation, the marker for SFI would sit at the 66% point for the biodiversity index and the 75% point for both the synthetic input index and water index.

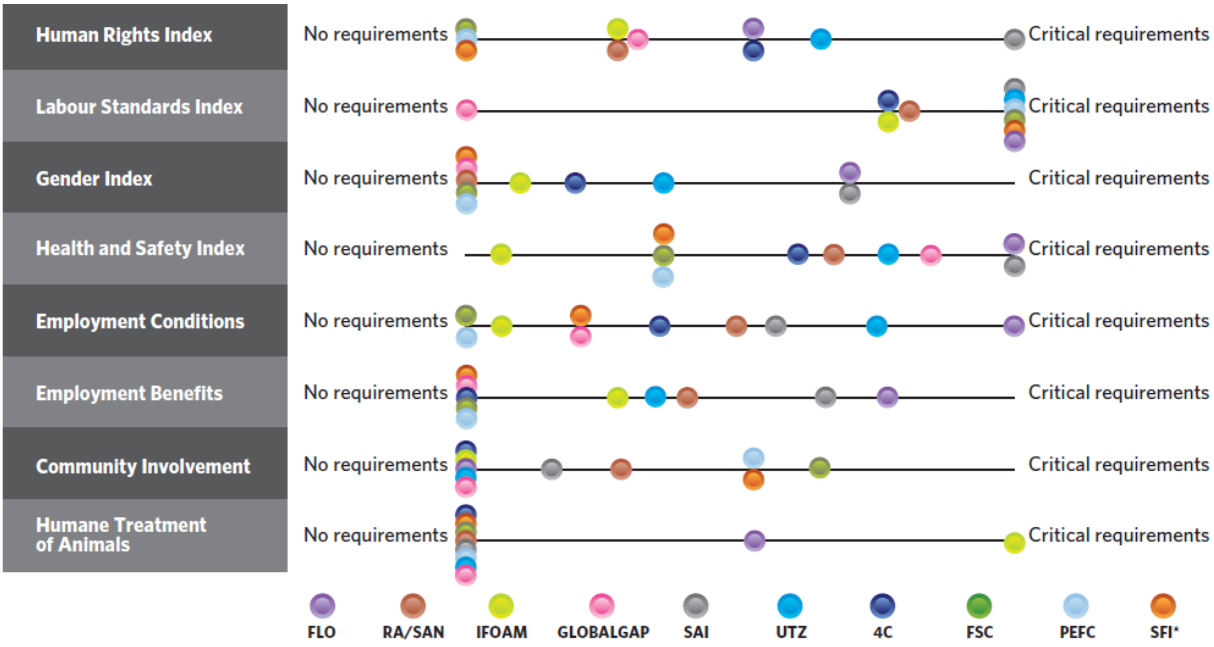
Source: Potts et al., 2010:48 (see appendix A for calculations).

Many environmental aspects are covered by the initiatives. Criteria that are often neglected are GHGs, energy and GMOs. It is noteworthy that almost no initiative includes a criteria related to GHG reduction or other related subjects, except for RA and FLO. This might be surprising, as GHGs are an important cause of global warming. Most critical requirements are related to soil and GMOs. On one hand GMOs are often neglected by initiatives, but on the other hand GMO related criteria are emphasized by initiatives as critical. This is not surprising as it is known that many people have strong opinions on GMOs in production: they are either in favor or against GMOs. This can be clearly seen in *figure 2.2.* Overall, FSC, IFOAM, FLO, SFI and RA cover more environmental criteria than the average environmental cover of the initiatives. FSC, IFOAM and FLO include the highest amount of critical criteria. SAI does not include many environmental criteria; this is not surprising, as SAI mainly works on the improvement of worker conditions (Potts et al., 2010:48).

Social criteria

Aspects related to social sustainability are mainly at community, household and workplace levels. In *Figure 2.3* the social criteria covered by the different initiatives can be seen. The definition or explanation of the social criteria included in the figure can be found in the report of Potts et al. (2010:45).

Figure 2.3. Social criteria covered by the initiatives.



* If the requirements of US and Canadian law were to be considered in the index calculation, the marker for SFI would sit at the very rightmost point of the spectrum (all critical requirements) for both the health and safety index and the employment conditions index.

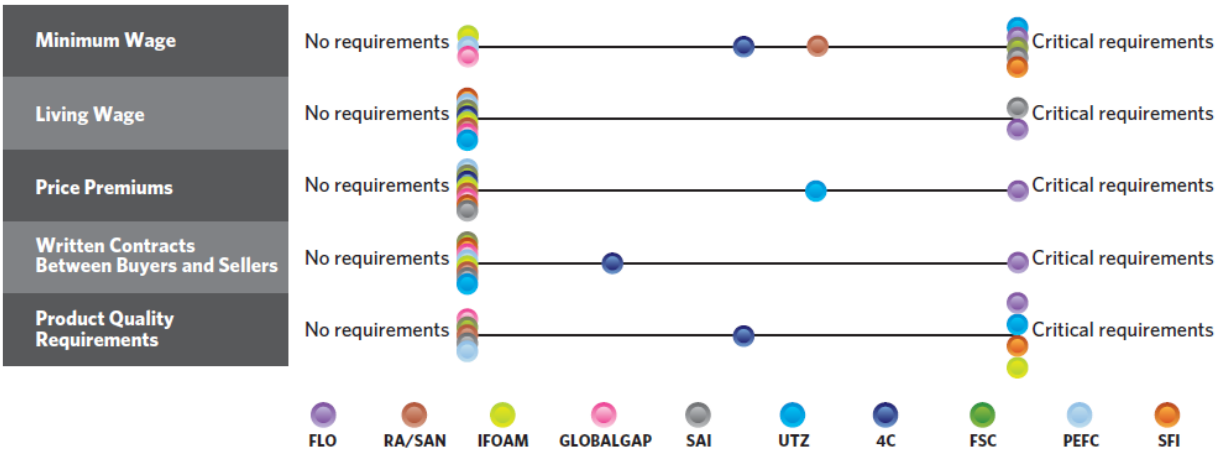
Source: Potts et al., 2010:46 (see appendix A for calculations).

There is a great variety between the criteria used by the different initiatives. A strong convergence between the initiatives can be seen at labour standards, where the majority of the initiatives mark those as critical criteria. Strong convergence can also be seen at gender aspects, employment benefits, community involvement and humane treatment of animals. Unfortunately, for these aspects, the majority of the initiatives has no requirements. Diversification between the initiatives can be seen at human rights, health and safety and employment conditions. Noteworthy is that FLO, SAI and UTZ cover more criteria than average of the initiatives, in particular FLO has the highest amount of critical criteria (Potts et al., 2010:46).

Economic criteria

Many sustainability initiatives promise economic benefits as a result of certification. Expected results such as better market access, better prices and higher productivity can lead to higher incomes for producers. However, these are often expected results of sustainable production and therefore not included in the criteria of the initiatives. Economic requirements are less common than the criteria for the other pillars of sustainability, although some initiatives do include them. The economic criteria included in the review are presented in *figure 2.4.* It can already be seen that there are less criteria included in the figure than in the figures of the social and environmental criteria. The definition or explanation of the economic criteria included in the figure can be found in the report of Potts et al. (2010:49).

Figure 2.4. Economic criteria covered by the initiatives.



Source: Potts et al., 2010:49 (see appendix A for calculations).

Figure 2.4 presents the economic criteria covered by the different initiatives that are included in the standard documents. The majority of the initiatives do not include criteria related to living wages, premiums and written contracts. However, they do include criteria related to minimal wages and half of the initiatives have criteria with respect to the quality of the products. It is interesting to note that there is not much diversification between the initiatives. FLO covers most economic criteria, which is not surprising as they promote fair trade (Potts et al., 2010:49).

2.1.5. Compliance Assessment Process

There are different approaches to measure compliance with the criteria of the initiatives. The entities that check compliance are important to measure the independence of a certification. The level of independence is essential for the credibility and therefore also for the acceptance of the certification on the global market. Low independence, for example in case of self-declaration or if a second party checks compliance, can lead to higher possibility of influences by commercial interests. However, increased independence, for example in case a third party checks compliance, expectedly leads to higher costs. As the costs must be absorbed in the supply chain, this can lead to lower competitiveness. Therefore, the initiatives need to balance between independence and risks versus the costs it entails.

Of the initiatives reviewed by Potts et al. (2010), lowest independence is found at 4C. The compliance assessment process of 4C starts with a self-assessment of the farmers. Then a third party visits the farmers and verifies the self-assessment. In case of a positive verification, the farmers receive a license to sell their coffee as 4C Compliant Coffee (Tropical Commodity Coalition, 2013). All the rest of the initiatives mentioned in the report rely on a form of certification. In case of group certification most initiatives combine a second party internal audits and a peer-review process of a specific group of farmers with a third party independent assessment of the group's management system (Steering Committee, 2012).

Another important aspect of the compliance assessment process is the frequency and type of audits that take place. Audits can range from self-assessment, desktop certification or a simple checklist to more in depth assessments including interviews with managers, workers etc. Figure 2.3 in the report of Potts et al. (2010: 32) presents some different types of audits. As can be seen in that figure, all initiatives make use of a combination of different audits. All the initiatives, except for 4C, require a certification audit as a first audit. GlobalGAP and UTZ have a full certification audit every year. The other initiatives, except for 4C, require annual surveillance audits. After a few years of annual surveillance audits, the majority of the initiatives require to repeat the process, and therefore start with the certification audit followed by annual surveillance audits. In addition, in order to increase the reliability, seven out of ten initiatives require random field checks or surprise audits. It is expected that the costs for self-assessment or desktop certification are lower than for certification audit. However, it is also expected that the reliability of self-assessments is lower than for a certification audits (Potts et al., 2010). With respect to the auditors, most initiatives require some formal training, which in most cases is the ISO 9001 Quality Management System auditor training (Steering Committee, 2012:13).

2.1.6. Sampling methods

Almost all of the initiatives reviewed use group certification to include more smallholders. For practical reasons, not all the individual farmers included in the group certification need to be audited. To determine the number of farmers that need to get audited, all the initiatives reviewed use the ISO 62 square root approach. In this approach the number of farmers being audited is the square root of the size of the specific certification group ($x=\sqrt{y}$). In case of a group of hundred farmers, ten farmers will be audited. This method is internationally accepted, however, when the size of the group increases, the percentage of farmers being audited decreases. With the chance of farmers getting audited decreases, not all farmers may see the need to comply with the criteria. The risk that an auditor misses the farmer that does not comply with the criteria becomes higher with this system. In order to overcome this higher risk, some systems include a cap besides the square root system. This means that a minimum number of farmers need to be audited. There are different combinations of systems to calculate the number of farmers for auditing. For example, FSC uses a percentage to determine the number of farmers getting audited for large- and medium-scale farms and the square root system for smallholders certified in a group. Here again, the determination of the sample methods used by the initiatives, may depend on costs and effectiveness (Potts et al. 2010:33).

2.1.7. Labeling policies

SAI, 4C and GlobalGAP do not label the packages which contain certified ingredients. The other initiatives do have package labeling. Each initiative has its own requirements as is shown in *table 2.1.*

Table 2.1. Labeling policies of the initiatives.

Sustainability initiative	Labeling policies
Rainforest Alliance	A minimum of 90% of a single product or of the core product of multi-ingredient products, needs to be certified to use the RA seal on the package of the product without a qualifying statement. At least 30% needs to be certified to use the RA seal on the package including a qualifying statement. The statement includes the percentage of certified products that the package contains. Products with less than 90% are required to scale-up the percentage over time (Rainforest Alliance, 2012).
4C Association	The initiative does not work with labels, but if a member wants to sell its coffee as 4C coffee, it needs to be 100% 4C Compliant Coffee, it needs an approval of the 4C Secretariat and it must be supported by traceability systems.
GlobalGAP	GlobalGAP does not have a label, but with 100% certified ingredients, one may use a GlobalGAP number (GGN).
UTZ Certified	Only packages with 100% UTZ certified coffee or tea are allowed to use the UTZ Certified Good Inside logo. For cocoa the percentage increased over time from 30% in 2011, 40% in 2012, and 60% in 2013 to 90% in 2014 (UTZ Certified 2011, 2012).
FLO	For products with single ingredients, such as coffee, the product needs to include 100% certified coffee to make use of the Fairtrade logo. For products with multiple ingredients, the product needs to include certified ingredients for those ingredients for which exist Fairtrade standards. In total at least 50% of the volume needs to be certified to make use of the logo.
IFOAM	With a minimum of 95% of organic ingredients, the products may use the term 'organic'. Between a minimum of 70% and a maximum of 95% a product may use the term 'made with organic ingredients'. With less than 70% of the product being organic, it cannot use a label. Although, for specific ingredients the term 'organic' may be used (IFOAM, 2012).
FSC	FSC uses three kinds of labels: FSC 100%, FSC Mix and FSC Recycled. The FSC 100% label means that the product contains 100% material from certified forests. The mix Label is used when the product contains materials from FSC managed forests, FSC controlled sources, and/or recycled material. For the recycled label, 100% of the product needs to be recycled (FSC, 2010).
PEFC	PEFC uses two kinds of labels: PEFC Certified and PEFC Certified and Recycled. Both labels require a minimum of 70% of wood from PEFC Certified or recycled sources (PEFC, 2013b).
SFI	SFI must communicate the percentage of certified materials on the label. A minimum of 10% is required (SFI, 2013).
SAI	SA 8000 certification applies to companies, not products. SAI does not offer product certification or labelling.

Source: Potts et al., 2010:35.

2.2. Global market trends

Table 2.2 shows a global market overview of sustainable agricultural commodities of 2008 and 2012. It can be said that sustainable production becomes more mainstream, as there is an enormous increase in its production. Despite a rapid increase in sustainable produced commodities, oversupply of sustainable agricultural commodities remains a challenging issue on the markets.

Table 2.2. Sustainable markets: Compliant production as a percentage of global production for 2008 and 2012 versus compliant sales as a percentage of global production for 2012.

Commodity	Production 2008	Production 2012	Sales 2012
Coffee	15%	40%	12%
Cocoa	3%	22%	7%
Palm oil	2%	15%	8%
Tea	6%	12%	4%
Cotton	1%	3%	2%
Banana	2%	3%	3%
Sugar	<1%	3%	<1%
Soy bean	2%	2%	1%

Source: Potts et al., 2014: 90.

This paragraph gives a more detailed overview of the market trends of three agricultural commodities, which have a significant market share in sustainable production volumes: tea, coffee and cocoa. As can be seen in *table 2.2,* palm oil has a significant market share as well; in 2012 15% of the global palm oil production was sustainable produced. However, this commodity will not be shown in this chapter, as the main certifier of palm oil, the Roundtable on Sustainable Palm Oil (RSPO), is not reviewed in this thesis (Potts et al., 2014: 90).

In addition, it must be mentioned that some farmers have double or triple certification. For producers it is attractive to become certified by different initiatives, as it may increase the access to markets. For companies and retailers it is also attractive to certify their product with more than one certification, as it may increase the consumer recognition. There are examples of tea farmers in Malawi that have triple certification from RA, Fairtrade and UTZ (Potts et al., 2010:88). Also in the coffee and cocoa sector farmers can have multiple certificates. Because of these multiple certifications, it is hard to calculate the exact number of sustainable production volumes and sales. To minimize the potential for double counting the production volumes and sales, multiple certifications were taken into account in the reports of Potts et al. (2010; 2014), which are the main source for this chapter.

2.1.1. Tea

Tea is primarily produced in Asia and Africa, with China, India, Sri Lanka, Kenya and Turkey accounting for 76% of the global tea production. Despite the majority of the tea production is consumed locally, 44% of the global production was used for export in 2011 (Potts et al., 2014: 90). Although, Asia is the largest producer of conventional tea, Africa is the largest producer of standard-compliant tea, with Kenya accounting for 40% in 2011 (Potts et al., 2014:297).

The most important sustainability initiatives in the tea sector are RA, Fairtrade (FLO), UTZ, Organic (IFOAM), GlobalGAP and the Ethical Tea Partnership (a member-based organization, initiated by leading tea packing companies, since 1998). Together these initiatives certified or verified 12% of the

global tea production in 2011/2012. However, only 4% of the global production was actually sold as sustainable produced tea in 2012. The rest was sold as conventional tea (Potts et al., 2014:297).

The largest share of standard-compliant tea is certified by RA. Driving forces behind this result are among others commitments with private companies. For example Unilever, the largest tea company, has a commitment with RA to certify all their Lipton and PG Tips tea bags by 2015. By 2020 it wants to certify all of its tea, including loose tea. RA has also commitments with other major tea companies such as Tetley and Twinings to certify their tea bags. Unilever, Tetley and Twinings also have organic tea lines, but without commitments. There are also commitments with other initiatives, for example between DE Master Blenders 1753 and UTZ (Potts et al., 2014:304).

Table 2.3. Standard-compliant and conventional key statistics for tea production and trade (2011/2012).

Key statistics	
Top 5 producers (76% of global)	China (35%), India (21%), Kenya (8%), Sri Lanka (7%), Turkey (5%)
Top 5 standard-compliant producers (81% of global)	Kenya (40%), India (18%), Malawi (9%), Indonesia (8%), China (6%)
Top 5 exporters (70% of global)	China (16%), India (16%), Sri Lanka (16%), Kenya (15%), Vietnam (7%)
Global Production	4.7 million metric tons
Global exports	2 million metric tons (44% of global production)
Standard-compliant production	577,000 metric tons (12% of global production)
Standard-compliant sales	174,000 metric tons (30% of compliant production, 4% of global production, 9% of exports)
Major international voluntary sustainability standards	RA, Fairtrade, UTZ, Organic, Ethical Tea Partnership and GlobalGAP

Source: Potts et al., 2014:304.

2.2.2. Coffee

Over 90% of the coffee is produced in developing countries. As a result, the majority of the coffee is produced by smallholders (70%)[2] (Potts et al., 2010:74). Coffee is produced in more than hundred countries, however five countries dominate the sustainable coffee production, namely: Brazil, Vietnam, Indonesia, Colombia and Ethiopia, accounting for 67% of the global coffee production. Besides the fact that Brazil is the largest coffee producer, it is as well the largest sustainable producer and the largest exporter of coffee (Potts et al., 2014: 159).

The first labeling schemes in the coffee sector were Fairtrade (Max Havelaar in 1988), RA and Organic (with both coffee standards since 1995). More recent initiatives that include coffee standards are UTZ and 4C. In addition, many private companies established sustainable standards, such as Starbuck's C.A.F.E. Practices and Nespresso AAA Quality Standards (Potts et al., 2014: 159).

[2] In the report of Potts et al. (2010:66), a smallholder is defined as a farmer that is farming on less than five ha.

The production of sustainable coffee of all initiatives have increased enormously over the last two decades. The largest share of sustainable production was in 2012 covered by 4C, followed by UTZ, C.A.F.E. Practices, Fairtrade and RA. In addition, 4C had the largest annual growth rate of 48% between 2008 and 2012 (Potts et al., 2014: 162). On one hand it is surprising that 4C has the largest share of sustainable production as it is a relatively new standard. However, on the other hand it is not surprising as 4C has minimum social and environmental standards, which are specifically focused on coffee production.

In total, sustainable production of coffee increased enormously up to 40% in 2012. Unfortunately, also for sustainable coffee the supply is higher than the demand; the market share of sustainable coffee in 2012 is just around 12%. As more sustainable coffee is produced than sold, it is expected that many farmers do not benefit of potential increased market access. In addition, it is expected that some farmers will not have possible premiums for certified coffee, as they sell it as conventional coffee (Potts et al., 2014:159).

Table 2.4. Standard-compliant and conventional key statistics for coffee production and trade (2012).

	Key statistics
Top 5 producers (67% of global)	Brazil (32%), Vietnam (18%), Indonesia (6%), Colombia (6%), Ethiopia (5%)
Top 5 standard-compliant producers (81% of global)	Brazil (40%), Colombia (17%), Vietnam (15%), Peru (6%), Honduras (3%)
Top 5 exporters (70% of global)	Brazil (24%), Vietnam (22%), Indonesia (9%), Colombia (6%), Honduras (5%)
Global Production	8.2 million metric tons
Global exports	6.8 million metric tons (83% of global production)
Standard-compliant production	3.3 million metric tons (40% of global production)
Standard-compliant sales	0.8 million metric tons (25% of compliant production, 10% of global production, 12% of exports)
Major international voluntary sustainability standards	4C Association, UTZ, Starbucks Coffee and Farmer Equity Practices (C.A.F.E. Practices), Fairtrade, RA, Organic, Nespresso AAA Sustainable Quality (AAA)

Source: Potts et al., 2014:159.

2.2.3. Cocoa

With more than 70%, the major producer of cocoa is Africa, with Côte d'Ivoire and Ghana accounting for almost 60% (Potts et al., 2014:134). The rest of the cocoa is produced in Latin America and Asia and a small amount in Oceania. As in many other tropical commodities, smallholders are dominant in this sector. In the report of Potts et al. (2010) it is stated that in Côte d'Ivoire only 5% of the farmers has five or more ha for cocoa production, in Ghana this is just 1%. This is in contrast with Brazil and Ecuador, where respectively 10% and 13% of the cocoa farms are above five ha.

Sustainable production in the cocoa sector has increased significant over the past years. The dominant players are UTZ, RA, Fairtrade and Organic. Organic and Fairtrade entered the cocoa

market already in 2000. RA and UTZ entered in respectively 2007 and 2009. Mainly because of RA and UTZ, sustainable production of cocoa increased between 2008 and 2012 from 3% to 22%. However, also for cocoa the supply of sustainable production is higher than the demand; only 7% of the total global production is sold as standard-compliant cocoa.

Table 2.5. Standard-compliant and conventional key statistics for cocoa production and trade (2011/2012).

	Key statistics
Top 5 producers (80% of global)	Côte d'Ivoire (36%), Ghana (22%), Indonesia (11%), Nigeria (6%), Brazil (5%)
Top 5 standard-compliant producers (89% of global)	Côte d'Ivoire (50%), Ghana (17%), Dominican Republic (15%), Peru (4%), Indonesia (4%)
Top 5 exporters (73% of global)	Côte d'Ivoire (37%), Indonesia (19%), Ghana (7%), Nigeria (5%), Cameroon (5%)
Global Production	4.1 million metric tons
Global exports	3.1 million metric tons (76% of global production)
Standard-compliant production	899,000 metric tons (22% of global production)
Standard-compliant sales	300,000 metric tons (33% of compliant production, 7% of global production, 10% of exports)
Major international voluntary sustainability standards	UTZ, RA, Fairtrade, Organic

Source: Potts et al., 2014:159.

2.3. Conclusion

This chapter showed that there are many voluntary sustainability initiatives. The sustainability initiatives have similar goals, however much diversification exists. It also showed that almost all initiatives reviewed use group certification as a tool to include more smallholders. Besides, an overview of the market trends is shown of different standard-compliant commodities. It shows that the production of sustainable produced commodities is increasing rapidly. Unfortunately, the supply for sustainable products is often lower than the demand. The next chapter will show some literature about the effects of these voluntary sustainability initiatives. In addition, it shows challenges that most sustainability initiatives reviewed are facing.

Chapter 3. Impact assessments of sustainability initiatives

As shown in the previous chapter, the number of sustainability initiatives and the market shares of sustainable production increased significantly over the past years. However, there is still little known about the actual effects of these initiatives. This chapter will present a review on impact studies of several sustainability initiatives. Firstly, the review on impact studies of Alvarez & Von Hagen (2011) will be presented. Secondly, several different reviews on impact studies will be compared with each other. Thirdly, this chapter also aims to provide a review on impact studies on specifically group certification. Unfortunately, no review on the impacts of group certification is available. Moreover, as only one impact study on specifically group certification was found, only one impact study will be presented. Lastly, to give insights on the debate of certification, important challenges and points of criticism of certification schemes are shown.

3.1. Review of impact studies

3.1.1. Literature review of impact studies of sustainability initiatives

Based on the literature review of Alvarez & Von Hagen (2011), this chapter presents an overview of the methodological aspects included in impact studies of voluntary sustainability initiatives. In addition, it provides an overview of the social and economic effects of sustainability initiatives as measured by the impact assessments included in the review. In this review and the included studies nothing is mentioned on specifically individual or group certification. Therefore, it is not known if this review covers effects on farmers that are certified individual and/or in a group.

Methodological aspects

In the review of Alvarez & Von Hagen (2011) 47 empirical papers were selected and reviewed. Most studies are written by academics or researchers commissioned by international organizations. The articles date from 1998 until 2010. The largest numbers of articles are published in 2008 and 2009, with another peak in 2005. This suggests that there is increasing attention for measuring effects of sustainability initiatives. All the studies included in the review are focused on developing countries. The majority of the studies deal with the effect on farmers in Latin America (28), followed by Africa (15) and lastly Asia (only 5). The remaining three reports cover multiple regions. Most of the studies are carried out in Costa Rica (7), Uganda (6) and Kenya (5). The majority of the studies are dealing with the agricultural and forestry sector. The top five products that are most representative in the studies are: coffee (19), forestry (10), herbs and spices (5), bananas (5) and vegetables (4). The standards that are covered in the studies are mainly Fairtrade (26), Organic (16) and FSC (8). Since most studies deal with Fairtrade, it is not surprising that coffee is the most represented product (Alvarez & Von Hagen, 2011:6-8).

The methods used in the studies differ a lot. The majority of the studies covered by the review are collected stories of the experiences of the farmers, so called exploratory/narrative research (17). Many other studies used survey-based methods (16). The remaining studies used in-depth qualitative analysis (10) and statistical analysis (4). It is seen that quantitative and qualitative methods are both used. However, according to the review, qualitative methods are somewhat more frequently used than quantitative methods. This thesis also uses qualitative methods, some quantitative aspects are

also included. The main source of data collection is semi-structured interviews. More information on the methodology of this research can be found in the next chapter.

Figure 7 in the report of Alvarez & Von Hagen (2011:9) gives an interesting overview of the topics covered in the 47 studies. Most studies concern economic aspects: major attention is given to producer profitability (38), with specifically price differential (35). This is not surprising, as most studies are focused on Fairtrade, which attempts to give a better price for agricultural products. Furthermore, it is noteworthy that only a few studies mention environmental effects. On one hand this is surprising, as shown in the previous chapter, environmental criteria are mostly covered in the sustainability initiatives. However, on the other hand this is not surprising, as most studies investigated Fairtrade initiatives. This thesis investigated the economic effects, plus the social effects of farmers. However, as research on group certification barely exists, this thesis investigated the economic and social effects of group certification.

The effects will be presented in order of the topics as shown in figure 7 in the report of Alvarez & Von Hagen (2011:9): producer profitability, business opportunities, livelihood and labour conditions and communities (environmental aspects will be excluded). Hereby the variety of geographies, commodities and certification schemes as explained above, must be taken into account.

To measure the effects, the selected studies have been divided in two groups. The first group includes studies with a counterfactual outcome (19). Counterfactual outcome is the difference between the actual outcome of the standard and the outcome that it would have without certification. This counterfactual outcome, or base of reference, is limited or not present in the second group (28). In the remainder of this paragraph a review of the effects on only the first group will be presented. The information from the studies of group two is used as additional information.

Effects on producer profitability

The effects of certification on the producer profitability are mainly positive. An overview of the outcomes of the studies of group one is shown in *table 3.1.* The majority of the studies that include economic aspects, found evidence of increased prices received by the farmers. Only a few studies found evidence of neutral or mixed effects on the price. There is no study included in the review that showed negative effects on the price. The studies showed more spread outcomes with respect to the yields. Eleven studies covered the effects on yields and labour productivity, of which five showed a positive effect, three a neutral or mixed effect and another three showed negative effects. Four studies covered effects on the quality of the product. Outcomes were equally divided with two studies showing positive effects and two studies showing neutral or mixed effects. Out of the nineteen studies of group one, fourteen studies covered effects on the net income of farmers. Eight studies show positive results for farmers that participated in a certification program. Four studies found evidence of mixed or no effects and only two studies found a decrease in the net income of farmers. Overall, the price premiums, the increased yields or the better quality exceed the increased costs involved in participating in a certification program. Therefore, farmers tend to be better off financially when participating in a certification program (Alvarez & Von Hagen, 2011:12-15).

Table 3.1. Overview producer profitability effects.

Effects	Cover	Positive	Neutral or mixed	Negative
Price effect	13	10	3	-
Yield (land, labour)	11	5	3	3
Quality	4	2	2	-
Net Income	14	8	4	2

Source: Alvarez & Von Hagen, 2011:12-15.

Effects on business opportunities

Table 3.2 presents an overview of the effects on business opportunities of the studies of group one. Thirteen studies covered one or more topics related to business opportunities. Nine studies show positive results for farmers that participate in a certification program. Positive effects were improved relationships with buyers, better management and farming skills, increased credit opportunities, technical assistance and improved market conditions. Four studies found evidence of mixed or no effects and none of the studies found evidence of negative effects. Mixed results were found in lower crop diversification, which might be a result of more land being dedicated to certified crops. Another mixed result was found in studies that questioned the impact of the certification compared to other national policies and concluded that certification resulted in just little improvements. However, overall the impacts on business opportunities for farmers were mainly positive (Alvarez & Von Hagen, 2011:16-17).

Table 3.2. Overview business opportunities effects.

Effects	Cover	Positive	Neutral or mixed	Negative
Business opportunities	13	9	4	-

Source: Alvarez & Von Hagen, 2011:16.

Effects on livelihood and labour conditions

Table 3.3 shows an overview of the effects on livelihoods and labour conditions of farmers participating in a certification program. Twelve studies of group one covered topics that are related to farmers' livelihoods. Nine studies show positive effects on the livelihoods. The main positive effects were found on the variety and the total amount of food consumption, health and education and an increased value of household assets. These positive effects were mainly a result of higher incomes. Three studies found evidence of mixed or no effects and none of the studies found evidence of negative impacts on livelihoods. Mixed results were found on gender aspects. Some studies found evidence that the participation of women in farmer activities and decision-making was lower at certified farms compared to the control group. In addition, it was found that participation in the household income was decreased. Overall, evidence on the effects on farmer's livelihoods was positive (Alvarez & Von Hagen, 2011:18-19).

Table 3.3. Overview livelihoods and labour conditions effects.

Effects	Cover	Positive	Neutral or mixed	Negative
Producers' livelihoods	12	9	3	-
Labour conditions	3	1	2	-

Source: Alvarez & Von Hagen, 2011:18-20.

Only three studies of group one deal with effects on labour conditions and wages, of which one positive and two neutral or mixed effects. The positive effect was shown through improved labour conditions. However, the criteria of the specific certification were in line with local regulations. As the farmers complied with these regulations after certification, it is seen as a positive effect. Mixed effects were found on wages of workers. One study showed lower wages, however, this study also showed more free time, higher income of other sources, higher job security and higher job satisfaction than the comparison group. Another study showed mixed effects on the removal of child laborers. Only for households above a subsistence level (defined as a minimum calorie intake per household member) the certification positively influenced the removal of child laborers. There was no significant influence below this level. A critique on the certification schemes is that most standards deal with permanent labour, while many farmers deal with seasonal hired labour. Overall, there is not much evidence on the effects of labour conditions and wages, but some positive and mixed effects are shown.

Effects on community

Besides effects on farmer level, some studies investigated the effects on local community level. Five studies of group one covered aspects related to the community. Three of these studies showed positive effects of Fairtrade labeling. This result is due to the fact that Fairtrade includes a criteria stating that a part of the premium of Fairtrade should be invested in a communal fund for workers and farmers to improve their sustainable conditions. One study showed mixed results, because the Fairtrade fund was not being invested in the community, but used for the workers' welfare. Negative results were shown in a research investigating the effects of FSC. Critics were that exclusively large-scale enterprises have the capacity to participate in a certification program, which results in the non-participation of small-scale enterprises. The second group includes many studies that deal with effects on community level. The majority of these studies show positive effects such as job generation and an increased role of cooperatives in the community (Alvarez & Von Hagen, 2011:21).

Table 3.4. Overview community effects.

Effects	Cover	Positive	Neutral or mixed	Negative
Community conditions	5	3	1	1

Source: Alvarez & Von Hagen, 2011:21.

3.1.2. Other literature reviews of impact studies

As presented above, the review of Alvarez & Von Hagen (2011) found more positive effects than mixed or negative effects for farmers participating in a certification program. However, empirical evidence for these impacts is still lacking. The report of Blackman & Rivera (2010) concluded that the

evidence for significant sustainable benefits of certification is limited. Out of the fourteen relevant studies that include a counterfactual, only six studies concluded that sustainable certifications have social, economic or environmental benefits. The report of Niggli et al. (2011) presented positive environmental and economic benefits for Organic agriculture. However the studies reviewed of Organic agriculture are focused on developed countries. The report also concludes that most studies found evidence of positive social and economic effects for Fairtrade farmers in developing countries. For other sustainable standards such as RA and UTZ, there is a lack of evidence to generalize effects (Niggli et al., 2011). The literature review of Chan & Pound (2009:36) concluded that the majority of the studies show some minor positive outcomes of sustainable certification. However, many studies also concluded that the magnitude of these benefits was not substantial and that a major number of studies found no significant effects on important areas such as income change of the farmers. Some studies found evidence of negative impacts of certification on the net income of farmers, i.e. the costs of certification equaled or exceeded the benefits. Overall, the outcomes of the reviews show that the majority of the studies found some positive effects. The reviews also show negative effects, however to a lesser extent. The reviews are dominated by studies that deal with Fairtrade and Organic, particularly for other certification schemes a lack of evidence exist on the effects of farmers. Not one of the studies specifically mentioned effects of group certification.

3.1.3. Impact studies on group certification

Only one impact study is found on specifically group certification. This study investigates FSC group certification in Vietnam (Auer, 2012). The subject of the study is the short- and long-term benefits and risks of group forest certification on smallholders. The land holdings of the farmers vary in size between 0.8 ha and 2 ha. The method used in the study was extensive interviews with participants of group certification, including farmers, buyers and staff of the sponsored aid project. In addition, secondary data was analyzed, including archival data on forest management records, reports of aid contractors, data from sawmills and purchasers. The study presents several effects for the individual farmers such as increased income from forestry, improvements in technical expertise, environmental benefits and constructive partnerships with actors of the forestry sector. Nevertheless, according to the report, there are still significant challenges to overcome, specifically over the long-term, like certification costs, membership fees and benefit sharing. According to the author, interventions such as enlargement of the memberships, increased membership fees, more equitable benefit-sharing practices and new income streams during off-harvest periods and/or continued donor support can make this system sustainable and very successful over the years (Auer, 2012).

3.2. Debate on sustainability initiatives

Major challenges and critiques exist concerning sustainability initiatives. In this paragraph firstly, the challenges that are investigated in this thesis will be presented. These challenges deal with the effects of certification and the non-participation of smallholders. These are followed by an overview of other important challenges[3].

[3] For this paragraph the report of the Steering Committee of 2012 has mainly been used.

3.2.1. Challenges covered in this thesis

Effects of certification

It is questioned in literature whether certification actually contributes to social, economic and environmental aspects. In case of comparable criteria of local or governmental regulations, the contribution of certification programs might be limited. Therefore, it is important that more research will be conducted on the effects of certification. However, then another challenge is faced, as there is still a debate on which methodology should be used to measure the effects of certification schemes. As shown in the previous paragraph there is a large diversity between the methods used in impact studies.

Non-participation of smallholders

As mentioned before in this thesis, it is argued that certification exclusively benefits large farm holders and hinder smallholders to join. Explanations for this can be that the certification process is often long and could be expensive. It might be expensive as farmers often need to change their agricultural practices; they need to buy or use other products, such as appropriate fertilizers. The price premiums that some farmers receive from certification are often not enough to cover the costs of certification. In addition, it is argued that some standards are quite technical and difficult to understand. Also, in some cases the standards are incompatible with the local farm practices. This can lead to exclusion and disempowerment of the smallholders and as a result create an "elite group" of certified farmers while putting non-certified farmers at an obvious disadvantage (Hajjar, 2012:231-236; Preißel & Reckling, 2010:1; González & Nigh, 2005:449).

Group certification is one of the initiatives to combat these challenges. According to an FSC report, there are three major benefits for farmers that become certified in a group. Firstly, there are shared and therefore lower costs for the individual farmers. The costs of group certification are estimated to be reduced ten times (AgroEco & Grolink, 2008:76). These costs include for example technical assistance and audits. Secondly, during meetings of the certification or visits of family or neighbors, farmers can share their knowledge gained from the certification. Besides sharing knowledge, farmers receive support in order to achieve certification and to keep the certificate. Thirdly, through the collective scale of production there is an opportunity to have better access to markets and to obtain a better price. By working as a group, the farmers might be able to empower themselves (FSC, 2009).

The majority of the sustainability initiatives, which are reviewed in this chapter, use the tool of group certification to include more small-scale farmers. This suggests that the problem of non-participation of smallholders is recognized. However, almost no research has been done about group certification. Therefore, it is important to investigate if small-scale farmers are included and if they actual benefit from group certification.

3.2.2. Other important challenges

Setting the standards

One of the shortcomings of setting standards is that it is assumed that compliance with the sustainable standards will lead to the intended results. This paragraph will show that the

implementation of the standards differs and that it is difficult to attribute effects to certain agricultural practices (Steering Committee, 2012:14).

To achieve the intended objectives, some standards, for example Bonsucro (certification system for sugar cane), shifted their focus from process to desired outcomes (or performance-based outcomes). This creates more flexibility for the initiatives to reach the outcomes. This means that an initiative determines a level of the outcome, but it does not include how a farmer has to achieve this level. The downside of this outcome approach is the increasing costs that it entails in measuring the outcomes. Another downside is that other factors may influence the outcome. For example, a farmer may improve his water management in order to increase the quality of the water, however, it is possible that the water does not reach the quality level intended due to other factors, such as a factory that may have polluted the water. As a result, the farmer does not become certified or loses his certification. To deal with these issues, it might be better if initiatives use a combination of process and outcome oriented criteria (Steering Committee, 2012:14).

It is a challenge to determine what model of standards is most effective to achieve intended objectives. It is not only a trade-off between process and outcome oriented criteria, also the level of the criteria is important. Criteria can be set at low, medium or high level. In the case of 4C, low level criteria are included. Initiatives with higher levels for criteria are among others RA, FSC and FLO. The level of the criteria will influence the ease and the costs of getting certified and also the effects. Moreover, it is also a trade-off between the actors who set the standards, is it more effective if the developing countries set the standards by themselves or if developed countries set the standards? Unfortunately, there has almost been no research conducted to determine what approach is most effective for sustainable development and what is needed to encourage farmers to continue to improve their agricultural practices over time (Steering Committee, 2012:14).

Assuring compliance

As mentioned in the previous chapter, there are different types of methods to check if criteria are met by the farmers. However, these different types bring also different costs. In general, most independent certifications have often the highest costs. A tool that is used to deal with this issue is risk-based modeling. This tool identifies, at different stages of the certification, potential risks of non-compliance. It is also investigated where those risks most likely occur. By emphasizing on the potential risks, the internal and external audits can be done more efficiently, which will reduce the costs of the audits. Another method used to check compliance with the criteria is to gain greater benefits from the audits. Instead of only checking for compliance, the auditor could advice the farmer in better agricultural practices. The audit would become a learning process for the farmer. There is a downside, as there might be a conflict of interest of an auditor as being both an advisor and an assessor (Steering Committee, 2012:15).

Auditor competences

The auditing processes are highly subjective; therefore auditor competences are one of the most significant challenges for the credibility of sustainability initiatives. To make sure that the farmers and the auditors interpret the criteria correctly, most initiatives provide guidelines of the criteria. The majority of the initiatives deal with global standards. Since there is a high variety in the contexts of the audit assessments, it is important for an auditor to understand local laws and cultural and

ecological context. In this way, the auditor can interpret the criteria for each specific situation (Steering Committee, 2012:15).

According to ISEAL Alliance, the selection of the auditors is not only based on knowledge and experience, but also on personal characteristics. Besides the flexibility of an auditor to adapt to different situations, an auditor must let the farmer feel comfortable in his presence and for some initiatives an auditor needs to be able to teach the farmers about better agricultural practices. It is therefore a challenge for initiatives to select auditors with the "full package". Especially in developing countries or in regions where the amount of work for an auditor is limited, it is difficult to find qualified auditors. A final challenge is to have an impartial auditor with no or low fraud risks (Steering Committee, 2012:16).

Sales and consumer awareness

The demand for certified products is mainly based in parts of Europe and North America. The challenge is to increase the demand in these and other continents. This is especially a challenge for developing countries. Another challenge with respect to markets and consumers is that most consumers are not aware of the different certificates and what these labels stand for. In addition, there is a misunderstanding of the labels by consumers. The majority of the consumers assume that certified products have full compliance with the criteria. However, often a farmer is not required to meet 100% of the criteria. For example, a certificate might require 90% of all the criteria or for some initiatives a farmer needs to have a plan for continuous improvements of his agricultural practices. This creates a low entry level with improvements over time (Steering Committee, 2012:15). However, it is wondered if it is actually a problem if the consumers do not exactly know what the different labels mean. It is more important that consumers can trust that all the products they buy are produced in a sustainable manner.

Governance structure

Also the governance structure faces challenges. One of the challenges is the engagement of different stakeholders. On one hand, the inclusiveness of different stakeholders may increase the legitimacy of the initiatives. On the other hand, this may lead to bureaucratic systems and slow responds towards changing markets or innovations. These limitations mainly occur when stakeholders put their own interests first in the decision making process (Steering Committee, 2012:17).

North and South conflict

In the previous chapter, a part of the North-South conflict was presented, including an overview of the North-South division of the board of directors of the reviewed initiatives. In addition, there are challenges to access the market. As mentioned before, the demand for certified products is often limited to Europe and North America (the North). However, for developing countries (the South), this market is difficult to access. The question then arises: why should the South produce in a sustainable manner, as the North wants them to do, while the South cannot enter their international markets?

Actors of the value chain

There is a debate about the equal benefits of certification among different stakeholders, such as between the industries and the producers. Some argue that the industry benefits more, in financial

terms, than the farmers do. The industry can ask a higher price of the consumers, while creating a better image of the company and a better competitive position on the market. Whereas the farmers face higher costs as a result of complying with the standards. Often, the farmers do not receive enough premium on the price to compensate the costs.

Financial framework

For most initiatives, financing is one of the most important challenges. Many initiatives are dependent on funds of different stakeholders. Therefore, initiatives need good business models to attract potential financial investors. Other income sources are membership fees and services, such as accreditation, certification, licensing etc. A number of initiatives adjust membership fees. However, it is a challenge to adjust the fee levels. One of the reasons is that the fees may not discourage farmers to become certified (Steering Committee, 2012:17).

3.3. Conclusion

The number of sustainability initiatives increased enormously over the last two decades. The tool of group certification, to include more smallholders, is widely used among these initiatives. However, studies on group certification are barely available. This thesis wants to fill in this gap and therefore investigates if group certification contributes to the participation of small-scale farmers and what the actual effects are of group certification. How to measure these effects is still a major discussion. As shown in this chapter, there is a large diversity between the methods used to measure the effects of (individual) certification. The next chapter will deal with this discussion more in depth and will explain what method is used in this thesis.

Part B. Evaluation framework and methodology

Chapter 4. Evaluation framework

This chapter describes the evaluation framework that is used in this study. In the first part of this chapter the theoretical background of this study will be explained. It mentions different approaches regarding evaluation of programs and policies. One of these theoretical approaches is used as a perspective to look at change. The second part of this chapter presents the methods that are used in this thesis to evaluate group certification based on the presented evaluation approach.

4.1. Evaluation approaches

According to Hospes (2008), basically three types of evaluation approaches can be distinguished: evidence based, realistic and complexity evaluation. These approaches all refer to different theories of change.

The first approach, evidence based evaluation, is the simplest approach, it assumes that changes can be directly attributed to specific interventions. This means that there is a linear relationship between cause and effect:

input → output → outcome → impact

Evidence based evaluation measures change by seeking evidence (Hospes, 2008:24). This approach is mainly evaluation by testing; a typical method is research with large respondent groups, such as surveys. In case of evaluating the effects of certification, one of the methods that could be used is seeking evidence by comparing a group of certified farmers with a group of non-certified farmers.

The second approach, realistic evaluation, is somewhat more complex than the evidence based approach. Realistic evaluation wants to identify the underlying causal mechanisms, and how they work under different conditions. Causal mechanisms are always embedded in a particular context, therefore interventions might have different outcomes in different situations. Pawson & Tilley (1997) explain realistic evaluation by linking input, output, outcome and impact with black boxes:

input → ■ → output → ■ → outcome → ■ → impact

The approach assumes that changes cannot be directly attributed to specific programs, on the contrary changes happen in or because of the black boxes. Pawson & Tilley sum this up as:

context + mechanism = outcome

According to Pawson & Tilley, (certification) programs work, (or have successful 'outcomes'), only if they introduce the appropriate 'mechanisms' in the appropriate 'context' (Pawson & Tilley, 1997:57).

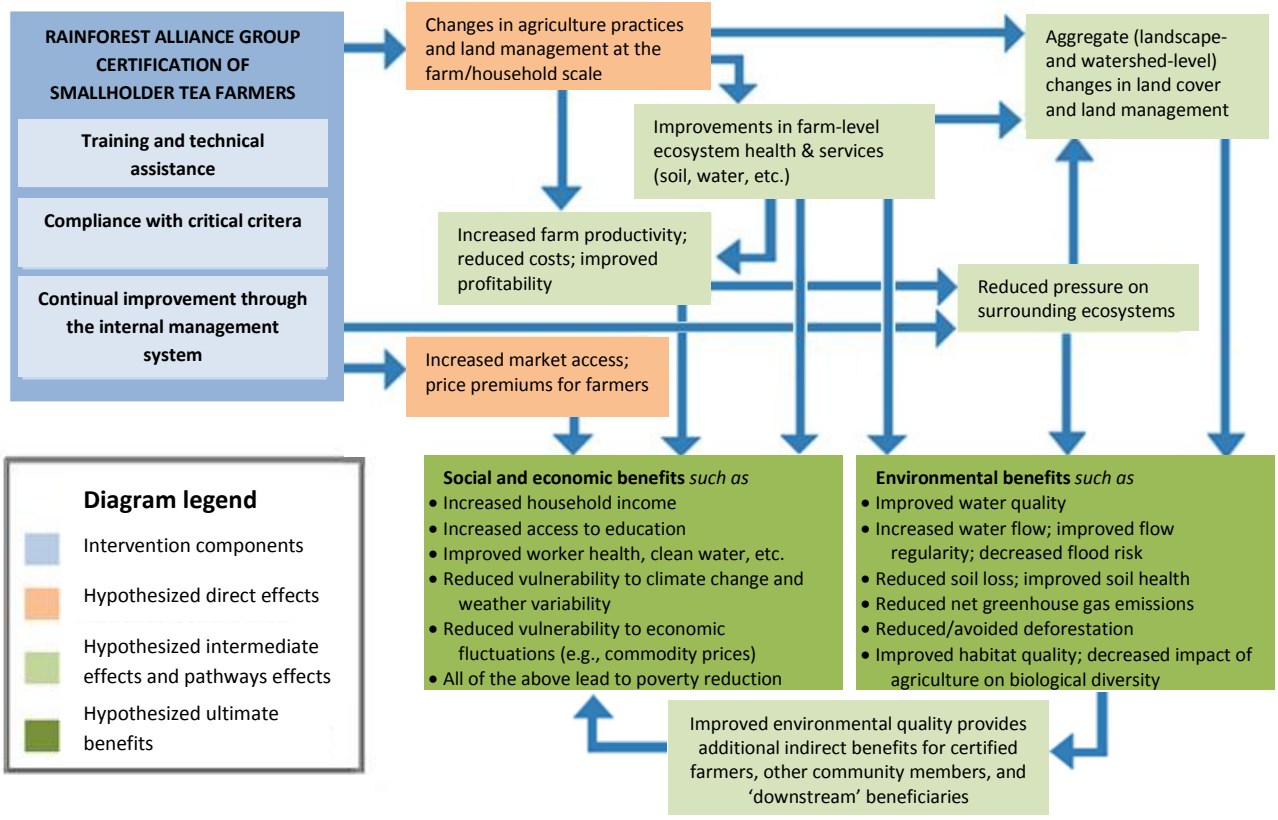
As a reaction to realistic evaluation, complexity evaluation arose. Complexity evaluation is far more complex than the previous two approaches. This approach assumes that it cannot be precisely determined to what extent changes can be attributed to interventions. Changes may have multiple causal paths, at multiple levels, on different locations and in different contexts. A classic example is the butterfly effect: flapping of a butterfly's wings in Asia may cause a large storm in Western Europe. This term, butterfly effect, is used to describe how small changes to a seemingly unrelated thing can affect large, complex systems. In this approach one does not measure effects nor investigates causal mechanisms, it explores the complexity of the situation (Hospes, 2008:26).

These approaches can be considered as philosophies on evaluation. The design of the research in this study is based on the first approach; therefore it was assumed that effects could be directly attributed to group certification. However, during the fieldwork it became clear that context also played an important role in the process of group certification. Therefore, also a part of the context is investigated in this study. Therefore, the design of this thesis is mainly based on the first approach and for a small part on the second approach.

4.2. Theory of change

The theory of change is used in this thesis as a tool that explains the expected story in advance of the changes happening because of group certification. It can be a good basis for evidencing effects and showing causal relationships. The theory of change used in this thesis was created by Milder (2012). Milder shows a detailed theory of change, which is inspired by an evidence based approach (see *figure 4.1)*. Therefore, it uses linear connections and it does not include the context of farmers[4].

Figure 4.1. Rainforest Alliance smallholders theory of change.



Source: Milder, 2012.

Figure 4.1 explains the theory of change for RA group certification of small-scale tea farmers. The figure shows the interventions of group certification, the expected direct and intermediate effects and ultimate social, economic and environmental benefits. Considering the theory of change, it is expected that certification of farms will lead to improvements of the social and economic wealth of smallholders.This thesis measured if these expected effects corresponded to the real situation.

[4] The length of the arrows have no particular meaning.

As *figure 4.1* is a theory, it suggests that there are only benefits to group certification, however this might not be the case. Therefore, this thesis also takes some possible losses, such as increasing costs into account.

4.3. Input-output-outcome-impact framework

As shown in the previous chapter many impact studies of voluntary sustainability initiatives have been conducted. The term 'impact' is frequently used in literature. However, according to a literature review of the effects of Fairtrade initiatives, only a few of the studies systematically investigated impacts, while others focused on outputs and sometimes outcomes (Nelson & Pound, 2008:3). As impacts are further along the impact chain (input – output – outcome – impact), it is more difficult to find them. In addition, impact has a greater influence of the context and as a result attributing impact to a specific intervention becomes more challenging. Outputs, at the beginning of the impact chain, are often more visible and occur almost immediately after the intervention (Nelson & Pound, 2008). In order to make correct distinctions, this thesis used the general term 'effects', which consists of inputs, outputs, outcomes and impacts. The definition of the terms might differ per study; the terms can be differentiated between for instance short- and long-term effects and direct and indirect effects. This thesis defined the terms as follows:

- Input: direct investments made in the project, such as human resources (training and technical assistance of the farmers etc.) and money.
- Output: direct results of complying with the criteria of the certification.
- Outcome: effects of the input and output at individual farm level, such as behavioral change and income change of the individual farmers.
- Impact: effects of input, output and outcome at community or regional level, such as poverty alleviation.

This thesis described mainly outputs and outcomes, as the research was performed at individual farm level. Impacts of certification are at a higher level like community or regional level and are therefore more difficult to measure. There is a thin line between outputs and outcomes, therefore some effects might have overlapped different stages of the impact chain.

4.4. Methodology

4.4.1. Method of data collection

Although this thesis was mainly inspired by an evidence based approach, the traditional survey was not used in this thesis, as it is expected that a survey requires a lot of time, paperwork and a large workforce. Therefore, this thesis used a method with mainly qualitative and some quantitative dimensions.

The data collection used in this thesis was a combination of interviews, observations and secondary sources. Semi-structured interviews with farmers were the main source of information. Although the interviews with the farmers were mainly qualitative, also quantitative dimensions were included. The questions, which can be found in *appendix B*, were asked very systematically, so that the answers of the farmers could be compared with each other. Besides the farmers, interviews were held with other key informants, such as the current and former group administrator and technicians of the tea factory (a total overview of the interviews can be found in *appendix C*). Observations were done

during the fieldwork at the farms. Secondary sources used in the thesis were official audit reports and other secondary data, such as scientific literature.

The theory of change displays expected effects over different periods of time. Based on this theory and an evidence based approach, this thesis sought evidence over time by using a pipeline approach. The pipeline approach is an evaluation design in which different generations of the certified farmers and farmers that are not yet certified, but are scheduled to do so, are being interviewed and compared with each other. Effects of certification can be determined by the comparison of the social and economic status of the different generations. It was assumed that the social and economic status of all generations was equal at the beginning of the certification process, a so called equal baseline. In addition, a recall was added in the interviews, this means that information was gathered about the current situation and the situation prior to certification. With the recall it was investigated what the differences were in the situation before and after the certification and if these changes showed a causal relationship with group certification. The combination of the pipeline-approach and the recall generated a double-check in this research.

A total of 25 currently and prospectively certified farmers were visited at their farms and interviewed about their perceptions on the effects of group certification. It was expected to interview more farmers, however, because of a lack of time and some other reasons, only 25 farmers were interviewed to measure the effects of certification. In addition, two more farmers that withdrew from the certification process or lost their certification were contacted by telephone to ask about their motives of not being certified anymore. Reaching more farmers who had stopped with the certification, was not possible. During the interviews with the farmers, a part of the questions was repeated; this is a so called member check. This was done to be sure that the farmers gave the right answers. A member check was performed on questions that were possibly misunderstood by the farmers and also on answers that were possibly misunderstood by the interviewers. In addition, during the interviews the farmers were asked if possible changes could be attributed to the certification, to establish causality with the possible effects. To create reliability in the research, questions of the interviews were formulated neutrally. Economic and social indicators were determined from the farmers' perspective. These indicators were used to formulate questions. *Appendix B* gives an overview of the questions that the farmers were asked. Because of the number of questions, the member checks and the translation, the interviews took, as expected, a long time. Depending on the farmer and often also his wife and their willingness to talk, each interview lasted between thirty minutes and three hours.

4.4.2. Method of selection

The investigated region in this thesis is the province of Misiones in Argentina, which is surrounded by Brazil and Paraguay. The province is shown in *figure 4.2.* Almost all of its borders are made by rivers: the Iguaçu in the north, the Rio Parana in the west, the Uruguay Pepirí Guazú and the Chimiray in the east and in the south. The province is characterized by a humid subtropical climate. The total annual rainfall is about 1,700 mm, the average temperature in Misiones is 20°C. Most of the surface area, around 70%, has steep slopes and is not suitable for agriculture (Misiones, 2013). The area has the most important forest region of Argentina; some people call the region the Amazonia of Argentina (Galuchi, personal communication 2013). The economy of the region is relatively underdeveloped. Agriculture, forestry and tourism are important sources of income. The main agricultural production

in the region is yerba mate (similar to herbal tea), tea, citrus fruit and tobacco. The tea production mainly takes place in the areas in the southern half of the province around the towns Oberá, Aristóbulo del Valle, Campo Viera, Campo Grande, Dos de Mayo, San Vicente, Leandro N. Alem and Jardin America (Galuchi, personal communication 2013).

Figure 4.2. Map of Argentina with the focus on Misiones region, Aristóbulo del Valle and Campo Grande.

Source: Iguazu Argentina, 2013.

Different certification groups in this region were interesting to investigate. To reduce the selection bias, the focus was on one group. The group that has been investigated was the first certified group in Argentina. Therefore, effects could be measured over a longer period. Also, because this group included the largest number of smallholders in the certification, making it interesting to examine. The investigated group is mainly located in the region of Aristóbulo del Valle and Campo Grande, as can be seen in the green circle in *figure 4.2*. For confidential reasons the name of the group will not be mentioned.

As written in the previous paragraph a pipeline approach plus a recall were used to measure effects of certification over time. This means that farmers that were certified over different years and farmers that will become certified in the next year will be compared with each other. The first year of certification of tea farmers in the Misiones was in 2008. Since all farmers were selected for group

certification it was assumed that there was no selectivity bias. This approach also assumed that there was no change over the years in the selection criteria to include farmers in the group.

In collaboration with the tea factory, the relatively small-scale farmers from different generations were selected. These were in general farmers owning farms with less than a total of 35 ha and that did not have permanent labour, but mainly used family labour (with some exceptions). Another selection criterion was to balance the number of farmers that were interviewed between different generations. Since there were many farmers certified in 2008 and 2009, it was important to interview first the farmers of other years and the ones that wanted to become certified in 2013 or 2014. Also, the weather was an important factor for selecting the farmers. As it was dry the first week of fieldwork, firstly the farmers that lived furthest away were approached for interviewing. When it would start to rain, the roads would become inaccessible and it would be impossible to reach these farmers.

For two weeks, farms were visited by the researcher, the translator and two drivers, who were technicians of the factory. The visits were unannounced to the farmers. A positive side from this was that a real situation at the farms was observed. A downside was that sometimes farmers were not at home. However, since it was not harvest season, most farmers were near their house at the farm and had time to speak. In addition, the weather was dry, so also the farmers more far away could be reached.

All available and relatively small-scale farmers of 2010, 2012 and the prospectively certified farmers of 2013/2014, that fitted in the selection criteria, were interviewed. Unfortunately, no farmers were certified in 2011; therefore no farmers of this year could be interviewed. For 2008 and 2009 there were more farmers available that met the selection criteria, in order to have an equal amount of interviews per year, only six and five farmers of respectively 2008 and 2009 were interviewed. The farmers chosen for these years were in the “neighborhood” or on the way to other farmers. In total the following numbers of farmers were interviewed:

1. Six farmers that became certified in 2008.
2. Five farmers that became certified in 2009.
3. Six farmers that became certified in 2010.
4. No farmers in 2011.
5. Four farmers that became certified in 2012.
6. Four farmers that are expected to become certified in 2013 and/or 2014.

The data collected from the pipeline approach measured effects over a timeframe of five years and possibly shows a pattern or a trend.

4.5. Limitations

The study faced several limitations, the main limitations are explained in this paragraph.

4.5.1. Language

The interviews were conducted in Spanish. Since the researcher’s fluency in Spanish was limited, a translator was used.

The translator was the daughter of the former group administrator. As this woman came from another town, she was unknown by the farmers. Before the interviews it was never mentioned that she was the daughter of the previous group administrator, because this could influence the answers.

The translator was instructed before the interviews about the purpose of the research, the introduction to the farmers, the questions and the importance of asking these questions in a neutral way. It was important for the researcher that the translator understood the situation of the farmer. Therefore, she also had the opportunity to ask questions (in a neutral way) for her own understanding. The researcher was aware of the fact that if the translator did not understand the farmer, it was hard for her to explain the researcher the translation. However, the translator was very interested in the topic which helped to gain as much information as possible.

The relationship between the translator and the researcher was very good; this reflected itself in a good cooperation without cultural or linguistic problems. One limitation of translating was that there were unconsciously two interpretations of the answers instead of one (in case of no translator). The translator had her own interpretation of the farmers and the researcher had her own interpretation of the translator. Since the researcher understood some Spanish, she could check if the translator asked the questions in the right way and if the answers were correctly and fully translated. Besides, it was even an advantage of having a translator, as the researcher had more time between the questions to think about the answers and about additional questions. The researcher could check if the answers of the farmers were in line with previous answers that were given. By any doubt, questions were repeated in a more simple way. This increased the reliability of the story of the farmers.

4.5.2. Other limitations

The presence of the translator, the technician and the researcher herself could have influenced the answers given by the farmers. The translator and the researcher were not known by them, but the technicians were known. It was observed that the relationship between the farmers and the technicians was good, as the technicians visited and helped the farmers to get and to stay certified. Also, as the farmers and their wives were observed to be very open about their farm and the certification, it is expected that the presence of the translator, technicians and the researcher had no noticeable influence on the answers.

Unfortunately, there was a lack of time during the fieldwork. In this case study it was only possible to investigate the group for just two weeks. However, the translator was fulltime available and the factory provided two drivers and a car, which made it possible to visit many farmers. Since the drivers were technicians of the factory and highly involved in the certification process, they were asked many questions when driving from one farmer to another farmer, which made it possible to gain more information.

These were the main limitations of the study, other limitations or problems that were discovered during the fieldwork are explained throughout the thesis.

4.6. Conclusion

This chapter explained the evaluation framework that was used to evaluate group certification. The basis of the evaluation framework was an evidence based approach, which was complemented with a pipeline method to measure the social and economic effects of group certification. A pipeline approach is in line with an evidence based evaluation, as it seeks evidence by comparing different generations of farmers. Methods such as interviews, field observations and secondary sources were used to find this evidence. These methods are used in the next chapters, where the actual case study is presented.

Part C. Empirical research

Chapter 5. Certification policy and standards of Rainforest Alliance

This chapter is focused on the case study of this thesis. It shows what the certification entails and serves as a basis for the next chapter which is on effects of certification. In this chapter information is presented about the policy and the standards of RA group certification. First, it shows the standards for farmers and for the group administrator. Then, the policy and the process of certification are shown, including the scoring system and the process for audits. This information about the policy, the process and the standards are important for understanding the certification and therefore the situation of the farmers.

5.1. Sustainable agricultural certification

As mentioned in *chapter 2*, RA is a NGO with the aim to conserve biodiversity and to ensure sustainable livelihoods by changing land-use practices, business practices and consumer behavior. RA does this by offering different programs, such as sustainable agricultural certification. This program certifies farmers that produce tropical crops, such as tea, coffee, cocoa, banana etc. To obtain certification, farmers must meet a list of environmental and social criteria, set by the SAN. The SAN is a group of conservation organizations in nine different countries of Latin America, including RA and Imaflora. RA is the secretariat of the SAN. The SAN promotes and increases the use of sustainable agricultural practices and manages the certification program.

Two lists of standards for agricultural certification can be distinguished: sustainable agricultural standards and group certification standards. The criteria of the sustainable agricultural standards are required for individual farmers as well for farmers that are certified in a group. The group certification standards are additional criteria only required for the group administrator. The standards are explained in the next two paragraphs.

5.1.1. Sustainable Agricultural Standards

The Sustainable Agricultural Standards (version 2010) are represented by ten guiding principles. The principles cover 99 criteria. The goal of these principles is to transform environmental and social conditions of agriculture. The principles are mainly focused on worker welfare, farm management and environmental protection. It is interesting to mention that no principle or criteria specifically deals with economic aspects, such as a minimum price for agricultural products. However, as can be seen in the theory of change, presented in the previous chapter, and as stated on the website of RA, the standards are considered to help reducing poverty; the standards seek to improve the economic situation of farmers through higher yields and enhanced cost efficiency.

Of the 99 criteria, only 15 criteria are critical. A farmer must comply with all critical criteria in order to get certified. *Table 5.1* presents a summary of the principles and the critical criteria. A total overview of all the criteria of the Sustainable Agricultural Standards is shown in *appendix D* (SAN, 2010).

Table. 5.1. Ten principles of the Sustainable Agricultural Standards.

#	Principle	Summary of the principle	Critical Criteria
1	Social and environmental management systems	Farmers need to have social and environmental management plans. These are necessary so the auditors can confirm that farmers comply with the standards of the SAN and the laws of the respective countries. This management plan does not only improve the conditions for workers and the environment, but also improves the organization of a farm, which results in more efficient farms (SAN, 2010).	The farm must have a system to avoid mixing of products from certified farms with those from non-certified products in its facilities.
2	Ecosystem conservation	Farmers should improve conservation and recuperation of ecosystems on and near the farm. They need to protect waterways and wetlands from erosion and pollution, stop deforestation, maintain vegetation barriers and prevent harmful effects on nature reserves outside farmlands.	A farm must have an ecosystem conservation plan to protect and restore the integrity of natural ecosystems. The farm must not destroy any natural ecosystem.
3	Wildlife protection	The farmer has to take measures to protect their species and their habitats. Particularly for endangered species and habitats, farmers should take specific steps to protect the wildlife. This includes educating workers, prohibiting hunting and the removal of plants and animals from their lands, protecting nesting places, and either releasing captive wildlife or registering animals with the proper authorities.	It is forbidden to hunt, gather, extract or traffic wild animals.
4	Water conservation	Farmers need to conserve water by keeping track of water sources and consumption. Farmers may need to adapt to their farm practices and/or machinery, to reduce water consumption or to avoid pollution of springs and rivers on and near their farms.	The farm must not discharge or deposit industrial or domestic wastewater or other organic and inorganic solids into natural water bodies.
5	Fair treatment and good working conditions for workers	Farmers must ensure good working conditions for all workers, as defined by the UN and the ILO. The salaries and benefits of the workers needs to be equal or more than the legal minimum, the workers may not exceed a legal maximum of working hours. Child labour and any form of discrimination is prohibited. Workers should be aware of their rights and of farm policies. If housing is provided by the farmer, it must be in good condition, with drinkable water, sanitary facilities and it needs a system for domestic waste collection. Workers and their families should have access to healthcare and education.	A farm has non-discriminatory hiring policies, workers are paid at least the minimum wage, child and forced labour are prohibited.
6	Occupational health and safety	This principle attempts to increase the health and safety of the workers. Certified farmers must have an occupational health and safety plan to reduce the risk of accidents on the farm. Besides identifying and mitigating potential (health) risks for their workers, the report includes a plan to be prepared for incidents. Workers receive training to work more safely, especially regarding the use of agrochemicals. Farmers provide the necessary protective equipment to their workers and guarantee that the infrastructure, machinery and other equipment on the farm is in good condition and causes no danger to human health.	All workers that come into contact with agrochemicals must use personal protection equipment.
7	Good community relations	Farmers need to be good neighbors and inform surrounding communities, neighbors and local interest groups about their activities and plans. They should talk with interested parties about the potential effects of their farm activities and contribute to local development through employment, training and public works.	The farm must implement policies on farm activities that can have an effect on one's health, employment or local natural resources.
8	Integrated crop management	Farm managers must monitor pests and use biological or mechanical alternatives for pesticides where possible, if they determine that agrochemicals are necessary to protect the crop, they are obligated to choose the safest products available and use every possible safeguard to protect human health and the environment. Farmers need to register and reduce the amount of agrochemicals used. Farmers may not use products that are prohibited in their country, by different entities or national and international agreements. Transgenic organisms are also prohibited.	Only permitted agrochemicals can be used on certified farms. Genetically modified organisms are prohibited.

9	Soil management and conservation	This principle attempts to improve the soil. Farmers need to take steps to prevent erosion. Farmers need to have a fertilization plan, based on crop requirements and soil characteristics. Vegetative ground cover and mechanical weeding are used to reduce agrochemical use whenever possible. Certified farmers only establish new production areas on land that is suitable for agriculture, but never by cutting natural forests.	New agricultural production must be located on land with the conditions that are suitable for the intensity level of the agricultural production planned.
10	Integrated Waste Management	Certified farms are clean and orderly. They have plans for managing waste through recycling, reducing consumption and re-use. Waste is segregated, treated and disposed of in ways that minimize environmental and health effects. Workers are educated in managing waste on the farms and in their communities.	-

Source: SAN, 2010; SAN, 2013a.

A scoring system of the sustainable agricultural standards is used to determine which farmers obtain or maintain the certificate: all farmers must comply with at least 50% of the criteria of each principle and at least 80% of the total criteria of the Sustainable Agriculture Standards. In addition, the farmers must completely comply with the critical criteria. If the individual farmer does not comply with this scoring system, it will not get certified (SAN, 2010). The scoring system for farmers that are certified in a group is somewhat different from an individual farmer, this will be explained in *paragraph 5.2.*

5.1.2. Group Certification Standards

In the 1990's, the Sustainable Agricultural Standards of the SAN were more focused on estates and large-scale farms. However, since a few years the SAN is trying to include smallholders by certifying farmers in an organized group. Group certification can be organized by different stakeholders, for example by farmer cooperatives, by traders (to guarantee their supply), by independent farmers or, in case of the tea farmers in Argentina, by the buyers, namely the tea factories. RA group certification implies that all the farmers of the group have to comply with the same standards as the farmers that are certified individually. However, the scoring system and the audits are somewhat different than for individual farmers, which will be explained in the next chapter. In addition, they have a manager (group administrator) that leads the certification process and ensures that the group members meet the requirements of the certification. As the group administrator has the main responsibility of the group, it organizes meetings or workshops for the farmers to learn more about the certification and the standards. In some cases the group administrator is a person from the factory where the farmers supply their products, or a person from a farmer cooperation; it depends on who is organizing the group. There are additional criteria for the group administrator: the Group Certification Standards. These standards were established in 2004 with three principles and 23 criteria. The objective of the Group Certification Standards is to encourage the group administrator to establish and to maintain a management system that assures that all certified farmers comply with the SAN Sustainable Agricultural Standards (SAN, 2011:6).

In the previous version of group certification policy documents of the SAN, version 2004, an important rule of group certification was that each member of the group was required to have compliance with the scoring system of the SAN. If one farmer of the group did not comply with the scoring system, the certification was not granted or cancelled. This rule of 'one farm fails, the whole group fails', is for the long term not convenient for group administrators. To keep managing big groups of smallholders, this rule has been adapted (SAN, 2011:5). In 2011 a new document has been developed with revised principles, standards, scoring systems and definitions. The principles and the

standards remain focused on the group manager. *Table 5.2* presents the three revised principles of the group certification and its critical criteria. A total overview of all the criteria of the Group Certification Standards is shown in *appendix E* (SAN, 2011).

Table. 5.2. Three principles of the Group Certification Standards.

#	Principle	Summary of the principle	Critical Criteria
1.	Training and Capacity Building	The group administrator needs to train its group members (the farmers) and its internal management system personnel on SAN standards and policy contents. The trainings are adapted to local language, education and culture of the participants.	-
2.	Risk Assessment	The group administrator evaluates the risks of the management system of the group, such as the compliance with the SAN standards and policies, group membership, chain of custody and the costs of the system. This forms the basis of corrective and preventive actions, with the emphasis on traceability of certified products.	To minimize risks, the group must have a system to avoid the mixing of certified products with non-certified products.
3.	Internal Management System (IMS)	The group administrator must implement an effective internal management system. This system should have competent personnel and sufficient finances assuring compliance with the standards. Compliance is assured through trained personnel, governance procedures, group members that commit to the group's rules and a sanction system for non-compliant group members. The group administrator must keep accurate group member records.	Each group member must sign an agreement with the group administrator. The group administrator must internally inspect all farms and must keep accurate group member records.

Source: SAN, 2011.

The criteria of these principles are more concise than the previous document; instead of 23 there are 16 criteria, of which 5 are critical criteria. The rule of 'one farm fails, the whole group fails' is made more flexible: with a group consisting of seventeen or more members, a maximum of 20% of the farms may score less than 80%, but equal or higher than 70% of the Sustainable Agricultural Standards. However, they must all comply with the critical criteria. In addition, a compliance with at least 50% of the criteria of each principle of the Sustainable Agricultural Standards is essential. Groups consisting of sixteen or less group members, must comply with the general scoring system, i.e. the flexible rules above are not applicable to these smaller groups. The group administrator must also completely comply with the critical criteria and with at least 50% of the criteria of each principle. For all the criteria, the group administrator must comply with at least 80% of the criteria in the first certification audit (year 1). If the number of member farms has not increased by more than 10%, compared to the previous audit, the group administrator must comply with at least 85% of the criteria in the second certification audit (year 2). Again, if the number of member farms has not increased by more than 10%, compared to the previous audit, the group administrator must comply with at least 90% of the criteria in the third audit (year 3). If the group increases with more than 10%, it starts again with the first certification audit, where all the 99 criteria for the farmers have to be checked again (SAN, 2011).

5.2. Scoring system

As mentioned before, there are two types of criteria: critical and non-critical. In the policy of the SAN it is stated that all farmers and all group administrators need to have full compliance with the critical criteria. If a farmer or a group administrator has one non-conformity of a critical criterion, it has sixty

days to meet the specific criterion in order to get certified. If it has more than one non-conformities of the critical criteria, this exception does not apply and the certification is cancelled. For the non-critical criteria full compliance is not required as explained in the previous two paragraphs.

5.2.1. Score per criteria

To evaluate the compliance of the criteria of the farmers (Sustainable Agricultural Standards) and the group administrator (Group Certification Standards), the auditor has three types of scores to select per criteria: conformity, minor non-conformity or major non-conformity. Compliance means that the farmer complies 100% with the requirements of the criteria. Minor non-conformity means that the farmer complies between 50 and 99% and major non-conformity means that the farmer complies with 49% or less of the requirements of a criterion (SAN, 2013b).

To measure the score per principle and the total score, each criterion receives a specific score. The scores per criterion are as follows:

Table 5.3. Score in percentage per criterion of the SAN.

Evaluation category	Score expressed as a percentage
Compliance	100%
Minor non-conformity	50%
Major non-conformity	0%
Not applicable	Does not affect the score

Source: SAN, 2013b:13.

5.2.2. Score per principle

As mentioned before, for both the Sustainable Agricultural Standards and the Group Certification Standards the farmers and the group administrator need to have compliance with at least 50% of the criteria of each principle. By using the scores per criterion of *table 5.3*, the audited organization can estimate the score per principle. The score per principle is expressed as a percentage according to the following equation (SAN, 2013b):

$$Score\ per\ principle = \sum \frac{SAC1 + SAC2 + [\dots] + SACn}{number\ of\ applicable\ criteria\ per\ principle}$$

(SAC=score achieved of each applicable criterion)

5.2.3. Total score

More details about the total compliance of the criteria are described in the previous paragraphs of this chapter. In general it can be said that the farmers and the group administrator need to have compliance with at least 80% of the total number of the criteria. To estimate the total score per farmer or per group administrator, the scores of *table 5.3* are used. The total score is expressed as a percentage and can be calculated with (SAN, 2013b):

$$Total\ score\ = \sum \frac{SAC1 + SAC2 + [\ldots] + SACn}{total\ number\ of\ applicable\ criteria\ per\ principle}$$

(SAC=score achieved of each applicable criterion)

5.3. Audits

An audit is a visit of a certification body, such as Imaflora, that checks compliance of a group with the standards. An audit determines whether a group can be certified or not[5].

For group certification different types of audits exist. They can be distinguished in regular and irregular. The first audit of a group is called the certification audit, this is a regular audit. In the certification audit, the auditors visit a representative number of farmers. In case of group certification this is (at least) the square root of the total amount of famers included in the group. The minimum sample of other audits depends on the type of audit and other regulations, such as the score of the group of the previous visit. Since the certification audit is the first audit, all the criteria will be checked at the farms. The farmers of the group know that they will be inspected, but they do not know exactly which farmers will be inspected. They are notified one or a few days before the actual visit. In case of Imaflora, two or three auditors visit the farmers. One focuses on the management of the farm, the other on the social aspects and the last one on the environmental aspects. The auditors have a list with all the criteria. As explained in the previous paragraph, the auditors have to decide for each criterion if the farmers and the group administrator comply or have minor or major non-conformity. Since farmers are sometimes a bit nervous for the inspection, the auditors try to make the farmers feel comfortable. During the inspection the auditors try to ask open questions, such as 'how and why do you do that?' instead of asking if they comply with the different criteria. They also try to approach the farmers in a positive way, so instead of saying what agricultural practices are wrong, they focus on the good things at the farm. In addition, the audits need to be educative. The auditors try to explain to the farmers and the group administrator why the specific criteria are important and how to improve the practices at the farms. The auditors do not only talk with the owner and/or the manager of the farm, but also with its employees. However, often the employees do not dare or want to speak about their working conditions, as they do not want to get into trouble. The auditor tells the employees that no names will be used and that the information is confident, but still the majority of the employees can or will not cooperate. Besides the interviews, the auditors take pictures of the circumstances at the farm to have proof for some of their arguments in the final audit report. No specific targets exist to determine if the farmers comply with the criteria. Therefore, the determination of the compliance of the criteria is mainly subjective. However, a book with guidelines exists on the implementation of the standards that can be used by the auditors, the farmers and the group administrator.

After the certification audit, there will be a yearly visit, the so called annual audits; these are also regular audits. Since Imaflora wants to see improvements of the agricultural practices, the focus of these audits is on the criteria of non-conformity of the previous audits. As a matter of course the

[5] Information in this paragraph is based on field observations by joining a first group certification audit of coffee farmers in Minas Gerais (Brazil) in May 2013. The audit was conducted by Imaflora and lasted a week. The information is further based on interviews with employees of Imaflora and the certification policy document of the SAN (2013a).

auditors check as many criteria as possible. The minimum size of a farm sample depends on the type of audit. As mentioned before, the certification audit shall always be at least or equal to the square root of the total number of member farms. For the annual audits it is more complicated; this depends on the scores of the farmers and/or the group administrator of the previous audit. With a low score the sample gets bigger, with a high score the sample becomes smaller. With a low score for the group administrator or the farmers score between 80 and 84.9%, the sample size will be the square root of the total number of the member farms. If it is between 85 and 89.9%, the size will be 0.75 times the square root. In case of higher than 90% compliance with the criteria, the size will be 0.5 times the square root of the total number of member farms (SAN, 2013b).

The certification and the yearly annual audit are the regular visits and these are yearly scheduled by mutual agreement with the group. The irregular audits can take place at any time. There are three types of irregular audits: verification, research and non-programmed audits. The verification takes place if the group had a low score on previous audits, or if the group decides to include a new crop in the certification. This audit is scheduled in mutual agreement with the group. The size of the audit depends on the results of the previous audit. If the group administrator had a low score, the audit will only apply for the group administrator. If the farmers had a low score, the sample size will be twice the number of farms that did not meet the certification requirements; this can be extended up to a maximum of the square root of the total number of farms. The farms that had a low score at the previous audit will be part of the audit. In case both the group administrator and the farms had low scores, both will be audited.

Another irregular audit is a research audit, which takes place if the certification body thinks or has evidence that the agricultural practices are not complying with the criteria. This is an unannounced audit. The sample size depends on who the complaint is. If there are complaints about the group administrator, the group administrator will be audited. If there are complaints about one or more member farms, the audit will apply for those farmers that are included in the complaints. If necessary the size can be expended with a maximum of twice the number of farmers included in the complaints. In case of complaints about both the group administrator and the farmers, both will be audited.

Lastly, there is the non-programmed audit, which is like the research audit also unannounced. The number and the selection of the farms are determined by the certification body. The objective of this audit is to maintain credibility of the certification system. The sample size will be 0.25 times the square root of the total number of farms.

The results of each audit determine whether certification will be maintained or cancelled (SAN, 2013b). Besides these external audits, also internal audits exist. These internal audits are organized by the group administrator to remove the errors and to prepare the farmers for the external audits. These internal audits occur once or twice a year, depending on the group.

If the audits succeed and the group of farmers complies with the Sustainable Agricultural Standards and the group administrator complies with the Group Certification Standards, with reference to the scoring system, they are entitled to receive the Rainforest Alliance Certified Seal. This label ensures consumers that the product they are buying has been produced environmentally sound and with social responsible practices. The seal can be recognized by the green frog and can be found for example on the package of a tea box (Rainforest Alliance, 2013c):

Figure 5.1. Rainforest Alliance Certified Seal.

Source: Rainforest Alliance, 2013c.

5.4. Conclusion

This chapter has shown that standards for individual farmers as for farmers that are certified in a group are the same. These standards are mainly focused on worker welfare, farm management and environmental protection. For group certification additional standards for the group administrator exist. These standards are mainly focused on the management of the certification. Economic standards are not included in the certificate. While it does not include economic criteria, it is expected that complying with the social and environmental criteria will help to reduce poverty, as can be seen in the theory of change model of the previous chapter. The next chapter will investigate what the effects are of certification. It will investigate if the effects are in line with the theory of change.

Chapter 6. Case study of small-scale tea farmers in Misiones

This chapter shows the findings of the case study on small-scale tea farmers in Misiones, Argentina. Firstly, profiles will be presented to describe the important stakeholders that are included in this case study. Secondly, a short history will be shown on how group certification started in this region, which is followed by a short description of the process of group certification and the difficulties that farmers face in complying with the standards. After this, the effects of group certification on individual farmers are evaluated. On the basis of these results it can be determined if group certification actually improved the economic and social status of the smallholders. Lastly, it is investigated if group certification succeeded in its mission to include smallholders in the certification.

6.1. Profiles

This paragraph describes the profiles of stakeholders included in this research. These profiles include the tea farmers, the tea factory, and Imaflora. Since RA and SAN were already explained in previous chapters, a description of these organizations is not included in this paragraph.

6.1.1. Farmers

In Misiones a distinction can be made between three types of tea farmers: see *table 6.1.*

Table 6.1. Overview of the types of tea farmers in the Misiones region, Argentina.

#	Type of tea farmer	Description
1.	Farmers who live at the farm.	These farmers usually cultivate tea and yerba mate (traditional drink in Argentina and some neighboring countries, similar to herbal tea). These farmers generally make use of family labour. They harvest every year, so the farmers have an economic guarantee. Most farmers have no education and a modest lifestyle. The really poor farmers in the region usually do not cultivate tea, but cultivate yerba mate and have cattle.
2.	Farmers who live in town and have a farm in the Misiones region.	They work both at the farm and in town. These farmers usually have more money than an average farmer in the region.
3.	Farmers who own a large farm.	These farmers are usually specialized and cultivate only tea. The farmers have permanent hired labour working on their farm. These farmers are often in possession of (old) machines.

Source: Galuchi, personal communication 2013.

No distinction in the farmer types can be made between certified and uncertified farmers. According to Galuchi (personal communication 2013), a part of all different types of farmers, large and small, close and far away from the factory, are nowadays certified in a group. It is possible that a farmer is certified and its neighbor is not, while both their farms have the same characteristics. Although group certification was considered as a tool to include more smallholders, Galuchi states that it remains more difficult to certify really poor farmers, although there are some poor farmers that are certified nowadays. At the time of the fieldwork of this research nine groups were certified in Misiones with a total of more than 400 producers. The distances between the certified farms are

quite large, around 40 km. It is obvious that the distances differ per group and per farm. Some groups are more widespread than other groups. It is also a matter of course that the spread of farmers near the factory is smaller (Galuchi, personal communication 2013).

This thesis investigated the oldest certified group of Misiones. Reasons are that this group includes most smallholders and because it includes farmers that have been certified over more years. A total of 25 currently and prospectively certified farmers were visited at their farms and interviewed about their perceptions on the effects of group certification. The majority of these farmers lived at the farm (type one of *table 6.1)*. One of these farmers lived in town and one other farmer lived part-time at the farm and part-time in town. It was decided to interview mainly farmers that live at the farm, as these are in general the small-scale farmers. An additional benefit was that they were easier to reach. The vast majority of these farmers depend on family labour. Beside tea, all farmers that were interviewed cultivated yerba mate. In addition, some farmers had cattle or forest for wood production. At the time of the interviews, it was no harvest time for both tea and yerba mate. Therefore, most farmers were at their farm and were very willing to talk; according to the technicians of the tea factory, farmers are not used to have visitors, when there are visitors they take the time for it (technicians, personal communication 2013). It must be mentioned that last year the farmers had a really poor harvest for tea, therefore they might have been somewhat more pessimistic than other years, which might have influenced the answers of the farmers.

6.1.2. Factory

In Misiones it is common that group certification is arranged by tea factories. The certified group investigated in this thesis is arranged by one of the largest factories of Misiones. For confidential reasons the name of the factory will not be mentioned. All farmers that are certified in the group sell at least a part of their tea to this factory. The certification is managed by the group administrator of the factory. The group administrator acts as a contact point for the certification body, in this case Imaflora. It informs the group about their responsibilities, makes sure that all group members are meeting the criteria of the SAN, organizes internal audits and keeps records of lists of the group members, tea cultivating areas and the results of the internal audits. Both the current and the former group administrator of the investigated group have been interviewed. The previous group administrator applied the group for certification in 2008; making it the first RA certified group of tea farmers in Argentina. Besides the group administrators, two technicians of the factory have been interviewed. It was observed that the technicians have a good relationship with the farmers, as they visit the farmers often. The technicians give technical assistance to the farmers and do the internal audits of the group.

6.1.3. Imaflora

Imaflora (Institute of Agricultural and Forest Management and Certification) is a Brazilian NGO founded in 1995 and member of the SAN. Its mission is to promote social and environmental changes in forestry and agriculture towards sustainable development. Certification is one of the main tools of Imaflora. Certification is considered as a way to guarantee the quality of the production system and to differentiate products and producers to consumers. Imaflora assesses forest certification projects for FSC and agricultural certification projects for RA/SAN. Imaflora has a large number of certification projects in Brazil and Argentina. It is a major challenge for Imaflora to increase the accessibility and applicability of certification schemes towards smallholders, as it is also often a challenge for the

smallholders to reach the certification standards and to the pay certification costs (Guedes Pinto, personal communication 2013).

Imaflora works on different levels: besides auditing farms and group administrators for certification, capacity building is part of the tasks of Imaflora. Imaflora is building capacity only in Brazil[6]. RA is responsible for the international awareness and therefore also responsible in Argentina. In Brazil, Imaflora organizes meetings to increase the market for certified products and to raise awareness by the companies. There is a yearly event called Brasil Certificado, which lasts for three days. The event was initiated by different organizations including Imaflora. The goal is to raise awareness and to make a connection with the market (Guedes Pinto, personal communication 2013).

According to Imaflora, certification makes a difference, but it does not stand alone. Certification promotes changes towards sustainability, but also public policies are a part of the solution. Therefore, besides audits and capacity building, Imaflora is engaged with public policy work and the policy of the certification systems. Imaflora was a founding member of the SAN and for five years one representative of Imaflora was member of the board of the ISEAL Alliance. In this way they try to influence the standards and policies. Besides certification, capacity building, public policies and policies of certification systems, Imaflora is also trying to focus more on research (Guedes Pinto, personal communication 2013).

6.2. Preparation for group certification

The majority of the tea factories in the Misiones region in Argentina supply their tea to Unilever. The tea is mainly used for Lipton Ice Tea sold to the market of the United States of America. Most factories want to sell their tea to Unilever, because they give the best price for tea. In 2007, as the first tea company, Unilever announced to make its own tea production chain more sustainable in order to create a win-win situation for “people, profit and planet”. For a company like Unilever the certification was a strategy to improve its reputation and its competitiveness and to eventually gain more profit. Another important aspect was that by setting the standards, it was easier to control the supply chain of tea (IDH, 2010).

When Unilever started a partnership with RA, the factories supplying to Unilever had almost no other choice but to start certifying their supplying tea farmers. Starting the certification process in Misiones was a great challenge, as there was no experience with sustainable certifications at the farms at all. Since there were costs included for the factories, as they had to hire engineers and educate the technicians and the farmers etc., the factories asked money from Unilever to compensate the costs. Unilever accepted and decided to pay the costs for the first few years. After this acceptance, the certification process could start.

Firstly, the factories called Imaflora to assist them. In the end of 2007 Imaflora visited the region for the first time. They visited the factories and some farmers to explain generally the certification process and the standards. In addition, they visited governmental representatives to understand the laws which were applicable to the region.

After the first visit, Imaflora connected the factories with different stakeholders in order to assist them in the certification process. The factories were connected to a firm from Brazil. This firm

[6] In Argentina, Imaflora works as a certification body, their major job is to do the external audits.

assisted the group managers and the technical assistances of the factories in the understanding of the certificate, its principles and standards. However, this firm only had experience in the coffee sector and not in the tea sector. The experts from Brazil were considered helpful by the factories, as they gave information and had experience with the certificate. However, for the specific tasks considering tea, the factories had to explore it by themselves. The group administrators had to work and read a lot to organize the certification. They needed to understand the functioning of the certificate, and also gain knowledge on the protection of the ecosystem and on sustainable use of agrochemicals. The group administrators were made responsible for the actual rolling-out of the certification and thereby also for the training of the local farmers (Galuchi; Moreira, personal communication 2013).

The next step of the certification was the creation of a few small groups, based on the local buying tea factory and on the location of the farmers. Each group had one group administrator and several technicians. The factories and the farmers worked together to carry out the preparations and the implementations of the standards in order to finally comply with the requirements of the certificate. The factories organized meetings and visits, including internal audits. Internal audits were organized to give recommendations to the farmers and to prepare them for the external audits of Imaflora. In addition, INTA (National Institute of Agricultural Technology) was involved in the certification process. INTA was hired by the factories to help with the training on for example integrated pest management and soil management. In addition, they analyzed the soil of the farmers (water analyses were done by other laboratories). After eight months of hard working on implementing the agricultural, environmental, social and safety practices, the first group in Argentina became certified in 2008 (IDH, 2011).

The certification of tea farmers in Argentina is seen as successful as many different farmers are certified; still each year new farmers join the certification or new groups have been created. Official numbers do not exist, but according to the previous group administrator, who at the moment is a technical consultant for the certification in Misiones, in 2013 around 20% of the total area of tea production in Misiones was certified (Moreira, 2013 personal communication).

6.3. Process of group certification

For some farmers it was difficult to change their farming practices as they had been using the same practices their whole life. However, in retrospect, the majority of the farmers had no real difficulties with implementing the criteria into their farming practices. For some farmers it was a lot of work, as they had to make many changes, some other farmers had only to make a few changes. This paragraph shows a number of the most important changes the farmers in Misiones had to make. It is important to mention that the farmers do not have to comply with all standards immediately; certification is a process of continuous improvement.

Almost all the farmers mentioned that they had to clean their farmyard and to separate the garbage into for example organic and plastic waste. Prior to certification, the garbage was everywhere on the yard. Often the farmers burned their garbage or the wind took it. One farmer even burned the garbage in the kitchen, without knowing that toxics were released by the burning. The farmers were not aware that leaving or burning the garbage was harmful to the environment. For the farmers it was not difficult to change this behavior, but they always have to keep their farmyard clean, as the factory can visit them unannounced. However, some farmers had difficulties to explain the seasonal

workers that they had to collect their garbage. They used to leave their garbage, such as empty drinking bottles, in the field. Since the certification, the farmers always have to check if the seasonal workers did not leave their garbage in the field. Sometimes this caused problems as not all workers understood why it was necessary to change their behavior. Since the certification the farmers collect and separate the garbage and the factory picks it up. However, the factory only picks up the garbage from certified farms. The farmers that are not certified do not know where to leave their garbage. According to a farmer, the government has not created a place to leave the garbage and therefore the farmers burn it or leave it somewhere.

Other changes the farmers had to make to comply with the criteria were to create a space which could be locked, to the store agrochemicals and other toxic substances. The farmers had meetings where it was explained what harm agrochemicals or toxic substances could bring to human health or to the environment. According to the previous group administrator (Moreira, personal communication 2013), prior to certification, children were sometimes playing with empty jerry cans of toxic substances or agrochemicals. The farmers were not aware of the harm these chemicals could bring to human health. The certification learned them about the risks of the chemicals.

In line with this, the farmers or other persons that work with agrochemicals at the farm, have to use protection clothes. Before the certification, the farmers were spreading the chemicals wearing shorts, thus without any protection. Some farmers cannot get used to wear these protection clothes, as the protection clothes are heavy and warm. Some farmers had such a strong negative opinion about the clothes, that it was doubted by the author if these farmers were using them. Unfortunately, it could not be checked if the farmers actually used the protection clothes.

Thereby, the farmers had to build a shower outside of the house to protect themselves from agrochemicals or other toxic substances. After working with chemicals, the farmers need to take a shower and change into clothes that are not infected by the toxic substances. Prior to certification, the farmers went into their house to clean their hands or to have some drinks or food for example. Again the farmers were not aware of the harm it could bring to their health or others health. One farmer said that after the meeting about the possible consequences the chemicals could have on someone's health, his son refused to work with agrochemicals any longer. The risk of the harm it could bring to someone's health was too high according to his son.

In addition, a list of prohibited agrochemicals exist. Since the certification, the farmers use agrochemicals that are less harmful for the environment. According to the former group administrator, four levels of agrochemicals exist: red, yellow, blue and green. Chemicals on the red level are most toxic, the green level are least toxic. Before the certification, most farmers used agrochemicals of the red and yellow level, but since the certification most farmers use chemicals on the blue and green level (Moreira, personal communication 2013).

Another important change deals with the quality of water. The water that farmers used for drinking (from a draw-well or from a stream) had been analyzed by engineers. The results showed that almost all the drinking water used by the farmers was not potable. To the farmers it has been explained that non-potable water can have a negative effect on their health. The farmers were not aware of the risks of drinking non-potable water as they never experienced immediate effects of drinking it. As the effects occur after long term use of non-potable water, it was difficult for some farmers to understand the risks. Since the certification the farmers bought a water dispenser which was

delivered by the factory. The non-potable water is now filtered and some chloral is added to make it potable. This water can be used via the water dispenser. However, toxic substances cannot be removed by a filter or chloral; therefore there are still risks involved when using the water. For this reason and because of the chloral taste in the water, some of the farmers buy mineral water to drink. The non-potable water is mainly used for cleaning. In some cases it is still used when drinking 'yerba mate', a traditional caffeine-rich infused drink, similar to tea. The farmers said that they are aware of the risks, but as they heat the water, they believe the risk might decrease. As the farmers are used to the taste of the non-potable water, they do not like the taste of chlorine. Therefore, in some cases, they keep using it.

Another measurement the farmers had to take to improve the quality of the water was to build a fence next to streams. The fence would prevent the cattle from getting into the water and in this way the water cannot get polluted by the cattle. For most farmers this was an easy task to complete. Farmers with many streams on their lands are allowed to do a part of the fence each year. In addition, to protect the quality of the water, farmers are not allowed to use toxic substances in the proximity of streams. Unfortunately, the engineers only analyzed the water from the streams just once and therefore it is not possible to conclude if there has been any change in the quality of the water.

Besides the changes mentioned above, the farmers had to establish and maintain vegetation barriers between the crops and the areas of human activity, as well as between production areas and on the edges of public or frequently traveled roads passing through or around the farm. These vegetation barriers were often trees or bushes or other types of plants. In the field many of the so called 'curtain of trees' were observed. According to some farmers this was useful as insects stayed in the trees. In addition, any negative effects of agrochemicals and other toxic substances were minimized by the bushes. To overcome erosion little plants were planted between the tea plants in order to cover the soil. These plants were improving the fertilization of the soil.

Other common changes that were implemented, dealt with the toilets of the farmers. Some farmers had to change their toilet system or had to change the location where the excrements end up in the ground. A technician mentioned that in some cases a farmer had his toilet close to their water hole. There was a possibility that the water could get infected by the excrements and therefore they had to change the location of the toilet, so it was not nearby a water hole or a stream.

For the safety of the farmers, they needed to improve their machines and remove the dangerous parts of the machines. The technicians assisted the farmers by showing them the risks or the dangerous parts of the machines. Prior to certification, farmers were not aware of these risks.

The changes presented above were mentioned the most by the farmers during the interviews. In general, the farmers did not have many difficulties to comply with the criteria, as they did not have to change all the things immediately in order to become certified. It is a process; each year they have to improve somewhat, taking it step by step. In this way the certification is more accessible for farmers.

Besides the farmers, the factory also had to make some changes in order to become certified. The factory had to be careful with the chain of custody. For instance, the factory had to separate certified from non-certified tea. Another change was that the factory cannot use natural wood for fire

anymore, they have to use pellets/wood from plantations. This was not RA/SAN policy, but Misiones policy. Before the certification, the factories did not comply with the policy of the government. However, it was a requirement of Imaflora to change this system. For some factories it was difficult to change and according to the previous group administrator, not all factories stopped using natural wood. However, Imaflora allowed the factories to have a plan to reduce the use of natural wood every year. Step by step they have to change the system to use wood from plantations instead of natural wood. Besides, according to Moreira, for small factories in Misiones it is often even harder to become certified, as they also have many work safety problems (Moreira; Galuchi, personal communication 2013).

6.4. Difficulties of complying with the criteria

This paragraph shows the most common non-compliance of the criteria of the investigated certified group. These results indicate what criteria most difficult are for farmers to comply with. The results are based on audit reports of 2009, 2010, 2011 and 2012. As is explained in the previous chapter, not all farmers in the group get an external audit; each year a minimum of the square root of the total amount of farmers in the group gets audited. The results of these farmers represent the whole group. The first audit report of the group, the report of 2008, is not included. The reason is that the audit of 2008 is based on Sustainable Agricultural Standards version of 2005. In 2008, the SAN led a consultation process, which resulted in a new version of the Standards in 2009; this version was adapted into the current version of 2010. The versions of 2009 and 2010 are similar and therefore comparable.

The April 2009-version of the Sustainable Agricultural Standards and the current July 2010-version contains the following changes in the criteria (SAN, 2010):

- The following criteria were added: 1.11, 2.9, 7.6, 8.8 (only for sugarcane plantations), 8.9 and 10.6.
- The criteria 2.2, 2.4, 5.13, 6.4 and 7.2 were modified in its contents.
- 7.2 is a critical criterion now.

These changes had a small effect on the compliance of the farmers of the group, as only criterion 8.9 had (minor) non-compliance since its introduction. Criterion 7.2 had non-compliance before it became a critical criterion, but since it became critical the group complies with this criterion. If the group would not comply with this critical criterion, it would lose its certification.

As the audit reports of 2009-2012 are based on similar standards, these reports were analyzed. A list was created with criteria of which farmers of the investigated group had most non-compliance. This resulted in *table 6.2*, which presents the minor and major non-compliances of the group. In this table only criteria are shown where the group did not comply with the standards for at least three years.

Table 6.2. Top non-compliance of the investigated group, 2009-2012.

Criteria	2009	2010	2011	2012	Summary of criterion
8.1	MA	ME	ME	ME	The farm must have an integrated pest-management program based on ecological principles for the control of harmful pests.
1.7	ME	ME	✓	ME	The farm must have the necessary processes for follow up, measurement and analysis to evaluate the management system.
2.7	MA	ME	✓	ME	The farm must establish and maintain vegetation barriers between the crop and areas of human activity.
3.1	✓	ME	ME	ME	An inventory of wildlife and wildlife habitats found on the farm must be created and maintained.
4.4	ME	ME	✓	ME	The farm must have appropriate treatment systems that comply with the pertinent legislation for all wastewaters it generates.
5.3	✓	ME	ME	ME	The farm must directly hire its workforce, except when a contractor is able to provide services under the same conditions required by this standard.
9.2	ME	ME	ME	✓	The farm must have a soil or crop fertilization program based on periodic soil or foliage sampling and analysis, and advice from a professional or authority.
10.1	✓	ME	ME	ME	The farm must have an integrated waste management program for the waste products it generates.
10.4	✓	ME	ME	ME	Farmers must not transfer waste to persons or businesses without checking that its treatment or final use complies with the law and the SAN standards.

Symbols: MA: major non-compliance; ME: minor non-compliance; ✓: compliance.
Source: audit reports of Imaflora, 2009 -2012[7].

Table 6.2 shows that the criterion with most non-compliance over the years is criterion 8.1., which states that the farm needs to have an integrated pest management program. At the beginning of certification process, the group had not such a program. In collaboration with INTA (National Institute of Agricultural Technology) and other certified groups in Argentina a program was established. However, this program was not yet implemented at the farms. For this reason there was non-compliance of the criterion for the years that are included in the analysis.

In addition, it is remarkable that the compliance of the criteria is quite variable; one year the group has non-compliance, the next year it does comply and another year it has again non-compliance with a specific criterion. Some of the reasons will be mentioned. Continuous improvement is an important aspect of RA. The group does not need to comply to all criteria immediately. Certification is a process; therefore the group needs to have a plan for continuous improvements. However, if the group does not improve enough with respect to previous years or with respect to the original plans, it might happen that the group has non-compliance with the specific criterion. Another reason is that it is possible that farmers return on some aspects to their original agricultural practices. They were used to their own agricultural practices that they learned from childhood, some farmers used this agricultural practices already for forty years. Because of the certification, they had to change their

[7] The audit reports of 2009 and 2010 are based on the Standards of the version of 2009. The audit reports of 2011 and 2012 are based on the version of 2010.

practices, for some farmers this is quite hard. In addition, another reason is that each year different farmers are selected for auditing. Therefore, also the results can differ each year.

Besides the analysis of non-compliance to the criteria, it is calculated to what principle the group had most (non)-compliance. Calculated over four years the top three principles of non-compliance are:

- Principle 10: integrated waste management.
- Principle 9: soil management and conservation.
- Principle 2: ecosystem conservation.

The top three principles with most compliance over four years are:

- Principle 5: fair treatment and good working conditions for workers.
- Principle 7: community relations.
- Principle 4: water conservation.

These results per principle suggest that farmers have more difficulties with environmental criteria than with social criteria. For an overview of the calculations of all principles, see *appendix F*.

6.5. Effects of group certification

To measure changes over time, a pipeline approach was used, which is an evaluation design in which different generations of certified farmers and farmers that are not certified yet, but are scheduled to do so, are being compared with each other. However, comparing different generations proved not to be possible in this case study. During the interviews it was discovered that the majority of the farms that were selected to become certified were already certified before. One of these farmers had been certified in another group, for several reasons the farmer withdrew from the certification process or lost the certification. Subsequently, the farmer decided to join the studied group. Another farmer was already certified in 2008, but due to sickness he could not improve his farm practices and as a consequence the farmer lost the certification. Now, the farmer is healthy again and he wants to join the certified group again. Other reasons for the bias are the fact that some farmers have more than just one farm. The certification certifies each farm separately (more information about this subject can be found in *paragraph 6.7*). One farmer that wanted to become certified had four farms in total. Three of these farms were already certified in 2010. The last farm was expected to become certified in 2013.

In total, four prospectively certified farmers were interviewed. However, except for one farmer, the farmers had already experience with the certification, therefore the farms are different from those treated before. This means that the pipeline approach ensures a bias, rather than avoids it. For this reason, results from the next generation cannot be used as a baseline and have been excluded from the analysis.

Besides the exclusion of the prospectively certified farmers, another bias has been found. Because farmers were selected for certification by best farming practices, different generations were not comparable (see *paragraph 6.7)*. Moreover, comparing different generations became even more difficult, as the farmers could not quantify their answers. For example, they did not have absolute numbers of their production, costs or income.

Although the pipeline approach did not work out as expected, with the recall added in the interviews it was possible to measure the social and economic effects of group certification on smallholders.

In total 25 farmers were included in the pipeline approach. However, as the farmers that were expected to become certified were excluded, the results of in-depth interviews of 21 farmers have been analyzed:

1. Six farmers certified in 2008.
2. Five farmers certified in 2009.
3. Six farmers certified in 2010.
4. No farmers certified in 2011[8].
5. Four farmers certified in 2012.

As the farmers could not quantify their answers, the farmers have been asked about their perceptions on several social and economic aspects that possibly changed after becoming certified. This means that the effects presented in the tables of this paragraph are not based on quantities mentioned by the farmers, but on perceptions of the farmers.

As the farmers were asked about their perceptions, the results can be influenced by the ignorance of the farmers. Based on field observations, it must be noted that a small number of the farmers only experienced direct effects. For example, some farmers did not understand why questions were asked about economic aspects, as some farmers believed that the certification is to improve environmental and social aspects and not to increase incomes. In order to deal with these issues, the questions were formulated very simple and open. Besides a recall, member checks and field observations were used as a method of checking the responses of the farmers. Unfortunately, it was never possible to entirely isolate the effects of influences as mentioned above. However, because of the methods used, the influences were minimized.

In addition, it must be mentioned that in the cases where a farm had several farms certified, the farm which was considered as the main farm, was used for the investigation of this research. None of the certified farmers that were interviewed had farms certified over different years. Often the farmers certify them in the same time period. It was also possible that a farmer had two houses, for example one for himself and his wife and another for his son and his family, or that the farmer had a house at the farm and one in town. In these cases, the farmers were always asked about the house they considered as their main house. However, just a few farmers that were interviewed had several houses and/or several farms. In line with this, initially it seemed that only smallholders were interviewed. However, because a part of the farmers that were interviewed had several farms, not only small-scale farmers were included in this research. Fortunately, the majority of the farmers that were interviewed were smallholders, only some were medium-scale farmers. As the majority of the farmers were smallholders, this chapter will continue using this term. More information on the definition of smallholders and on farmers included or selected in the group can be found in *paragraph 6.7*.

[8] As no farmers were certified in 2011, there were no farmers that could be interviewed for that year. More information about the selection of the farmers for certification will be given *paragraph 6.7.*

This paragraph will further present the effects of certification, by means of evidence based evaluation. A division is made between two levels: farm and household level. On both levels social and economic effects are mentioned. The results are based on the perceptions of 21 farmers that were certified varying from one until five years long. Thereby, the results are based on additional information from interviews with other important stakeholders. On the basis of the interviews, a clear indication can be given on the effects of group certification on smallholders.

6.5.1. Effects at farm level

Productivity

Two thirds of the farmers that are all certified over different years believed that their productivity of tea has increased since the certification. Two of these farmers think that it was not related to the certification: one of these farmers used new plants since the certification, which according to him caused the increased productivity; the other farmer believed that the productivity increased because the weather is changing in general. However, the vast majority of these farmers and thereby at least half of all the farmers, relate the increased productivity to the certification. However, the farmers cannot say how much the productivity increased. Prior to certification, the farmers did not know which and how much fertilizer they had to use. Due to the certification, the soil was analyzed and now farmers use fertilizer that was recommended by the engineers. According to the farmers this resulted in increased productivity. Unfortunately, some of these farmers started to re-use the cheapest fertilizer again. During the beginning of the certification, the factory provided the fertilizer that was recommended. As the factory could buy fertilizers in large amounts, they provided the fertilizer for a lower price. The farmers could pay it back in tea. However, after a few years, the factory stopped providing the fertilizers. Now the farmers have to buy it by themselves, so they have to pay it with money and they have to pay a higher price. Some of the farmers did not have the money to buy the specific fertilizer and as a result these farmers unfortunately use the cheapest fertilizer again. Nevertheless, these farmers do believe that using the right fertilizer did/can increase the productivity.

One third of the farmers believed that the productivity of tea stayed the same since the certification. Two of these farmers stated that it was constant because they have old plants. Two other farmers stated that it did not increase, because they already used the recommended fertilizer before the certification. For one farmer productivity did not change because he believed that it depends on the weather. However, one of the certified farmers mentioned that ‘not all farmers really believe in the certification, but if you listen and follow the instructions of the engineers, productivity will increase’.

Table 6.3. Perceptions of certified tea farmers on the productivity of tea.

	Decreased	**Constant**	**Increased**
Productivity (N=21)	-	33%	67%

As mentioned before, it was not possible to compare the amounts of production over the last years, as most farmers did not know the amounts they had produced over the different years. In addition, some of the numbers the farmers gave were somewhat unrealistically high; it seemed that these farmers were talking about the total of their farms and not just the one that was certified or

considered as the main certified plot. Also at the factory the numbers of tea delivered by the farmers were asked. However, some of the farmers deliver to several factories, so it is not sure if they sold everything to the specific factory. Therefore, the quantities of the increase in production are not known.

Quality of tea

Three quarters of the farmers believed that the quality of tea increased after certification. All of these farmers stated that it was related to the certification. According to the farmers, there were several reasons for the increased quality of tea. Some farmers mentioned that the machines that were used for harvesting do not leak oil anymore. As there is no oil on the ground or on the tea plant, the tea is cleaner since the certification. Some other farmers mentioned that the tea was no longer sprayed with poison. If there was an insect on the tea plants, the farmers would use poison to destroy it. However, sometimes the tea was harvested almost immediately after they used the poison. Prior to certification, the farmers did not know that the tea would then have become toxic. Now they know that they cannot harvest their tea after they just used poison on their tea plants. In addition, some farmers mentioned that the quality of tea increased because they cut the tea regularly, making the tea grow better and the tealeaves newer, which results in better quality. Lastly, a few farmers mentioned that they use other fertilizer than before the certification, which also influenced the quality of the tea according to them.

Only 25% of the farmers believed that the quality of tea remained the same. One of these farmers, who was certified in 2012, said that he did not have the tools or the money to use the right fertilizer and to cut the tea. According to the farmer, he did not work as he should be working, therefore it was possible that the quality remained the same.

Table 6.4. Perceptions of the certified tea farmers on the quality of tea.

	Decreased	**Constant**	**Increased**
Quality (N=20)	-	25%	75%

Costs for tea production

50% of all the farmers stated that they had increasing costs over the years. 40% of the farmers believed that the increasing costs were related to the certification, the other 10% of the farmers believed that it was not related. Most farmers mentioned that fertilizers were the main costs for the farmers. After the soil was analyzed, most farmers started using other fertilizers. In addition, farmers used other poison than before certification. These recommended products are somewhat more expensive than the products the farmers were using before, but it is assumed that they are better for the environment. An unrelated factor to the certification of increased costs was the inflation.

Another 40% of the farmers believed that the costs remained constant since the certification. Reasons mentioned were that they already used the recommended fertilizer prior to certification or they use the old fertilizer again, as the factory did not provide the recommended fertilizer anymore. Two farmers believed that they had decreasing costs since the certification. One of the farmers

stated that he uses less fertilizer than before, therefore he has less costs. The reason of the other farmer was not related to the certification.

Table 6.5. Perceptions of the certified tea farmers on the costs of tea production.

	Decreased	**Constant**	**Increased**
Costs (N=20)	10%	40%	50%

Income of tea production

Only one farmer stated that his net income of tea production decreased after certification. The reason for a decrease was not related to the certification according to the farmer, it decreased because the price of tea was very low. 45% of the farmers believed that their net income remained the same. Reasons mentioned were among others a combination of a low price for tea and/or higher costs, but this was compensated by a higher productivity and/or a premium (plus three peso cents) for certified tea. The other 50% of the farmers believed that their net income from tea increased. Most farmers mentioned the price premium on tea (0.45 + 0.03 pesos/kg) as a reason for the increased income. Based on the price of tea at the moment of the interviews, the premium was an increase of 6.7% on their income. Some other farmers reported a combination of the premium and the increased productivity.

Table 6.6. Perceptions of the certified tea farmers on the net income of tea.

	Decreased	**Constant**	**Increased**
Income (N=20)	5%	45%	50%

Spin-off effects

Besides tea, all farmers produced yerba mate. 90% of the farmers believed that their net income of yerba mate increased since the certification. 52% of the farmers interviewed believed that this was (for a part) related to the certification. As the farmers use better agricultural practices, they believed that the productivity of yerba mate has increased. 38% of the farmers stated that the increased income of yerba mate was not related to the certification, but to the increased price of yerba mate. For the remaining 10% the income of yerba mate was constant. One of these farmers was certified for just one year, so he had not yet experienced any differences in productivity or income. However, the farmer believed that the productivity and therefore his income would change after a couple of years. Another farmer mentioned that he changed his farming practices already before the certification, therefore there was no effect of the certification visible for him. In total, about half of the farmers stated that the net income of yerba mate had increased because of the certification. Since the production of yerba mate is not certified, these results suggest that there are spin-off effects of certification. However, as the farmers did not know the absolute amounts of the increased in production, it was not possible to conclude how much it has changed.

Table 6.7. Perceptions of the certified tea farmers on the net income of yerba mate.

	Decreased	Constant	Increased
Income (N=21)	-	10%	90%

It is interesting to notice that almost half of the farmers believed that their net income of yerba mate increased partly due to the certification. This is interesting, because the certification is focused on tea production and not on yerba mate. However, it must be mentioned that the harvest of tea of the last year was very poor; according to the farmers, it was the worst harvest since many years. On the other hand, the price that farmers received for yerba mate was very high. For these reasons, it is possible that the farmers were pessimistic about the influence of the certification on tea production and optimistic about the influence of the certification on the production of yerba mate.

Guarantee to sell tea

The harvest period starts generally around the end of October and ends in the beginning of May. In this period, the farmers harvest the tea four or five times, depending on the tea plants and the weather. There is a contract between the farmers and the factory which guarantees the factory a certain amount of certified tea and which guarantees the farmers a certain amount of tea they can sell to the factory. The contract states that farmers need to sell at least 60% of their harvest to the contracted factory. In addition, the farmers receive a premium of three cents per kg., when selling their tea to the contracted factory. Besides the contract, the harvest has been more organized since the certification. The factory has contact with the farmers to discuss when a farmer will harvest and what the estimated amount of tea in kg is. Prior to certification, the farmers did not communicate with the factory when they were planning to harvest. Some days all farmers suddenly decided to harvest, resulting in many farmers arriving at the same time at the factory to deliver their tea. This lead to long waiting times for the farmers and the tea which kept in the truck. The tea was warming up in the truck and as a consequence the quality of the tea decreased. This resulted in a lower price for the tea as the quality decreased. It could also happen that the farmers left without money as the factory could not buy their tea, due to reaching its maximum capacity. This meant that the farmers had to go to another factory to sell their tea. Sometimes the farmers had to wait there as well while in the meantime the quality of the tea kept decreasing because of the heat. Since the certification, this is more organized. The factory needs to control the delivery of the tea to prevent mixing of certified tea with non-certified. Since the certification, the factory and the farmers communicate when to deliver the certified tea, so the farmers do not have to wait when arriving at the factory with their truck full of tea. Now they are sure they can sell their tea and the quality of the tea remains good. In addition, the farmers become less tempted to sell their tea to other factories, as they receive a price premium on their tea when selling it to the contracted factory. Uncertified farmers have no contract and therefore they are not guaranteed that they can sell their tea to the factory. One of the farmers explained that ‘before the certification, the farmers had to get rid of their tea, now the factory asks for their tea’.

Land use

Only three farmers (certified in 2008 and 2009) increased the area of tea production. However, this was not related to the certification. The land use of the other farmers remained the same, so no more land was dedicated to certified crops.

Table 6.8. Land dedicated to certified crops.

	Decreased	Constant	Increased
Land dedicated to certified crops (N=21)	-	86%	14%

Machines/transport assets

Only a few farmers had some changes in their machines and/or transport assets since the certification. Some farmers got a new pick-up or a tractor; however this was not related to the certification, but mainly to the production of yerba mate. As the price they had received for yerba mate was high, the farmers had some money to buy new assets. One of the farmers mentioned that because of the certification, he realized that his old machine was too dangerous and therefore bought another. However, he could only pay for this with the money of yerba mate. Other farmers did not buy other machines or transport assets, but many farmers improved their machines mainly for security reasons.

Safety

Almost all farmers (95%) believed that they work safer at the farm since the certification. As the factory organized meetings, the farmers have gained more knowledge on safety and risks at the farm. Since the certification, they know how to work with agrochemicals and other toxic substances: the farmers have special storage facilities for the toxic substances; they use protection clothes when they work with agrochemicals; and they have a shower outside the house which they can use after working with agrochemicals. In addition, they have learned how to work with the machines and how to improve the machines to improve the safety. In general, farmers mention that they work safer since the certification, in the way that they know how to use toxic substances and how to use the machines. For most farmers this knowledge was a real eye opener.

Table 6.9. Perceptions of the certified tea farmers on the safety at the farm.

	Decreased	Constant	Increased
Safety (N=21)	-	5%	95%

Relationship with the factory

Almost all farmers (80%) stated that the relationship with the factory remained the same since the certification. Although the relation did not change, most of these farmers mentioned that they have more contact with the factory, as the factory organizes meetings and visits the farmers more often. Only a few farmers (20%) believed that the relation with the factory has improved: one farmer

mentioned that they are now more important for the factory, as the factory wants their certified tea. Another farmer mentioned that he feels better respected. However, these results show that in general the relationship between the farmers and the factory has not improved, but there is just more contact than before the certification. Moreover, according to Moreira, the relationship between the factory and the farmers has not become better as some managers are still disrespectful towards the farmers. For example, some of the factory managers do not want to meet the farmers, because they think the farmers smell bad. Sometimes, managers walk away from meetings because of the smell. In addition, it has been observed that the relation between the current group administrator and the farmers was not very well, as the group administrator was often complaining about the farmers.

Table 6.10. Perceptions of the certified tea farmers on the relation with the factory.

	Constant	**Improved**
Relation with the factory (N=20)	80%	20%

Women inclusiveness

In general, the women of the farmer families do not work at the farm. Often the women work in the house and in the vegetable garden. A couple of women are teachers at a school in town. Since the certification, almost nothing changed for the women at the farms, however some farmers mentioned a few changes. One of the farmers changed his harvest machine since the certification. Before they needed three people to work with the machine, now only one, therefore his wife does not help at the farm anymore. Another farmer mentioned that since the certification, his wife does not work with poison anymore. Another farmer mentioned that his wife was responsible for the garbage management. However, 85% of the farmers stated that since the certification nothing changed with respect to the inclusion of women at the farm. Usually the women themselves were also present during the interview. These women also stated that almost nothing changed for them since the certification.

Table 6.11. Perceptions of the certified tea farmers on the inclusiveness of women.

	Decreased	**Constant**	**Increased**
Inclusiveness (N=20)	10%	85%	5%

Knowledge

Besides asking the farmers about specific social and economic aspects, the farmers were asked about the effects of certification in general. The vast majority of the farmers stated that one of the most important effects of the certification was the increased knowledge level. Prior to certification, most farmers did not any knowledge about good agricultural practices. Most farmers were taught by their parents or taught themselves. Only a few farmers mentioned that they gained knowledge from an agricultural school, the INTA, radio/TV or from meetings. Since the certification, the farmers have an

opportunity to gain knowledge about good agricultural practices; meetings are organized and they learn from the engineers from INTA or from the technical assistances from the factory.

Organization of the farm

Another effect of the certification is that the farms are more organized. This can be clearly seen when looking at the farms itself as the garbage is cleaned up and separated, the toxic substances are stored at one place etc. In addition, because the farmers have gained more knowledge, they know how to take care of their tea plants, the environment in general and their health. This makes some farmers feel that the farms are more organized.

Child labour

According to the previous group administrator, child labour was a problem before the certification, especially when it concerned the production of yerba mate. As the majority of the farmers worked at the farm when they were a child, it was normal for them that children work. The factory explained the farmers that if children would work at the farm, they cannot go to school. For this reason child labour became prohibited at farms. Despite the fact that the farmers have not been specifically asked about child labour, one farmer explained that they have to be very careful with child labour since the certification. Prior to certification, other children than his own worked at his farm, but he does not let children work at the farm anymore, because he would get into trouble. In addition, he explained that he is now also more careful with his own children. He does not want his children to help at the farm, because it would not be good for their future. He wants them to have a career.

The number of children that go to school has not been investigated, because most farmers had adult children. In addition, because the farmers had in general no permanent labour, it was not investigated what effects the certification had on labour of the farmers.

6.5.2. Effects at household level

Household savings and loans

81% of the farmers stated they do not have a loan for the farm or the household. Of the remaining 19% farmers, most mentioned that they sometimes received money from the factory. However, this was not really a loan, more an advance payment, which was paid back in tea. These farmers believed that the certification had no influence on the advance payments. Only one of the farmers had a real loan. He received the loan of the Feria Franca. The Feria Franca is a society of farmers which receives money from the government. They have a board that divides the money as a loan to the farmers. The farmers need to pay it back with some rent, enabling other farmers to also get a loan. Since the farmer had this loan already before the certification, the certification had no influence on the access or the height of the loan.

Only 14% of the farmers that were interviewed had savings. Of this 14%, only one farmer believed that his savings increased a little because of the certification. For the other farmers the savings remained the constant. The other 86% of the farmers did not have any savings at the moment and also not before the certification. Most farmers invest all their money in the farm. These results suggest that the certification did not have an influence on the amount of both savings and loans.

However, it must be mentioned that because farmers did not ask for a loan, it is not possible to conclude if certification influenced the access to possible loans.

Table 6.12. Perceptions of the certified tea farmers on the household savings and loans.

	Do not have	Do have	Decreased	Constant	Increased
Loans (N=21)	95%	5%	-	100%	-
Savings (N=21)	86%	14%	-	95%	5%

Status of the house

Most certified farmers lived in houses made of brick. Around 30% of the farmers lived in houses made of wood or a combination of wood and brick. One of the certified farmers lived in a wooden house prior to certification, now he built a new house of brick. However, as he bought the tools to build the new house before the certification, this was not related to the certification. The certification did influence the way he was building the house. The farmer changed, for example, the toilet system. In addition, the certification stimulated the farmer to build the house. Another certified farmer was also building a new house. At the time of the interview, the farmer and his family lived in a wooden house with a roof of corrugated iron. They were building the house, which would be made of brick. They wanted to build this house already for twenty years according to the farmer. As the price for yerba mate had been good, they had gathered money to realize it. For this farmer, the certification only affected the way they were building it; here also the toilet system was changed.

All the other farmers mentioned that nothing was changed in the house because of the certification. However, they did mention that they changed things outside the house. Sometimes the farmers bought some new household assets, but this was because they had to replace it, as it was too old or broken. The good price of yerba mate made is possible to buy new assets.

Table 6.13. Material of the house.

	Wood	Wood/Brick	Brick	Same	New house
Material (N=20)	20%	10%	70%	90%	10%

Economic category

95% of the farmers categorized themselves as medium poor or medium/average, the remaining 5% considered themselves as medium rich. 70% of the farmers believed that these categories were the same as before the certification. 20% of the farmers perceived a minor increase in their economic situation; however, this was not related to the certification. Farmers mentioned the increased price of yerba mate as one of the causes of the increased economic situation. The remaining 10% of the farmers also believed that the economic situation increased a little bit, however, in contrast with the other farmers, these farmers believed that it was partly related to the certification. This means that 90% of the farmers did not perceive an economic improvement because of the certification.

It must be mentioned that the category in which the farmers allocate themselves, depends on the comparison. One farmer compared himself to a doctor, while another farmer compared himself to homeless people. Therefore, observation was important. Based on observations most farmers were indeed categorized as medium/poor or medium. Almost all the farmers had a house in reasonable conditions. Only one of the farmers had a house in really poor condition, however, this farmer was building a new house. In general, it could be said that all the farmers had the basic needs and similar electrical assets such as a television, a fridge and an electric shower. Some farmers had a computer, but none of the farmers had money go on holidays.

Table 6.14. Perceptions of the certified tea farmers on the economic category of their household.

	Poor	**Medium/ poor**	**Medium**	**Medium/ Rich**	**Rich**	**Decreased**	**Constant***	**Increased***
Economic category (N=21)	-	43%	52%	5%	-	-	70%	30%

*(*N=20).*

Potable water

As explained earlier in this chapter, for most farmers the quality of drinking water changed since the certification. Analyzes of engineers have shown that the drinking water used by the farmers prior to certification was not potable. Since the certification, the drinking water is filtered and some chloral is added to make it potable. However, as not all farmers do like the taste of this water and because not all toxic substances can be removed with this method, several farmers started to buy drinking water. Water from the waterhole or from the stream is now often used for cleaning or for drinking yerba mate. Unfortunately, it was not possible to measure if the change of drinking potable water had an effect on the health of the families.

Health check

Before the certification, farmers only went to a doctor when they felt sick. However, since the certification the farmers that work with agrochemicals are required to have an annual health check that is provided by the factory. During the health check, they blood is analyzed to check for poison. For the other persons in the family, the frequency of visiting a doctor is the same as before the certification. In general, they visit a doctor only when they believe it is necessary.

The frequency the farmers and their families visit a dentist also did not change after the certification. Most families or a part of the family, such as the children, go regularly to a dentist. In general, the somewhat older farmers (the farmers with adult children) and their wives only go to the dentist when necessary, for example, if they feel pain.

6.5.3. Trend over different generations

Although, a bias has been found by comparing different generations, out of curiosity of the author, it was investigated if some generations were more positive about the effects of certification than others. However, the answers of the farmers were in such a way spread, that for none of the aspects a trend could be seen. According to the group administrator and the technicians this result is not surprising, as they stated that each farmer is different. While one farmer had to change a lot at his farm, another farmer did not, and thus the effects of certification will differ. In addition, one farmer

is faster with adapting the newly taught farming practices than the other farmer. Moreover, as each person has a different personality, one farmer can be more optimistic than the other in the same situation. There is also a difference to be noticed if farmers believe in the certification. According to the technicians and some farmers, there are always farmers that do the minimal effort to become and stay certified. Sometimes these farmers do not believe in the certification and they do not implement the advices of the factory and the engineers. On the other hand, there are farmers that do believe in the certification. They believe that returns will be the greatest if a farmer follows the instructions of the factory and the engineers. Also the generations of the certified farmers differ. According to the current group administrator, the farmers that were certified in 2008 were more or less pushed by the factory, because the factory needed certified tea. The group administrator stated that about half of these farmers withdrew from the certification process or lost their certification. The main reason mentioned by the group administrator was that the farmers were too old and not in the condition to change their farming practices. Especially when there was no successor, the farmer had no motivation to change his farming practices. Some of these farmers were taken out of the certification process, because they did not meet the critical criteria or they repeated the same faults several times. Another reason mentioned was that some farmers sold their farm. One of the farmers that was interviewed withdrew from certification, because there were too many requirements; another farmer mentioned that it was hard to make the changes, as he did not live at the farm. According to the group administrator, it was different for the farmers that were certified in 2009; they saw what the certification did and as a consequence these farmers came to the factory by itself to inform about the certification. Therefore it can be concluded that because each farmer of each generation is different, no trend of effects will be visible.

6.6. Input-output-outcome framework

This paragraph shows the most important social and economic effects based on the perceptions of 21 farmers that are certified between 2008 and 2012 and all belong to the same group. Besides the perceptions of the farmers, the results are based on additional information from the interviews with other important stakeholders. *Table 6.15* shows a summary of the results discussed in the previous paragraphs. The effects are sorted by the level of effects, with at the top of the table the investigated aspects that effected most farmers and at the bottom of the table the investigated aspects that effected least farmers. The effects are further divided among input, output and outcome. As explained in *chapter 4*, the definitions are as followed:

- Input: direct investments made in the project.
- Output: direct results of complying with the criteria of the certification.
- Outcome: results of the input and output at individual farm level.

As this thesis investigated the effects on individual farm level, most effects are shown in the outcomes. For this reason the outcomes are divided in two parts. The first column shows the investigated aspects that include effects of group certification; the second column shows the investigated aspects that did not include effects of group certification.

Since this thesis does not investigate effects on regional level, it was not possible to show impacts in *table 6.15.* This does not mean that there are no impacts, but based on the results of this thesis it is not possible to conclude that there are impacts on a regional level. Furthermore, it is important to mention that the table has to be read per column and not per row.

Table 6.15. Overview of the perceptions of the tea farmers and other important stakeholders on social and economic effects of group certification.

Input*	**Output***	**Outcome* (effects)**	**Outcome* (no effects)**
Trainings/meetings organized by the factory. Technical assistance of the factory. Soil and water analyses by INTA and other research institutes. Internal audits by the factory. External audits by Imaflora. Price premium paid by the factory to the certified farmers. The factory receives financial support of Unilever	All farmers have a contract with the factory since the certification, which guarantees that they can sell at least 60% of their tea to the factory. Since the certification all farmers have an annual health check. 95% of the farmers work safer at the farms. Since the certification the majority of the farmers drink potable water. No children work at the farm anymore, as child labour is prohibited by the certification.	95% of the farmers have gained knowledge on good agricultural practices and increased access to knowledge because of the certification. The vast majority of the farmers are more aware of risks because of the certification. For most farmers their farms are more organized because of the certification. 75% of the farmers believed that the quality of tea increased because of the certification. At least half of the farmers believed that the productivity of tea increased because of the certification. At least half of the farmers believed that their income of yerba mate increased because of the certification. Half of the farmers believed that their earnings from tea increased because of the certification. 40% of the farmers believed that their costs of tea increased because of the certification. Another 40% of the farmers believed that the costs remained the same.	80% of the farmers believed that the relationship with the factory remained the same. However, they have more contact with the factory due to the certification. 85% of the farmers believed that the certification did not have an influence on the inclusiveness of women at the farm. 90% of the farmers believed that the certification did not have an influence on the economic situation of the households. 95% of the farmers believed that the certification did not have an influence on the amount of both savings and loans. The farmers believed that the certification had no influence on investments in new machines or transport assets. The farmers believed that the certification had no influence on the amount of land that is dedicated to certified crops. The farmers believed that the certification had no influence on the status of the houses of the farmers.

(* Based on interviews with 21 certified tea farmers and a number of interviews with other important stakeholders).

In order to investigate if the results of *table 6.15* correspond to the real situation, the certified farmers have been asked what according to them the main advantages of group certification are. As reported by the farmers, the main advantages of certification are:

- Gaining knowledge about good agricultural practices.
- Taking care of the environment.
- Taking care of their health.

These advantages correspond to *table 6.15,* as the main social effects of group certification perceived to be increased knowledge level and aspects dealing with health and safety.

Only a few farmers mentioned economic aspects as one of the main advantages of certification. Economic advantages were for example the price premium and the contract between the factory and

the farmers, which guarantees that the farmers can sell at least a part of their tea to the contracted factory. However, as reported by the farmers, their economic situation did not change as much as their knowledge about good agricultural practices. This can also be shown in *table 6.15*: a reasonable part of the farmers stated that their income of tea increased because of certification, but this increase in income is such a small amount that 90% of the farmers did not actually feel an economic improvement of their situation.

It can be concluded that the farmers appreciate the contract with the factory and the price premium on tea. In addition, for a part of the farmers the certification leads to increased productivity of tea. However, despite the increase in productivity, the farmers did not perceive an improvement of their economic situation. On the other hand, social aspects of the farmers did improve. Analysis of the perceptions of the farmers showed that the main effects of group certification on tea farmers are increased knowledge level about good agricultural practices and taking care of the farmers' health, including safety and risk aspects.

6.7. Contextual Aspects

The previous paragraph showed results from the evidence based evaluation. This paragraph uses a more realistic evaluation, by providing insights into important aspects of the context, which may provide a contextual answer to the results of evidence based evaluation.

During the research it was noticed that the factory plays a major role in the certification process. This paragraph will discuss a number of assumptions of group certification and the influence of the factory on these assumptions.

6.7.1 Selection of farms for certification

The important role of the factory starts already at the beginning of the process with the selection of the farms for certification.

One of the most important assumptions of group certification is that it assumes to be an initiative to include smallholders in the certification. Therefore, this research is focused on the effects of group certification on smallholders. However, during the selection of the farmers for the interviews conducted in this research, it was already experienced that it was difficult to find certified smallholders. Therefore, the question arises: to what extent are smallholders actually included in group certification?

Earlier in this thesis it was mentioned that Potts et al. (2010:66) defined small-scale farmers as farmers that were farming on less than five ha. However, according to the High Level Panel of Experts of food security and nutrition (HLPE), there are several definitions of smallholders. This raises the difficulty of defining a smallholders as a definition cannot be "one size fits all", there are many variations in each specific context. In addition, the definition of smallholders does not only depend on farm size, it depends also on its resources (HLPE, 2013). For this reason different stakeholders were asked to define small-scale tea farmers of Misiones in Argentina. According to the previous group administrator (and now consultant in Misiones for RA group certification) (personal communication 2013), a small-scale farmer in Misiones has one farm with ten or less ha of tea. According to the current group administrator of the investigated group (personal communication 2013), a smallholder has less than 25 ha of tea, a medium-scale farmer has 25-50 ha and a large farm

has more than 50 ha of tea. Furthermore, the group administrator mentioned that large farms have in general hired labour; small and medium-scale farms have only family labour. Based on these definitions and field observations, a smallholder of Misiones is defined as a farmer that has one farm with ten or less hectares of tea. In addition, the farmers (and their families) live at the farm and depend on family labour.

The investigated group was selected for this research as it included farms that were already certified since 2008 and because it included most smallholders, compared to the other groups in Misiones. However, it was found that certified groups in Misiones do not include many smallholders. There are no official numbers, but according to Moreira (personal communication 2013), in Misiones approximately 45,000 ha is used for tea production (divided among more or less 4,000 farmers). About 9,000 ha (20%) of the total tea production areas is certified by RA. Of this area 2,000 ha belongs to small-scale farmers and 7,000 ha to medium- and large-scale farmers. The remainder non-certified area, 36,0000 ha (80%), is almost all from small-scale farmers. This means that only a small part of all the smallholders in Misiones is certified by RA. The reasons that groups include more medium- and large-scale farmers than small-scale farmers will be explained based on the investigated group.

In the investigated group many farms became certified in 2008 and 2009. In August 2009, 125 farms were certified. The enormous increase of farms that joined the group, decreased again rapidly in 2010. The SAN introduced a new policy in 2010 that stated that if the group administrator of the factory decided to add more than 10% of the total amount of ha of the previous year, the certification body (in this case Imaflora) had to come to check all 99 criteria again, similar to the first audit of a group. With 10% or less new certified ha, Imaflora continues the normal process of certification (as has been explained in the previous chapter). Mainly for this reason, the group administrator decided to certify a maximum 10% of the total amount of ha of the previous year. Other reasons for the group administrator to add only a few farms per year were to keep controlling the group and make improvements in it. This resulted in less new certified farms in 2010 and 2012 and no certified farms in 2011. For 2013 and 2014 it was expected that also a small amount of farms will become certified and added to the group. As a consequence of adding only a few farms per year, the factory started to select the farms for group certification more strictly.

The factory itself has many farms in ownership; if a farmer in the neighborhood wants to sell its farm, the farmer contacts the factory first and they can decide if they want to buy the farm or not. If they do not want to buy it, someone else can get the opportunity to buy it (technicians, personal communication 2013). As in this particular case study the factory organizes the certification, it is also the factory that decides which farms become certified. The farmers can go themselves to the factory to inform about the certification or if the factory sees that a farm is in the right condition for certification, the factory will go to those specific farmers. As there are no selection requirements for the size of the farms or other aspects that determine the definition of a smallholder, generally the first farms that become certified are the farms that are owned by the factory itself. If any ha of the 10% are left, in general the farms of large-scale farmers and farms with the best agricultural practices are selected to become certified. These are the farms that fit the requirements of the certification with minimum effort of the factory, thus the factory has fewer costs to certify their supplying farmers. For example, in 2012, 159 ha of tea production became certified, 104 ha was in ownership of the factory and the rest (55 ha) was divided over five different farmers. At the end of 2012, a total

of 1,727 ha was certified, of which 829 ha was in ownership of the factory. This means that almost half of all the certified land was in ownership by the factory itself. Besides the farms of the factory, the other farms, that were expected to become certified in 2013 and 2014, were obviously farms that needed minimum changes to do to become certified. One of these farmers had three other farms that were already certified and therefore the fourth one was easy for him to certify. Another two farmers had already been certified before. However, due to sickness and other reasons these farmers withdrew from the certification process or lost their certification. Now they want to become certified again. The farmer that wants to become certified in 2014 was not certified before and did not have other certified farms, which means this certification will be more work for the factory. However, as this farmer has two farms, it is more beneficial for the factory than to certify a farmer with one farm. These examples show that the factory prefers medium- or large-scale farmers and farms where less work is needed to become certified, so that it is most beneficial for the factory.

During the research it was noticed that quite a few (certified) farmers had several farms. The reason for this can be found in the history of the country. Around the fifties, after a huge migration wave from Europe, the government decided to divide the land in approximately 25 ha each. These numbers are an approximation as Misiones has irregular land. Misiones has places properly divided, but also other places with streams or hills that are not properly divided. Over the years, some farmers sold their land, bought land or divided their land etc. Nowadays, if a farmer has four farms, this does not mean that the farmer has four working places and four houses. Often the farmer has just one house to live, with a working place and some plots. All these plots, of different sizes, are called a farm. Thus, if a farmer buys a new farm, in most cases the farmer just buys a piece of land, a plot (Moreira, personal communication 2013). For the certification these different plots are important, as it was found that each plot or 'farm' has to be certified separately. Therefore, it is possible that a farmer has four farms and that each farm is certified in a different year. Seeing that the certification is arranged per farm and not per farmer, it seems on paper that the certified group includes many smallholders. However, when looking closer to the different farms, it can be seen that they are owned by one farmer and thus the smallholders turn out to be medium- or sometimes even large-scale farmers. Also in case of the factory, it seems the group includes many smallholders, but for a part these farms are in ownership of the factory. The reason of the factory to certify the large-scale farmers instead of the small-scale farmers is based on the lower costs of large-scale farmers. Certify one farmer with four farms results in less costs and efforts than certifying four individual farmers with all one farm. Some farmers start certifying one farm and certify the other farms later, as described earlier in this paragraph. As the factory only registers the certified farms, it is not known how many farms a farmer has; therefore it is not exactly known how many small-scale farmers are included in the investigated group. For this research mainly small-scale farmers of the group have been interviewed. In the end, 21 certified farmers of the investigated group have been interviewed[9]. Based on the definition of smallholders, as mentioned earlier in this paragraph, two third of the farmers interviewed were smallholders. Other farmers were defined as medium-scale farmers, as two farmers hired permanent labour, some other farmers had more than one farm and others had more than ten ha of tea. It was expected that more smallholders would be interviewed, but due to the reasons explained before, it was a challenge to find smallholders over different generations. It

[9] In total 25 farmers have been visited and interviewed: 21 certified farmers and 4 farmers that were expected to become certified. In addition, 2 farmers that withdrew or lost their the certification were shortly interviewed by telephone.

was especially hard to find smallholders of the most recent generations, as most certified farms were in ownership of the factory. These farms are not comparable with the farms of smallholders, because the factory had more resources in the form of money, land and workers employed at their farms.

To give an answer to the question if smallholders still do not participate in the certification process, in the case of Misiones the answer would be yes. However, it must be mentioned that without group certification at least the majority of the other farms would most likely not have been certified as well. Therefore, group certification did not yet succeed in the mission to overcome the non-participation of smallholders, but it definitely succeeded in the mission to include more farmers.

This problem of non-participation of smallholders was recognized by among others Solidaridad, a Dutch developmental NGO. Since a few years Solidaridad is included in the certification process to train smallholders, technicians and small factories. According to Moreira, who was hired by Solidaridad, the project was without success as they could not involve smallholders and small factories in group certification. However, since June 2013 there is a new arrangement between Solidaridad and Imaflora. Imaflora has already for years a social fund; of all certifications, they keep a small amount for the fund. A part of this fund is now used to include more smallholders in the certification. The arrangement is that Imaflora charges the smallholders only 10% of the costs of certification. The other 90% of certification costs are paid by the social fund.

After the arrangement, a group of approximately twenty smallholders of Misiones was working on the certification. They had received a discount of 90% on the costs of the certification process. However, the farmers did not believe that they just had to pay 10%; they thought that it was a trick to include them. So some farmers stopped attending the meetings. According to Moreira, the biggest barrier for farmers to get certified was not because of the money, but because of the lack of knowledge. For example, they do not understand how the ecosystem works or that non-potable water can make people sick. Since they do not have the knowledge, it is hard for them to understand why they should change their practices. They have been working in a certain way their whole life, why should they change it now?

However, as a result of the work of Solidaridad and the social fund, the first two groups consisting of only smallholders have been certified in January 2014. It is expected that after these two first groups, more groups with smallholders will be included in the future. According to Moreira, the factories do not appreciate the work of Solidaridad, as they think it gives them less power.

6.7.2 Price setting of tea

Other important assumptions of the effects of group certification are that it is assumed to generate social, economic and environmental benefits for farmers. Unfortunately, environmental effects were not investigated in this thesis. In the previous chapter the social and economic effect were shown. The results showed that group certification generated some social benefits for smallholders. However, economic benefits of group certification were barely visible. As the farmers did not perceive an improvement of their economic situation, this paragraph shows some important contextual aspects that may partly explain the invisibility of the expected economic effects. It also shows that the factory does not play only an important role on the selection for group certification, but it might also have an influence on the outcomes of certification.

During the interviews with the farmers, it was allowed to talk about all subjects, except for one: the price of tea. The price of tea is a sensitive subject at the tea factories of Misiones. To complete the research, it was recommended by Imaflora not to talk about it. Therefore, the farmers were never asked questions about this subject. However, many farmers started to talk about the price by themselves; they complained that the price of tea was too low or that the price changed about five times a year. Gradually it was explored why it was such a sensitive subject.

Many tea companies exist in Misiones. The largest five companies form a sort of 'club' together; they meet a few times a year and make agreements if necessary. This club is important for the price of the tea paid to the farmers.

Once a year, the government sets the price of tea, ensuing that the farmers receive a good price for their product. After this price setting, the club of five meets and they make a plan to change this price. In general, the price the governments sets, is used until the 31st of December, because after this date the government has holidays. During the holidays, in January and February, there is no government that can control the price of tea that the factories pay to the farmers. For this reason, the club of five can and will set the price for tea from the moment the holidays of the government start. This is of course a lower price than the price the government set. In March, the government returns from their holidays. However, after March the factories still do not pay the price that was set by the government. A reason for this is that factories say for example that the tea has poor quality, due to cold and rainy weather. This is an excuse of the factory, to not pay the set price, but a lower price. This means that in general, they do not pay the right price until May when the factories often agree to pay the set price again. However, from May to September the farmers work with yerba mate and not with tea, therefore no tea is being sold to the factories. In October and November the farmers start to work with tea again. However, in these months almost no tea is supplied as they usually cannot harvest it at those moments. In December, the summer starts and the harvests of tea become larger. In the end, December is the only month in which the farmers receive the price that is set by the government. In January, as the government starts its holidays again, the set price is not paid by the factories again and the cycle restarts (Moreira, personal communication 2013).

According to the farmers, the government set the price of tea last year at 0.54 pesos per kg, however at the time of the interviews the farmers received only 0.45 pesos per kg of tea. Certified farmers receive a premium of 0.03 pesos, if they deliver their tea to the contracted factory. According to the previous group administrator, this premium was just a small part of the money the factory received from Unilever. The rest of the money is spent in the factory to for example pay the engineers and the technicians. Unilever paid the costs for certification for those five large factories for a few years. Unfortunately, it was not transparent how much money the factories received from Unilever and how this money was divided. At the time of the interview, the factory did not receive any more money from Unilever, but the farmers still received a small premium from the factory. This was still a policy from the investigated factory, the policies differ per factory. For some farmers the premium stopped at the moment Unilever stopped paying the costs for certification to the five largest factories. Some farmers did not receive any premium at all, even when Unilever was paying the factory. According to Galuchi, these farmers received no premium, but instead received everything that was necessary to get certified, such as technical assistance, big bottles for the water, protection clothes etc. According to Galuchi, there were also farmers that did receive a premium. In this case the factory paid for services such as technical assistance, engineers and audits, these farmers did

have to pay for their own protection cloths etc. According to Moreira, all the factories provided and paid more or less the same services to the farmers for certification. However, the farmers that did not get a premium on their certified tea, also did not receive any extra equipment as stated by Galuchi. Unfortunately, it could not be checked what certified farmers of the other factories of the 'club of five' received.

As concluded in the previous chapter, on one hand group certification leads to increased knowledge of better agricultural practices and for a part of the farmers also to more efficient production. On the other hand, the better agricultural practices and the increased productivity are negated by keeping the price of tea artificially low. The low price that was set by a number of factories may have ensured that the economic effects of the certification for the farmers are barely visible. In an environment where the price setting is structured in such a way, it is difficult for smallholders to generate economic benefits out of the certification. A higher productivity can barely make a difference, if the prices are kept artificially low.

6.8. Conclusion

Based on the results of this chapter, it can be concluded that the major social effects of certification perceived to be increased knowledge level and taking care of the farmers' health. Unfortunately, economic effects were considered to be less present than social effects. Despite the use of better agricultural practices and increased productivity, farmers reported that their economic situation did not improve. Higher costs and the artificially low prices that were set by the largest factories might be important reasons why the economic effects of certification were barely visible when investigating the situation of the farmers. In addition, the assumption that group certification is an initiative to include smallholders cannot be confirmed. As RA certifies per farm instead of per farmer, it seems that there are many smallholders included in the group. However, in reality these farms belong to the factory or to medium- or large-scale farmers that own several farms. As a result, the participation of smallholders in group certification is relatively low.

D. Conclusion and Discussion

Chapter 7. Conclusion and discussion

7.1. Conclusion

This study aimed to generate insights on the effects of group certification on individual smallholders and to provide an understanding of the participation of smallholders in group certification.

The analysis on the effects of group certification was mainly based on the perceptions of certified tea farmers. Additional information was gathered during interviews with other important stakeholders and field observations. To measure changes over time, a pipeline approach was used, which is an evaluation design in which different generations of certified farmers and farmers that are not certified yet, but are scheduled to do so, are being compared with each other. However, comparing different generations proved not to be possible in this case study. During the interviews it was discovered that the majority of the farms that were selected to become certified were already certified before, therefore the results of the prospectively certified farmers were excluded from the analysis. As a result, no baseline information was available. A second bias arose when it was found out that farmers were selected for certification by best farming practices. Because of these biases different generations were not comparable. Although the pipeline approach did not work out as expected, with the recall added in the interviews it was possible to measure the social and economic effects of group certification on smallholders.

Another limitation of the study was the limited number of certified smallholders. Minus the prospectively certified farmers, results of 21 in-depth interviews with farmers that became certified over different years, were analyzed. Of the 21 certified farmers included in the case study, two thirds of the farmers were actually small-scale and one third were medium-scale farmers. As the majority of the investigated farmers were small-scale farmers, the study continued using this term. Besides the lack of smallholders, another limitation of the study was the difficulty for the farmers to quantify their answers. As a result, no absolute numbers on aspects such as production, costs or income were available. Therefore, the results of the interviews with the farmers are all based on their perceptions.

Taking into account aforementioned limitations it was still possible to interpret the results gathered for this study and thereby to generate insights on the effects of group certification. Analysis on the perceptions of the certified farmers showed that group certification barely contributed to the economic well-being of the certified farmers. Half of the farmers believed that their productivity has increased. However, 90% of the certified farmers believed that their economic situation did not change because of the certification. There are two major reasons why certified farmers barely perceived economical benefit to certification. First of all, 40% of the farmers perceived higher costs because of the certification. Secondly, it was found that minimum tea prices in Misiones are set by the government. However, the tea factories of Misiones did not comply with the price setting of the government. As a result, the largest tea factories of Misiones decided to set their own price, which is obviously lower than the price set by the government. This study argues that because of this artificially low price, farmers did not actually benefit from efficiency gains of production. This means that higher productivity could not improve the economic situation of the farmers. Noteworthy is that last year the tea harvests of the farmers were very poor. Therefore, it is possible that the farmers were more pessimistic about potential changes of their economic situation. This might have influenced the outcomes on the effects of certification.

As an oppose to the lack of economic benefits, the certified smallholders did perceive an improvement of their social well-being. Most farmers are not formally educated, therefore, the farmers believed that gaining knowledge on good agricultural practices was the most important contribution of the certification. The factory, who arranges the certification, organized meetings about better agricultural practices. In addition, technical assistances were available to help the farmers at the farm. Another important contribution, as perceived by the farmers, is that they take better care of their own health. Because of the certification the farmers gained knowledge about the risks of working with agrochemicals and other toxic substances. Besides responsible use of chemicals, since the certification the farmers know about the risks of drinking non-potable water. Moreover, all certified farmers need to have access to potable water and an annual health check is provided by the factory. The knowledge gained and the changing agricultural practices ensure that the farmers work safer and are more aware of the risks at the farms.

Besides the socioeconomic effects of the certification on smallholders, also the participation of smallholders in the certification was investigated. In this particular case study the factory organizes the certification, therefore it is also the factory that decides which farms become certified. Since the factory owns many farms, they prefer to certify their own farms first. To minimize the costs, medium- or large-scale farmers with best agricultural practices are next to become certified. Moreover, in the case study it was found that the certification is arranged per farm (or plot) and not per farmer. As each farm has to be certified separately, it seems on paper that the certified group includes many smallholders. However, when looking closer to the different farms, it can be seen that several farms are owned by one farmer and, thus, smallholders turn out to be medium- or sometimes even large-scale farmers. Although group certification is considered to increase the accessibility for smallholders, this study discovered that group certification remains focused on large-scale farmers, limiting the number of smallholders that participate in group certification. This result also explains why there were only a few certified smallholders available to interview for this study.

This study has shown that it cannot be assumed that group certification includes smallholders and that certification leads to social and economic benefits for the farmers. The case study showed that group certification remains focused on large-scale farmers. As a consequence, group certification reached only a limited number of smallholders. As a result of the certification this case study showed that certified smallholders perceived an improvement on their social well-being. Unfortunately, certified smallholders barely perceived an improvement on their economic well-being.

7.2. Discussion

7.2.1. Objectives

Besides generating insights on the social and economic effects of group certification on individual smallholders, this study wanted to contribute to the discussion whether group certification is capable of changing farming practices and increasing sustainable production. To comply with the standards for certification, the farmers had to change a number of farming practices. Some farmers reported that they had to change a lot and some just a few practices to become certified. In the results of this study an enumeration of the most important changes of the farmers are shown. In addition, most smallholders are not formally educated. Because of the certification, the farmers gained a lot of knowledge on good agricultural practices, thereby changing the way that the farmers work. The farmers stated that they take better care of the environment and of their health since they obtained

certification. As gradually more farmers become certified in the entire sector, this study concludes that group certification is capable of changing farming practices and to increase sustainable production.

A specific objective of this study is to support Imaflora in order to gain knowledge on the effectiveness of their strategy for the certification of farmers. This study has discovered that the group administrator, in this case study the factory, plays a major role in the certification and in the tea sector in Misiones in general. The factory decides, for example, what farms become certified; which farmers, when and how much tea can be delivered to the factory; and it decides the price the farmers receive for tea. The results of this thesis showed that the farmers did not experience an improvement of their economic situation, one of the reasons mentioned in this report is the low price of tea. If Imaflora wants to see more effects of the certification, a good strategy could be to revise the price setting process. It is after all quite remarkable that the five largest tea companies do not comply with the price setting of the government, but that they set their own (lower) price.

Another issue is the non-participation of smallholders in group certification. If the goal of group certification is to include more smallholders, Imaflora might reconsider the selection procedures of the farmers and the role of the group administrator in the certification process. As a matter of fact, also other arrangements can be considered to increase the participation of smallholders. Fortunately, it has been noticed that Imaflora is already aware of this issue, as Imaflora recently made an agreement with Solidaridad to include more smallholders. According to some key stakeholders, in January 2014 the first group of smallholders in Argentina became certified because of this agreement.

7.2.2. Impact studies

Chapter three shows a review of impact studies of certification. Only one study specifically dealt with the effects of group certification. The study investigated the effects of FSC group certification on smallholders. Although RA and FSC are not the same standards, they are more or less comparable as both are voluntary sustainability initiatives including mainly social and environmental standards. Because the study of Auer (2012) is focused on smallholders that are certified in a group, the first question that rises is: does the study actually deal with smallholders? A profile or definition of smallholders is not specifically mentioned in the study. However, it is stated that the land holdings of the farmers vary in size between 0.8 ha and 2 ha. Therefore it is assumed that the certified group and therefore the study of Auer includes smallholders. As an oppose to the study of Auer, the investigated group of this thesis existed mainly of medium- and large-scale farmers. However, the farmers that were interviewed for this thesis were mainly small-scale farmers (Auer, 2012).

The study of Auer (2012) presents several social and economic effects for the individual farmers such as increased household income from forestry, improvements in technical expertise and improvements in constructive partnerships. Some similarities are visible between the study of Auer and the results of this thesis. One similarity is that the technical expertise of the farmers increased; because of the certification the tea farmers gained more knowledge on good agricultural practices. The household income from forestry also increased. On one hand this is similar to the tea farmers as the income from tea production increased as well. On the other hand it is important to mention that the economic situation of the tea farmers did not improve since certification. Auer also mentioned improvements in constructive partnerships of the farmers with provincial forestry officials and

private sector partners. This thesis investigated the relation between the farmers and a private sector partner, namely the factory. Unfortunately, no similarities are found on this point, as the farmers had more contact with the factory, but the farmers did not perceive an improved relation with the factory (Auer, 2012).

All the other studies reviewed in *chapter three* also showed effects of certification, although these studies were not specifically focused on group certification. Most of the impact studies dealt with Fairtrade. Fairtrade is also a voluntary sustainability initiative, however, besides environmental and social standards, Fairtrade has a specific focus on the economic aspects. Therefore, as expected, most of the studies reviewed by Alvarez & Von Hagen (2011) showed positive economic effects of certification. Impacts on business opportunities for farmers were mainly positive, this included improved relationships with buyers, increased credit opportunities, better management and farming skills, technical assistance and improved market conditions. Unfortunately, the farmers in this thesis did not perceive an improved relationship with the buyers. In addition, the farmers did not have more outstanding loans since the certification. However, credit opportunities were not measured in this thesis. The other aspects, better management and farming skills, technical assistance and improved market conditions, are similar to the results of this thesis. In addition, most studies found positive effects on the farmers livelihoods, this included the total amount of food consumption, health, education and an increased value of household assets. Mixed results were found in gender aspects, which was the participation and decision-making of women in farmer activities. In this study the food consumption and education were not measured. Food consumption was not measured as most farmers produce their own food. Education was also not measured as most farmers did not have school-age children. The value of household assets did not increase according to the farmers. In addition, it is not measured if the health of the farmers improved, but according to the farmers they do take better care of their health. In addition, the farmers have an annual health check since the certification (Alvarez & Von Hagen, 2011).

These results show that there are some differences and similarities between the different studies reviewed by Alvarez & Von Hagen (2011). However, it is always difficult to compare studies, as each study uses different definitions for the investigated aspects. One example is the relationship with the buyer. According to the review of Alvarez & Von Hagen (2011), relationships with the buyers increased. However, it is not known what the exact definition of a relationship is. The fact that farmers have more contact with their buyers does not necessarily mean that the relationship has improved. In this case study the farmers have more contact with the buyers, however, the farmers did not perceive an improved relationship. This example shows that definitions or explanations are critical for enabling the comparison of the studies.

Noteworthy is that only some impact studies, included in the reviews mentioned in *chapter three*, found evidence of negative impacts of certification. Negative evidence was found on the net income of farmers, i.e. the costs of certification equaled or exceeded the benefits. Overall, the outcomes of the reviews show that the majority of the studies found positive effects. Also in this case study the overall outcomes were positive. Some farmers mentioned that they had to work harder. However, no further disadvantages of certification were mentioned (Alvarez & Von Hagen, 2011; Blackman & Rivera, 2010; Niggli et al., 2011; Chan & Pound, 2009:36)

7.3. Further research

7.3.1. Further impact research

This thesis provided useful insights on the effects of group certification. However, the results are based on just one group of certified farmers. Therefore, the results cannot be easily generalized. To draw general conclusions, more impact studies in different areas and of different crops are necessary.

Since comparing different generations proved not to be possible, some methodological lessons have been learned. A pipeline approach is a very interesting method, however some aspects are crucial. It is for example necessary that enough farmers of different generations, with more or less the same characteristics, are available. Therefore any impact study of certification should start with a sound profiling of the people that are concerned. In addition, it is important that the selection of the farmers for certification does not create a bias in the evaluation. It is significant that farmers are not being selected by best farming practices. To compare different generations, it is also important that a part of the information can be quantified, such as absolute numbers on production, costs or income.

Also some general methodological lessons have been learned. One of the most important aspect for doing research on the effects of group certification on smallholders is that the investigation needs to be on location. It is important for the understanding of the certification, the farmers and specifically the context. If this study would not have been on location, the important role of the factory in the selection of the farmers for certification and the determination of the tea prices would probably not have been discovered. These results also learned that it is important not only to measure the effects, but also to interpret the effects by investigating the context and mechanisms. Important aspects in the context, as learned by this study, are the investigation of property regimes and generating insights in the functioning of the tea market. This combination of measuring and investigating the context means that a balance needs to be found between the classical evidence based- and realistic evaluation.

Because of this thesis, it is also learned to be critical on the methodologies used in other studies. Many impact studies try to find effects by comparing certified with non-certified farmers. However, if farmers are being selected by best agricultural practices, this method would not make sense as a bias has been created. Therefore, also by using this method for measuring the effects of certification, it is crucial to investigate the selection procedures of the farmers for certification.

7.3.2. Further research topics

During the research some other interesting subjects were observed. This thesis mainly investigated the effects of certification on farmers. However, it is also interesting to investigate in greater depth what caused farmers to withdraw from the certification process or to lose their certification. Certification bodies might learn from this information and might adapt their strategies. Another observation that would be interesting for further investigation is the non-participation of smallholders in group certification. Do smallholders of other products, other countries or other certification initiatives participate in group certification or is it as well focused on large-scale farmers and farmers with best agricultural practices? This might be an interesting study and debate for further research on group certification.

A final interesting subject for research is which actors in the supply chain have most and least financial benefit from certification. As reported by the farmers, their economic situation hardly improved. Therefore it could be interesting to investigate whether the economic situation of the factory improved. After all, the largest tea factories received financial support from Unilever, to compensate the costs of certification for the first few years. Moreover, the factories paid a lower price to the farmers than that was set by the government. In line with this, it is also interesting to investigate whether the market share of Unilever's tea changed. As certification is a market tool, it can be expected that the market share of Unilever's tea has increased.

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Appendices

Appendix A. Overview of sustainability criteria per certification initiative

Environmental issues

	Initiative	FLO	UTZ	SAI	FSC	RA	IF	SFI	4C	GL	PEFC
Issue							OAM			gap	
Overall environmental issues		2.3	1.7	0	2.6	2	2.9	1.8	1.2	1.3	0.9
2. On-site envrionmental issues											
Soil	Conservation/erosion	5	3	0	5	1	5	5	2	1	5
	Quality	5	3	0	5	1	5	5	0	1	0
Synthetic Inputs	Complete prohibition	0	0	0	1	0	5	0	0	0	0
	Prohibited List	5	5	0	5	5	5	0	5	5	0
	IPM/ICN	1	3	0	5	5	5	5	1	5	0
GMO Prohibition	GMO Prohibition	3	0	0	5	5	5	0	1	0	0
Humane treatment of animals		1	0	0	0	0	5	0	0	0	0
3. Off-site community areas											
Biodiversity	Flora density/diversity	1	0	0	5	0	0	5	2	1	5
	Habitat set asides	0	0	0	5	4	1	5	0	1	5
	Land conversion	3	0	0	5	5	5	0	1	0	0
4. Off-site externalities											
Waste	Use/management	5	0	0	5	1	5	5	2	1	0
	Disposal	5	0	0	5	1	5	0	2	1	5
	Pollution	5	5	0	1	1	5	0	0	5	0
Water	Dependencies	1	5	0	0	0	1	0	0	3	0
	Use/management	1	3	0	5	3	5	5	2	1	0
	Reduce	1	2	0	0	3	1	5	2	3	0
	Disposal	5	5	0	0	5	0	0	2	0	0
Energy use/management	Energy use/management	1	3	0	0	0	0	0	2	1	0
	Reduce	1	0	0	0	3	0	0	2	0	0
Greenhouse gas	Emissions measured	0	0	0	0	0	0	0	0	0	0
	GHGs	0	0	0	0	0	0	0	0	0	0
	Soil	1	0	0	0	0	0	0	0	0	0

Source: Potts et al. (2010). Explanation of the numbers: 0=No requirements; 1=Recommended; 2=Required as a long-term objective; 3=Required in less than 3 years; 4=Threshold; 5=Critical.

Social and economic issues

	Initiative	FLO	UTZ	SAI	FSC	RA	IF	SFI	4C	GL	PEFC
Issue							OAM			gap	
Overal societal		3.9	3.2	3.7	1.6	2	1.1	1.8	1.8	1.4	1.5
5. Income and poverty											
Minimum Wage		5	5	5	5	3	0	5	2	0	0
Living Wage		5	0	0	0	0	0	0	0	0	0
Price premium		5	3	0	0	0	0	0	0	0	0
Employment benefits	Leave days (incl. maternity leave)	5	3	3	0	4	1	0	0	0	0
	Pensions and security benefits	2	0	3	0	0	1	0	0	0	0
6. Labor conditions											
ILO Core Conventions	Equal Remuneration	5	5	5	5	5	1	5	2	0	5
	Freedom of Association	5	5	5	5	1	5	5	5	0	5
	Collective Bargaining at Work	5	5	5	5	1	5	5	2	0	5
	No discrimination at work	5	5	5	5	5	5	5	2	0	5
	No forced labour	5	5	5	5	5	5	5	5	0	5
	Worst forms of child labour	5	5	5	5	5	5	5	5	0	5
	Minimum Age	5	5	5	5	5	0	5	5	0	5
Gender	Gender governance	1	0	0	0	0	0	0	0	0	0
	Women's labour rights	1	5	5	0	0	0	0	0	0	0
	Women's health & safety	1	5	5	0	0	0	0	0	0	0
Workers'	Safety at work	5	2	5	5	3	0	5	2	5	5
Health and safety	Healthy work conditions	5	5	5	0	3	0	0	2	5	0
	Access safe drinking water	5	2	5	0	4	1	0	5	5	0
	Access sanitary facilities at work	5	2	5	0	3	0	0	2	5	0
	Access medical ass./insurance	5	5	5	0	3	0	0	0	0	0
	Training on site	5	5	5	5	3	0	5	2	5	5
7. Labour and tenure security											
Employment conditions	Contract labour	5	2	5	0	1	0	0	0	0	0
	Transparency employment practices	5	3	5	0	1	0	0	2	5	0
	Written contracts	5	3	5	0	1	0	0	2	5	0
	Timely payment of wages	5	3	5	0	1	0	0	0	5	0
	Maximum # of working hours	5	3	0	0	4	0	0	0	0	0
	Physical violence, intimidation	5	5	3	0	3	0	5	5	0	0
8. Social											
UN Declarations	Education	1	1	5	0	1	1	0	2	0	0
	Medical care	1	5	5	0	1	1	0	0	1	0
	Housing and sanitary facilities	1	3	5	0	1	1	0	5	3	0
Community involvement	Community consultation	0	0	1	5	1	0	5	0	0	5
	Local Hiring and Purchasing	0	0	0	1	1	0	0	0	0	0
9. Market position											
Written contracts between buyers and sellers		5	0	0	0	0	0	0	1	0	0
Product quality requirements		5	5	0	0	0	5	0	2	5	0
Overall		3.3	2.6	2.3	2.0	2.0	1.8	1.8	1.5	1.4	1.3

Source: Potts et al. (2010). Explanation of the numbers: 0=No requirements; 1=Recommended; 2=Required as a long-term objective; 3=Required in less than 3 years; 4=Threshold; 5=Critical.

Appendix B. Questions for certified tea farmers Aristóbulo del Valle / Campo Grande

Remark: the questions in the interviews with certified farmers and farmers that will become certified were more or less similar. In addition, to be sure the farmer understood the questions and to be sure the interviewer understood the farmers, often more questions were added to this list. As in the case of question C.1.c: the accessibility of drinkable water. Often was asked if they had drinkable water. Then was asked where the water came from. Then it was asked if the water was analyzed on its quality. After that it was asked if the results showed if the water was potable. After that it was asked where the water was used for etc.

General data

Date _____
Location (city, region) _____
Identification code of the farm _____
Name of the respondent _____

A. Certification

1. In what year did you become RA certified? _____

2. What was at THAT moment the most important reason to become certified? _____
_____

3. Did you have to change your agricultural practices BEFORE certification? IF YES, in what areas? What was easy, what was difficult or impossible? _____
_____

4. Did you have to change your agricultural practices AFTER certification? IF YES, in what areas? What was easy, what was difficult or impossible? _____
_____

5. What has been the biggest barrier to become certified? _____
_____

6. How did you receive assistance or how did you gain knowledge BEFORE certification? _____
_____

7. How did you gain knowledge about agricultural practices AFTER being certified? _____
_____

8. Do you have other certifications? IF YES, what certifications and since when? _____
_____

B. Farm (if the farmers do not know the exact answers, ask the farmers if and how it has changed (in percentages) over the years?)

1. What are currently the characteristics of your farm in terms of:

a) How many ha of land do you have in total and how many are used for tea production? Did this change since the certification? If yes, how? _____
b) What is the volume of tea production in kg. at your farm from last year? _____
c) Did the productivity change since the certification? If yes, how? _____
d) Did the amount of money that you receive from tea change since the certification? If yes, how? _____
e) What are the main production costs, did these costs change since the certification? If yes, how? _____

2. How do you compare the current quality of the tea with the time before certification? _____
_____

3. What transportation assets and machines do you have? Did this change since the certification, if yes, how? _____

4. How many permanent workers do you have? If yes, what is their salary? _____

5. Did the income of other agricultural activities changed since the certification? If yes, how? _____
_____

6. Do you have a loan? If yes, where? Bank/ the factory / Feria Franca / other? Did this amount changed since the certification? _____

7. Do you have savings? If yes, how did the amount of your savings changed since the process of certification? _____

8. Do you feel less, the same or safer (in terms of risks) when working on the farm since you became certified? Why? _____

9. Do you think or do you feel the image of farmers has changed since the certification? IF YES, how?
_____

10. Has the relationship between the farmers and the company changed since the process of certification? IF YES, how? _____

11. How do you compare the current inclusion of women in the farm practices and decision making with the time before you became certified? _____

12. To which category do you currently classify your farm and which was it before certification?

- very small farm
- small farm
- medium farm
- big farm
- very big farm

13. To what extent do you think the changes as mentioned in the questions above are the result of the group certification? _____

C. Household

1. What characterizes your house currently and how was it before certification? If any change, to what extent do you think it is a result of the group certification?

a. What is the total number of people living in your house? _____
b. What is the number of rooms in the house? _____
c. Do you have access to drinkable water in the house? _____
d. Do you have a toilet in the house? _____
e. Do you have a shower in the house? IF YES, with hot water? _____
f. What is the structure of the wall of your house?
   ○ brick ○ brick and wood ○ full wood ○ other, specify _____
g. Do you have electricity? IF YES, what electrical appliance do you own?
   ○ TV (colored or not?) ○ electric or gas cooker
   ○ fridge ○ microwave
   ○ washing machine ○ radio
   ○ telephone ○ freezer
   ○ computer (+ internet?) ○ other, specify _____

2. How was and is the status of your house? What are the main things that changed in the house since the certification? _____

3. How many times do the persons of your household approximately have a health check? Is this the same as before the certification? _____

4. How many times do the persons of your household approximately go to a dentist? Is this the same as before the certification? _____

5. To which (economic) category do you currently classify your household? Is this the same as before the certification?

○ very poor ○ poor ○ not so poor ○ a little bit rich ○ rich ○ very rich

6. To what extent and for which aspects (house and health) do you think the changes in your home and household are the result of the group certification? _____

Overall questions

1. Did certification have a positive, negative or no change in your life? Please explain. _____
_____

2. What are for you the two main advantages of certification? _____
_____

3. What are for you the two main disadvantages of certification? _____
_____

4. What are the two main advantages of being certified in group? _____
_____

5. What are the two main disadvantages of being certified in a group? _____
_____

6. Do you think certification is important, why and what is important? _____
_____

7. Are there aspects of the certification that before certification you thought they were not important, but now you do think they are important? _____
_____

8. What improvements / changes would you like to see in the certificate? _____
_____

Appendix C. List of interviewees

#	Interviewed institution	Name	description	Date
1.	Imaflora	Luís Fernando Guedes Pinto	Executive director	20-06-2013 and other data
2.	Imaflora	Tharic Pires Dias Galuchi	Certification Coordinator	25-06-2013 and other data
3.	GAP-GMP-HACCP-Sustainable Agriculture	José Eduardo Moreira	Technical Consultant and former group administrator of the factory	29-09-2013 and other data
4.	Tea factory	X	Current group administrator	17-07-2013 and other data
5.	Tea factory	X	Technical assistant in hygienic and security	10-07-2013 until 19-07-2013
6.	Tea factory	X	Technical assistant in safety and garbage management	10-07-2013 until 19-07-2013
7.	Farmer 1	X	Farmer certified in 2008	11-07-2013
8.	Farmer 2	X	Farmer certified in 2008	11-07-2013
9.	Farmer 3	X	Farmer certified in 2008	11-07-2013
10.	Farmer 4	X	Farmer certified in 2008	15-07-2013
11.	Farmer 5	X	Farmer certified in 2008	15-07-2013
12.	Farmer 6	X	Farmer certified in 2008	17-07-2013
13.	Farmer 7	X	Farmer certified in 2009	11-07-2013
14.	Farmer 8	X	Farmer certified in 2009	15-07-2013
15.	Farmer 9	X	Farmer certified in 2009	16-07-2013
16.	Farmer 10	X	Farmer certified in 2009	19-07-2013
17.	Farmer 11	X	Farmer certified in 2009	19-07-2013
18.	Farmer 12	X	Farmer certified in 2010	12-07-2013
19.	Farmer 13	X	Farmer certified in 2010	15-07-2013
20.	Farmer 14	X	Farmer certified in 2010	16-07-2013
21.	Farmer 15	X	Farmer certified in 2010	17-07-2013
22.	Farmer 16	X	Farmer certified in 2010	18-07-2013
23.	Farmer 17	X	Farmer certified in 2010	18-07-2013

24.	Farmer 18	X	Farmer certified in 2012[10]	15-07-2013
25.	Farmer 19	X	Farmer certified in 2012	16-07-2013
26.	Farmer 20	X	Farmer certified in 2012	17-07-2013
27.	Farmer 21	X	Farmer certified in 2012	17-07-2013
28.	Farmer 22	X	Farmer that becomes certified in 2013/2014	12-07-2013
29.	Farmer 23	X	Farmer that becomes certified in 2013/2014	18-07-2013
30.	Farmer 24	X	Farmer that becomes certified in 2013/2014	18-07-2013
31.	Farmer 25	X	Farmer that becomes certified in 2013/2014	18-07-2013
32.	Farmer 26	X	Farmer that withdrew or lost the certification	18-07-2013
33.	Farmer 27	X	Farmer that withdrew or lost the certification	18-07-2013

[10] In 2011 no farmers have been certified, therefore no farmers have been interviewed of that year.

Appendix D. Sustainable Agricultural Standards (July 2010, version 2)

All criteria are available at www.sanstandards.org. Source: SAN (2010).

1. SOCIAL AND ENVIRONMENTAL MANAGEMENT SYSTEM

1.1 The farm must have a social and environmental management system according to its size and complexity of its operations that contains the necessary policies, programs and procedures that prove compliance with this standard and respective national legislation binding for social, labour and environmental aspects on farms – whichever is stricter.

1.2 The farm must implement permanent or long-term activities to comply with the standard through various programs. Social and environmental management system programs must consist of the following elements:

a. Short-, medium- and long-term objectives and goals.
b. A list of activities to be conducted in each program, and a timeline or plan indicating when they will be implemented.
c. Identification of the persons responsible for carrying out the activities.
d. Policies and procedures established to guarantee efficient execution of the activities and compliance with the standard.
e. Maps identifying the projects, infrastructure and special areas (for conservation and protection) related to the indicated activities or to the requirements of this standard.
f. Records to demonstrate the program is functioning adequately.

1.3 The farm's upper management must demonstrate a commitment to certification and to complying with the requirements stipulated in the standard and by law. The management must also be familiar with and endorse the system and its programs and support its execution by providing the necessary resources.

1.4 The objectives and a summary of the social and environmental management system and its programs must be available and made known to workers.

1.5 The farm must keep in its offices or facilities all documentation and records created for the social and environmental management system, as well as documents proving compliance with the standard, for at least three years or for the alternative time indicated in this standard. These documents must be readily available to the persons responsible for carrying out the social and environmental management plan's various programs and activities.

1.6 The potential social and environmental impacts of new works or activities must be evaluated. These include the expansion of production areas, the construction or installation of new infrastructure, or major changes in production or processing systems. The evaluation must be carried out before the initiation of any changes or new work in accordance with applicable laws or, in their absence, based on technically accepted and recognized methods. Any evaluation must include procedures for monitoring and evaluating the significant impacts identified and not foreseen during the development of new works or activities.

1.7 The farm must have the necessary processes for follow up, measurement and analysis, including that of claims by workers or other persons or groups, to evaluate the functioning of the social and environmental management system and farm compliance with applicable laws and the standard. The results of these processes must be recorded and incorporated into the social and environmental management system through a continual improvement plan and program. The continual improvement program must include the necessary corrective actions to rectify non-compliance situations, as well as the mechanisms needed to determine if the actions are implemented and if they result in improvements or need to be adjusted to produce the desired results.

1.8 The farm's service providers must commit to complying with the environmental, social and labour requirements of this standard, not only while operating on the farm, but also for any outside activities related to the services provided. The farm must have mechanisms for evaluating its service providers and checking that they are complying with this standard. The farm must not use the services of suppliers or contractors that do not comply with the social, labour and environmental requirements of this standard.

1.9 The farm must implement a training and education program in order to guarantee the effective execution of the social and environmental management system and its programs. The training topics must be identified according to the standard, the position, and type of work carried out. Records must be kept that include the participants' signatures, topics covered and the instructor's name for each training or educational event. The required training must be paid as part of the normal workday.

1.10 *Critical Criterion.* The farm must have a system for avoiding the mixing of certified products with non-certified products in its facilities, including harvesting, handling, processing and packaging of products, as well as transportation. All transactions involving certified products must be recorded. Products leaving the farm must be duly identified and accompanied with the relevant documentation indicating a certified farm as origin.

1.11 The farm must annually describe its energy sources and the amount of energy used from each source for production processes, transport and domestic use within the farm limits. The farm must have an energy efficiency plan with goals and implementation activities for increased efficiency, for reducing dependency on non-renewable sources and for increasing the use of renewable energy. Where appropriate, the use of on-farm energy sources must be preferred.

2. ECOSYSTEM CONSERVATION

2.1 *Critical Criterion.* All existing natural ecosystems, both aquatic and terrestrial, must be identified, protected and restored through a conservation program. The program must include the restoration of natural ecosystems or the reforestation of areas within the farm that are unsuitable for agriculture.

2.2 *Critical Criterion.* From the date of application for certification onwards, the farm must not destroy any natural ecosystem. Additionally, from November 1, 2005 onwards no high value ecosystems must have been destroyed by or due to purposeful farm management activities. If any natural ecosystems have been destroyed by or due to purposeful farm management activities between November 1, 1999 and November 1, 2005, the farm must implement the following analysis and mitigations:

a. Conduct an analysis of the ecosystem destruction to document the scope and ecological impact of the destruction.
b. Develop a mitigation plan with advice from a competent professional that is consistent with applicable legislation and that compensates for the negative impact.
c. Implement the activities of this mitigation plan, including for example the set aside of a significant percentage of the farm area for conservation purposes.

2.3 Production areas must not be located in places that could provoke negative effects on national parks, wildlife refuges, biological corridors, forestry reserves, buffer zones or other public or private biological conservation areas.

2.4 The harvesting or other taking of threatened or endangered plant species is not permitted. Cutting, extracting or harvesting trees, plants and other non-timber forest products is only allowed in instances when the farm implements a sustainable management plan that has been approved by the relevant authorities, and has all the permits required by law. If no applicable laws exist, the plan must have been developed by a competent professional.

2.5 There must be a minimum separation of production areas from natural terrestrial ecosystems where chemical products are not used. A vegetated protection zone must be established by planting or by natural regeneration between different permanent or semi-permanent crop production areas or systems. The separation between production areas and ecosystems as defined in Annex 1 must be respected.

2.6 Aquatic ecosystems must be protected from erosion and agrochemical drift and runoff by establishing protected zones on the banks of rivers, permanent or temporary streams, creeks, springs, lakes, wetlands and around the edges of other natural water bodies. Distances between crop plants and aquatic ecosystems as indicated in Annex 1 must be respected. Farms must not alter natural water channels to create new drainage or irrigation canals. Previously converted water channels must maintain their natural vegetative cover or, in its absence, this cover must be restored. The farm must use and expand vegetative ground covers on the banks and bottoms of drainage canals.

2.7 The farm must establish and maintain vegetation barriers between the crop and areas of human activity, as well as between production areas and on the edges of public or frequently traveled roads passing through or around the farm.

These barriers must consist of permanent native vegetation with trees, bushes or other types of plants, in order to promote biodiversity, minimize any negative visual impacts and reduce the drift of agrochemicals, dust and other substances coming from agricultural or processing activities. The distance between the crop plants and areas of human activity as defined in Annex 1 must be respected.

2.8 Farms with agroforestry crops located in areas where the original natural vegetative cover is forest must establish and maintain a permanent agroforestry system distributed homogenously throughout the plantations. The agroforestry system's structure must meet the following requirements:

a. The tree community on the cultivated land consists of minimum 12 native species per ha on average.
b. The tree canopy comprises at least two strata or stories.
c. The overall canopy density on the cultivated land is at least 40%.

Farms in areas where the original natural vegetation is not forest – such as grasslands, savannas, scrublands or shrublands - must dedicate at least 30% of the farm area for conservation or recovery of the area's typical ecosystems. These farms must implement a plan to establish or recover natural vegetation within ten years.

2.9 The farm must implement a plan to maintain or restore the connectivity of natural ecosystems, within its boundaries, considering the connectivity of habitats at the landscape level; e.g. through elements such as native vegetation on roadsides and along water courses or river banks, shade trees, live fences and live barriers.

3. WILDLIFE PROTECTION

3.1 An inventory of wildlife and wildlife habitats found on the farm must be created and maintained.

3.2 Ecosystems that provide habitats for wildlife living on the farm, or that pass through the farm during migration, must be protected and restored. The farm takes special measures to protect threatened or endangered species.

3.3 *Critical Criterion.* Hunting, capturing, extracting and trafficking wild animals must be prohibited on the farm. Cultural or ethnic groups are allowed to hunt or collect fauna in a controlled manner and in areas designated for those purposes under the following conditions:

a. The activities do not involve species in danger of or threatened with extinction.
b. There are established laws that recognize the rights of these groups to hunt or collect wildlife.
c. Hunting and collection activities do not have negative impacts on the ecological processes or functions important for agricultural and local ecosystem sustainability.
d. The long-term viability of the species' populations is not affected.
e. These activities are not for commercial purposes.

3.4 The farmer must keep an inventory of the wild animals held in captivity on the farm, and implement policies and procedures to regulate and reduce their tenancy. Endangered or threatened species must not be held in captivity.

3.5 The farm is allowed to breed wild animals in captivity when the farm has the required conditions and the permits stipulated by law. These activities must be supervised by a competent professional.

3.6 Farms that reintroduce wildlife into natural habitats must have the appropriate permit from the relevant authorities and comply with the conditions established by law, or reintroduce the animals via duly authorized and established programs. A competent professional must advise the farm on release practices. Exotic wildlife must not be introduced into the farm.

4. WATER CONSERVATION

4.1 The farm must have a water conservation program that ensures the rational use of water resources. The program activities must make use of the best available technology and resources. It must consider water re-circulation and reuse, maintenance of the water distribution network and the minimizing of water use. The farm must keep an inventory and indicate on a map the surface and underground water sources found on the property. The farm must record the annual water volume provided by these sources and the amount of water consumed by the farm.

4.2 All surface or underground water exploited by the farm for agricultural, domestic or processing purposes must have the respective concessions and permits from the corresponding legal or environmental authorities.

4.3 Farms that use irrigation must employ mechanisms to precisely determine and demonstrate that the volume of water applied and the duration of the application are not excessive or wasteful. The farm must demonstrate that the water quantity and the duration of the application are based on climatic information, available soil moisture, and soil properties and characteristics. The irrigation system must be well designed and maintained so that leakage is avoided.

4.4 The farm must have appropriate treatment systems for all wastewaters it generates. The treatment systems must comply with applicable national and local laws and have the respective operating permits. There must be operating procedures for industrial wastewater treatment systems. All packing plants must have waste traps that prevent the discharge of solids from washing and packing into canals and water bodies.

4.5 *Critical Criterion.* The farm must not discharge or deposit industrial or domestic wastewater into natural water bodies without demonstrating that the discharged water complies with the respective legal requirements, and that the wastewater's physical and biochemical characteristics do not degrade the receiving water body. If legal requirements do not exist, the discharged wastewater must comply with the following minimum parameters:

Water Quality Parameter	**Value**
Biochemical Oxygen Demand ($DBO_{5, 20}$)	Less than 50 mg/L
Total suspended solids	
pH	Between 6.0 – 9.0
Grease and oils	Less than 30 mg/L
Fecal coliforms	Absent

The mixing of wastewater with uncontaminated water for discharge into the environment is prohibited.

4.6 Farms that discharge wastewater continuously or periodically into the environment must establish a water-quality monitoring and analysis program that takes into account potential contaminants and applicable laws. The program must indicate the wastewater sampling points and frequency and the analyses to be carried out. A legally accredited laboratory must conduct all analyses. Laboratory results must be kept on the farm for at least three years. The program must comply with the following minimum requirements for analysis and sampling:

Water Quality Parameter	**Waste discharge rate (cubic meters/day)**		
	Less than 50	**50 to 100**	**More than 100**
	Sampling Frequency		
Biochemical Oxygen Demand ($DBO_{5, 20}$)	Annual	Half-yearly	Every three months
Total suspended solids	Monthly	Weekly	Daily
pH			
Grease and oils	Annual	Half-yearly	Every three months
Fecal Coliforms			

4.7 *Critical Criterion.* The farm must not deposit into natural water bodies any organic or inorganic solids, such as domestic or industrial waste, rejected products, construction debris or rubble, soil and stones from excavations, rubbish from cleaning land, or other materials.

4.8 The farm must restrict the use of septic tanks to the treatment of domestic wastewater (grey water and sewage) and non-industrial wastewater to prevent negative impacts on underground or surface water. The tanks and their drainage systems must be located in soils suitable for this purpose. Their design must coincide with the volume of wastewater received and treatment capacity, and must permit periodic inspections. Wastewater from the washing of machinery used for agrochemical applications must be collected and must not be mixed with domestic wastewater or discharged to the environment without previous treatment.

4.9 If total or partial compliance with the requirements of this standard that relate directly or indirectly to the contamination of natural water bodies cannot be proven, the farm must conduct a surface-water quality monitoring and analysis program. The program must indicate the sampling points and frequency, and must be continued until it can be proven that farm activities are not contributing to the degradation of the quality of the receiving water bodies. This does not exclude monitoring and water-analysis obligations stipulated by law or as indicated by local authorities. At a minimum, the following analyses must be conducted:

Parameter	**Sampling Time**
Suspended solids	During the rainiest month of the year.
Total nitrogen	
Phosphorus compounds	
Specified pesticides	Immediately following the end of the pesticide application re-entry period.

Additional analyses may be required as a result of the types of contamination identified during the audit.

5. FAIR TREATMENT AND GOOD WORKING CONDITIONS FOR WORKERS

5.1 The farm must have a social policy that declares its commitment to complying with labour laws and international agreements indicated in this standard. The policy must summarize the rights and responsibilities of the administration and workers, with emphasis on labour aspects, living conditions, basic services, occupational health and safety, training opportunities and community relations. The social policy must be approved by the farm's upper management and be divulged and made completely known and available to the farm's workforce.

5.2 *Critical Criterion.* The farm must not discriminate in its labour and hiring policies and procedures along the lines of race, color, gender, age, religion, social class, political tendencies, nationality, union membership, sexual orientation, civil status or any other motive as indicated by applicable laws, ILO Conventions 100 and 111, and this standard. The farm must offer equal pay, training and promotion opportunities and benefits to all workers for the same type of work. The farm must not influence the political, religious, social or cultural convictions of workers.

5.3 The farm must directly hire its workforce, except when a contractor is able to provide specialized or temporary services under the same environmental, social and labour conditions required by this standard. The farm must not establish relations or contracts with third parties, form or directly participate in employee-owned companies, or use other mechanisms to avoid the direct hiring of workers and the obligations normally associated with labour contracts. Employment of foreign workers must be subject to a work permit issued by the competent government agency. The farm must not ask for money from workers in return for employment.

5.4 The farm must have payment policies and procedures that guarantee the complete payment of workers on the dates agreed upon in the labour contract. Payment must take place at the workplace, or by another arrangement agreed upon by the worker. The farm must provide the worker with a detailed and comprehensive explanation of the salary paid and of any deductions made, allowing the worker to appeal in the case of perceived discrepancies. Farms with ten or more full or part-time permanent employees must maintain an up-to-date written payroll and job description for each employee with the following information, which employees must have access to:

a. Worker's name, national identity card number, and position.
b. Job description and assigned salary.
c. Minimum salary established by the government according to the type of activity.
d. Weekly working hours established by applicable laws for the type of activity, and a comparison with the number of hours assigned each worker.
e. Job requirements, for example, training or special skills.
f. Payment dates.
g. Gross pay for normal hours.
h. Gross pay for overtime.
i. Total pay: normal and overtime.
j. Legal deductions and other deductions agreed upon by the worker.
k. Net pay.

5.5 *Critical Criterion.* Workers must receive pay in legal remuneration greater than or equal to the regional average or the legally established minimum wage, whichever is greater, according to their specific job. In cases where the salary is negotiated through collective bargaining or other pact, the worker must have access to a copy of this document during the hiring process. For production, quota or piecework, the established pay rate must allow workers to earn a minimum wage based on an eight-hour workday under average working conditions, or in cases where these conditions cannot be met.

5.6 Working hours, rest periods during the workday, the number of annual paid vacation days, holidays, and rest days must comply with current labour laws and with the following minimum conditions:

a. The maximum number of hours worked per week must not exceed 48.
b. Workers must have a minimum of 24 consecutive hours rest (one day off) for every six consecutive days worked.
c. All workers must have the right to annual paid vacation equivalent to a minimum of one day for each month worked (12 days or 2 work weeks per year) or the equivalent for part-time workers.

These rights and benefits must be made known to the workers and included in any labour contract or collective agreement.

5.7 All overtime must be voluntary. The farm must have policies and procedures relating to the requirements and assignation of overtime that conform to current labour laws. These policies and procedures must be made known to workers when they are hired. Overtime must not exceed 12 hours per week. Overtime hours must be paid at a higher rate than normal working hours. When current labour laws permit, this standard allows for an exception period during which the maximum 60 hours (48 normal hours plus 12 overtime hours) per week can be exceeded during seasonal activities or due to unforeseen circumstances, under the following conditions:

a. Workers must get at least one day off (24 consecutive hours) for every six consecutive days worked.
b. The farm must document the number of hours worked (regular and overtime) per day and the activities carried out for each worker.
c. The farm must demonstrate through a comparative analysis that overtime hours during the exception period do not result in a higher accident rate than during normal working periods.
d. The exception period must not exceed two consecutive work weeks or six work weeks within a two-month period. The average hours worked per week must not exceed 60 hours as calculated during an eight-week period starting from the first day of the exception period.
e. No more than two exception periods are allowed each year.
f. Workers are not allowed to work more than 12 hours per day.
g. In the case of an unforeseen event that causes employees to work more hours than permitted by this standard or applicable labour laws, the farm must document the circumstances and the actions to be taken to avoid repetition in the future.
h. In the case of a cyclical event that happens at approximately the same time each year, such as harvesting or production peaks, the farm must present an analysis that indicates that the cost of directly contracting more workers during this period would have a negative impact on the farm's economic sustainability.

5.8 *Critical Criterion.* It is prohibited to directly or indirectly employ full- or part-time workers under the age of 15. In countries where the ILO Conventions have been ratified, the farm must adhere to Convention 138, Recommendation 146 (minimum age). Farms contracting minors between the ages of 15 and 17 must keep a record of the following information for each minor:

a. First and last name.
b. Date of birth (day, month and year).
c. First and last name of parents or legal guardian.
d. Place of origin and permanent residence.
e. Type of work carried out on the farm.
f. Number of hours assigned and worked.
g. Salary received.
h. Written authorization for employment signed by parents or legal guardian.

Workers between 15 and 17 years old must not work more than eight hours per day or more than 42 hours per week. Their work schedule must not interfere with educational opportunities. These workers must not be assigned activities that could put their health at risk, such as the handling and application of agrochemicals or activities that require strong physical exertion.

5.9 When applicable laws permit, minors between 12 and 14 years old may work part-time on family farms, only if they are family members or neighbors in a community where minors have traditionally helped with agricultural work. The schedule for these minors including school, transportation and work must not exceed ten hours on school days or eight hours on non-school days, and must not interfere with educational opportunities. The following conditions must be fulfilled:

a. These workers must have the right to one rest day for every six days worked and rest breaks during the workday the same as or more frequently than contracted workers.
b. They must not form part of the farm's contracted workforce.
c. They must not work at night.
d. They must not handle or apply agrochemicals or be in areas where they are being applied.
e. They must not carry heavy loads nor do work that requires physical exertion unsuitable for their age.
f. They must not work on steep slopes (more than 50% incline) or in high places (ladders, trees, roofs, towers or similar places).
g. They must not operate or be near heavy machinery.
h. They must not do any type of work that may affect their health or safety.
i. They must get periodical training for the work they do.
j. They must be under the supervision of a responsible adult in order to guarantee that they understand how to do their work safely.
k. Transportation must be provided to and from home if workers have to travel in the dark or in conditions that put their personal safety at risk.

5.10 *Critical Criterion.* Any type of forced labour is prohibited, including working under the regimen of imprisonment, in agreement with International Labour Organization (ILO) Conventions 29 and 105 and national labour laws. The farm does not withhold any part or all of workers' salaries, benefits or any rights acquired or stipulated by law, or any of the workers' documents, in order to force them to work or stay on the farm, or as a disciplinary action. The farm does not use extortion, debt, threats or sexual abuse or harassment, or any other physical or psychological measure to force workers to work or stay on the farm, or as a disciplinary measure.

5.11 The farm and supervisors must not threaten, sexually abuse or harass, or verbally, physically or psychologically mistreat workers for any reason. The farm must encourage the respectful treatment of workers and have a formal mechanism to act upon workers' claims of mistreatment.

5.12 Workers must have the right to freely organize and voluntarily negotiate their working conditions in a collective manner as established in ILO Conventions 87 and 98. The farm must have and divulge a policy guaranteeing this right and must not impede workers from forming or joining unions, collective bargaining or organizing for ideological, religious, political, economical, social, cultural or any other reasons. The farm must periodically provide opportunities for workers to make decisions regarding their rights and alternatives to form any type of organization for negotiating their working conditions.

5.13 The farm must inform permanent and regular seasonal workers - and the workers organizations that represent them - of any plans for changes in farm management activities or organizational structure with potentially significant social, environmental and economic effects.

a. Workers who will be replaced by the use of machines or for any other reason due to significant changes in farm management activities or organizational structure must be given priority consideration for opportunities to be contracted in other labour on the farm and must be trained for those new tasks.
b. In confirmed cases of job loss and lack of employment opportunities, the farm must provide economic compensation for workers according to national labour legislation. In the absence of national legislation, the labour contract for permanent or seasonal workers must include a severance provision.

5.14 Housing provided by the farm for permanent or temporary workers living there must be well-designed, built and maintained to foster good hygienic, health and safety conditions. Living quarters must be separated from production areas. The farm must seek alternatives for relocating housing or camps that are currently within production areas. Workers and their families living on the farm must have access to recreation areas according to the composition of inhabitants. The design, size and construction of dormitories, barracks and other housing, type and quantity of furniture, and number and location of sanitary facilities, showers, and washing and cooking areas must comply with applicable laws. In absence of applicable laws the following elements and characteristics apply:

a. The dormitories must be constructed with wooden floors above the ground or floors made from asphalt or concrete, roofs in good condition without leaks, and with appropriate ventilation and lighting.
b. The ceiling must not be lower than 2.5 meters at any point.
c. Five square meters of space per person in sleeping areas.
d. Heating for cold climates.
e. Bed, hammock or other dignified infrastructure for sleeping according to the workers' cultural needs, at least 20 centimeters above the ground. The space in between bunk beds is greater than or equal to 120 centimeters and 90 centimeters between each bed.
f. Basic furniture for storing personal belongings.
g. The sanitary facilities must comply with the following characteristics: one toilet for every 15 persons; one urinal for every 25 men; sufficient supply of toilet paper; a minimum distance of 30 meters from dormitories, eating areas and kitchens; one washbasin for every six persons, or per family.
h. One shower per ten persons, separated by gender.
i. One large laundry sink for every 30 persons.
j. In the absence of a kitchen service (kitchen and dining hall provided by the farm), there must be installations outside the living areas for preparing and eating food and for washing kitchen utensils. There must be one cooking installation per 10 persons or for every two families.

5.15 All workers of the farm and persons living on the farm must have access to potable water. Sufficient supply of potable water must be provided to all workers and must be available at the work site. The farm must be able to demonstrate that the water provided complies with the physical and chemical parameters and other characteristics established in applicable laws or in their absence, with the following critical parameters defined by the World Health Organization (WHO):

Parameter	**Value**
Fecal Coliforms	Zero
Chlorine residue or residue from other treatment disinfectants	0.2 to 0.5 mg/L
Nitrates	10 mg/L as nitrates
pH	6.5 to 8.5
Sodium	20 mg/L
Sulphates	250 mg/L
Turbidity	Less than or equal to 5 NTU

Non-family farms that obtain water from their own sources - water not supplied by aqueducts managed by other entities - must have a periodic drinking water monitoring and analysis program that includes:

a. Identification of water sources on a map and on the farm.

b. Policies and procedures for guaranteeing the protection of water sources.
c. Sampling procedures and sampling locations and frequency.
d. Analyses conducted by a legally recognized laboratory (certified or authorized).
e. A record of the results for the last three years or since the certification process was initiated.

Additional analysis may be requested in order to ensure quality when evidence of direct or indirect contamination (such as erosion) of surface or underground water exists.

5.16 All workers and their families must have access to medical services during working hours and in case of emergency. When legislation requires, farms must contract the services of a doctor or nurse with the necessary equipment to provide these services.

5.17 The farm must have mechanisms to guarantee access to education for the school-age children that live on the farm. Schools established and administered by certified farms must have the necessary resources, personnel and infrastructure to be able to provide an educational experience that complies with national legal requirements.

5.18 The farm must implement an educational program directed towards administrative and operative personnel (farm workers) and their families that encompasses three topics: the general objectives and requirements of *Rainforest Alliance Certified*™ certification; environmental and conservation topics related to this standard; and fundamental health and hygiene concepts. The program must be designed for the culture, language and educational level of those involved.

5.19 In those regions or countries where families traditionally harvest specific crops and where national laws do permit it, minors can participate in harvesting under the following conditions:

a. The farm must have identified and monitor those harvest working conditions that have impacts on the health and physical and mental well-being of minors, and must take special measures to eliminate or mitigate those impacts.
b. Harvest activities must not interfere with the minors' education obligations.
c. Minors must not carry large or heavy (no more than 20% of a minor's body weight) loads.
d. Minors must not work on pronounced slopes (no more than 50%), near steep cliffs or drop-offs, or on high surfaces.
e. Minors must always be accompanied by one of their parents, a legal guardian, or an adult authorized by a parent or guardian. In the latter case, the farm must have written authorization from the minor's parents or legal guardian. Minors must not walk alone through the plantation.
f. Minors must be remunerated in cash for their labours.
g. The farm must take measures to reduce the participation of minors in agricultural activities. These measures must include the installation and maintenance of schools, nurseries or day care, or paying parents or other audits to care for children instead of harvesting.
h. The farmer must ensure that everyone who participates in the harvest knows the conditions set forth in this criterion and must take the necessary measures to guarantee compliance.

6. OCCUPATIONAL HEALTH AND SAFETY

6.1 The farm must have an occupational health and safety program with the principles objective being to identify and minimize or eliminate workers' occupational risks. The program must have the policies, procedures, personnel and the resources necessary for reaching its objectives. It must also comply with applicable national laws and with this standard and be known and understood by the workers. The workers must be involved with reviewing the policies, procedures and other activities indicated in the program to ensure compliance. An occupational health committee must be established on farms with ten or more permanent production and processing workers. A written procedure is required for selecting committee members, and records must be kept for committee meetings and actions taken.

6.2 The farm must have a permanent and continuous training program to educate workers on how to carry out their work correctly and safely, especially regarding the handling of machinery and agricultural equipment. Workers must be familiar with the training requirements for their job, and must be trained before starting work on the farm. On farms with ten or more permanent production and processing workers, the farm must keep a written record of each training session, including its objectives, subjects covered, workers required to attend, materials used, frequency and duration, and a list of those who participated.

6.3 All workers that apply, handle, transport or come into contact with agrochemicals or other chemical substances must be trained in at least the following subjects:

a. General occupational health.
b. Formulations, names, and the biocide action or toxicity in the case of pesticides, of the substances used.
c. Interpretation of the pesticide labels and of the Material Safety Data Sheet (MSDS) for the substances used.
d. Correct use of personal protective clothing and equipment.
e. Preventative measures and measures for reducing damage to health and the environment caused by chemical substances: equipment, techniques, signage, medical examinations, etc.
f. Emergency procedures, first aid and medical attention for cases involving poisoning or undue contact with chemical substances.
g. Techniques for handling chemical substances and for the correct application of agrochemicals.
h. Secure handling and transportation of agrochemicals for drivers.

Only persons with proven knowledge and experience in the subject must carry out the training. Farms with ten or more permanent workers in production or processing must document for each training event the objectives, topics, the workers or positions that must attend training, the training materials used, the frequency and duration, and the list of participants.

6.4 Workers that carry out activities identified as being dangerous or a health risk in the occupational health and safety program, or those that require special skills such as the handling and application of agrochemicals, carrying heavy loads, harvesting manually or using agricultural machinery or equipment, must receive a medical check-up at least annually to assure their physical and mental capacities for such work. Workers must have access to the results of their medical examinations. Those workers who either express or are observed having medical or mental health issues, must have the timely attention of and, as indicated, treatment by medical personnel - with the authority to find that a worker is unfit for the specific job he/she is doing and he/she needs job reassignment. Farm management must implement actions to avoid medical disorders of farm workers caused by harvest and other labour practices. Adequate rehydration must be provided at all times.

6.5 Personnel who apply or handle agrochemicals must have examinations necessary to determine the potential effects of the agrochemicals they handle before initiating such activities on the farm. These workers must not suffer from chronic diseases, hepatitis or renal diseases, or respiratory diseases nor have been declared mentally challenged. Only males between the ages of 18 and 60 are permitted to apply agrochemicals. On farms where organophosphates and carbamates are applied, cholinesterase examinations must be carried out every six months or as stipulated by law, whichever is more frequent. The examination results must be documented in a manner in which the following information is easily found: name of examined worker, examination date and results, and any recommendations regarding the worker's capacity to apply agrochemicals. Workers must have access to the examination results and must be assigned to other activities if the recommendations indicate that they are unfit to apply these products.

6.6 The farm must provide workers in all work areas with the basic services, resources and working conditions necessary to comply with the occupational health and safety program objectives and with the safety, health, and cleanliness requirements of applicable laws and this standard. Farms must provide facilities for human hygiene purposes in all sites with worker presence that is out of reach of administrative infrastructure. The farm must consult workers about the provided services, resources and working conditions, and demonstrate that they take into account the results of these consultations. The farm must provide the necessary protective equipment, and require its usage, for all machinery, tools and other implements considered dangerous.

6.7 The farm must maintain strict safety standards in workshops and storage areas in order to reduce the possibility of accidents. Farms must have mechanisms to manage and control access to these areas and workers must have knowledge of them. The farm must assign and train personnel responsible for managing the distribution of materials and for controlling access to storage areas. Materials must be stored separately according to their characteristics. Personal protection equipment must not be stored with chemical substances. A current inventory of materials must be maintained and only the quantities of materials necessary to guarantee the continuity of work on the farm must be stored.

6.8 Workshops and storage facilities of all substances but agrochemicals or flammable must be designed, constructed and equipped to reduce the risk of accidents and negative impacts on human health and the environment. All of these areas must be used exclusively for designated purposes and must have signs inside and outside that indicate the types of

substances stored, the dangers they present, and precautionary measures to be taken in the area. The design, construction and equipping of these facilities must comply with applicable laws or with the following parameters, whichever are stricter:

a. The corridors and storage areas on the floor of the storage facilities must be well marked. There must be a free space of at least 30 centimeters between the wall and the stored materials.
b. The storage facilities must have shelving and platforms for storing equipment made from non-absorbent materials for storing liquid products.
c. There must be enough natural light to allow visibility during the day in the absence of electricity.
d. There must be enough natural ventilation to prevent the accumulation of odors and vapors.
e. The emergency exits must be clearly marked and unobstructed.
f. In the box and packaging assembly areas, the continuous noise level must not exceed 85 decibels.
g. The box and packaging assembly areas must have at least two meters of free space for each assigned worker.
h. The farm must have packing material (cardboard boxes, plastic and other materials) storage and assembly areas constructed from impermeable and non-flammable materials.

6.9 Those areas used for the storage and distribution of agrochemicals or flammable and toxic substances must be designed, constructed and equipped to reduce the risk of accidents and negative impacts on human health and the environment. These areas must be used exclusively for these purposes. Fuels and other flammable substances must not be stored with agrochemicals. All of these areas must have signs legible at a distance of 20 meters to indicate the types of substances stored, the dangers they present and precautionary measures to be taken in the area. The farm must ensure that all conditions comply with applicable laws or with the following parameters, whichever are stricter:

a. The floors and walls must be smooth and waterproof.
b. In the agrochemical storage facilities, the floors must have a one percent slope and there must be a retention wall in the different entrances to prevent spilled liquids from escaping the storage area.
c. Fuel tanks and containers for flammable substances must be kept in enclosed areas with good ventilation, a retention wall and a smooth, waterproof floor to retain any spills. The walls' height must be calculated to retain 1.2 times the volume of the stored containers.
d. Fuel tank enclosures must have a system for removing spills and accumulated water from rain or washing. All drains in the storage areas must be connected to a collection and deactivation system and have an inspection box.
e. Underground fuel tanks must be eliminated.
f. Storage areas must have a loading area with collection system for spills.
g. The storage area must have enough capacity to hold the maximum amount of products needed for normal activities on the farm. Storage facilities must have an area to store empty containers.
h. The minimum height of agrochemical storage facilities must be three meters from the floor to the storage facility roof or ceiling.
i. There must be enough natural light and the openings for permanent ventilation – windows, extractors and other permanent openings that allow air to circulate freely – must be a minimum of 20% of the total floor area.
j. The corridors and storage areas on the floor of the storage facilities must be clearly marked. There must be a free space of at least 30 centimeters between the wall and the stored materials.
k. The platforms or shelves must be well labeled, constructed from a non-absorbent material, and isolate the product from direct contact with the floor.
l. There must not be any offices within the storage areas, except when the substances are completely separate from the office area and good ventilation is maintained.
m. The farm must have designated areas for opening pesticide-treated bags (for the protection of fruit) designed to prevent the escape of these materials and to facilitate the collection of plastic wastes.
n. Spill and airplane wash water contention and collection systems in airports used for fumigation services.

6.10 The farm must store agrochemicals in a manner that minimizes potential negative impacts on human health and on the environment. The farm must store only the amount of agrochemicals necessary to meet short-term needs. These products must be separated according to their biocide, toxicity and chemical formula. They must not be stored on the floor nor come within contact with absorbent materials. A Material Safety Data Sheet must be kept in the storage facility for each chemical product stored. All agrochemical containers must be washed three times before being stored for disposal or return to supplier. All agrochemical containers must maintain their original labels. The farm must take actions to return to

the supplier agrochemicals that are prohibited, expired, or not legally registered, or agrochemicals that have had their licenses canceled. If the supplier will not accept them, the farm must seek safe alternatives for eliminating them.

6.11 The farm must demonstrate that the locations of agrochemical and fuel storage areas comply with applicable laws. If applicable legislation does not exist and if the design, construction and management of these facilities do not comply with some or all of the requirements indicated in Criteria 6.7 to 6.10, the following separations must be maintained:

a. Sixty meters from buildings used by people on a daily basis (housing, health centers, schools, recreation areas, offices, etc.).
b. One hundred meters from public roads.
c. One hundred and twenty meters from rivers, streams and lakes.
d. Two hundred meters from water wells or springs used for human consumption.
e. For agrochemical storage facilities, at least 50 meters from fuel storage tanks.

6.12 The farm must take permanent measures to reduce the risk of accidents or spills of agrochemicals during their transportation to and within the farm. Vehicles used for transporting chemicals must be in a good state of repair, legally registered and have insurance policies designed for these services. The persons in charge of transporting agrochemicals must demonstrate that they know how to safely transport and handle the substances. All agrochemicals must be transported to the farm in their original containers and accompanied by a copy of their Material Safety Data Sheet. The farm must only transport to the production areas the quantity of agrochemicals necessary for that day's work. Chemicals must be transported in properly labeled plastic containers that are then returned to the storage facility after use. Mobile agrochemical application equipment must be transported empty to the application area.

6.13 *Critical Criterion.* All workers that come into contact with agrochemicals, including those who clean or wash clothes or equipment that has been exposed to agrochemicals, must use personal protection equipment. The farm must provide this equipment in good condition, and must provide incentives to workers to use the equipment. The equipment must reduce contact with the agrochemicals and the possibility of acute or chronic poisoning, and must comply with the strictest of the following requirements: a) the requirements indicated on the products' Material Safety Data Sheet, b) any applicable laws; or c) the equipment indicated in Annex 2 of this standard.

6.14 The farm must have the necessary safety measures for the protection of workers applying agrochemicals in the field. A supervisor must check, at least every three hours, all workers applying World Health Organization (WHO)'s categories Ia, Ib and II technical grade active ingredients of pesticides (see Annex 3). Workers must not apply agrochemicals for more than six hours per day in order to limit their exposure to agrochemicals and to minimize the risk of accidents.

6.15 The farm must take permanent actions to protect workers, neighbors and other persons from the effects of the application of agrochemicals and biological or organic inputs. The farm must identify the groups that are most exposed to applications and have mechanisms for alerting them well in advance regarding application dates and areas and the time periods during which entry to these areas is restricted. Access to these areas must be prevented by warning signs with symbols or by other safety indications. The farm must implement an application schedule in order to prevent undue entrance of unauthorized persons into the application area. The workers know and respect the restricted entry intervals, and quarantine and pre-harvest periods stipulated in the Material Safety Data Sheet for applying agrochemicals. For products that do not have restricted entry periods in the Material Safety Data Sheet, the following restricted entry intervals must be applied:

a. WHO class III and IV technical grade active ingredients of pesticides: between 4 and 12 hours.
b. WHO class II technical grade active ingredients of pesticides (see Annex 3): between 24 and 48 hours.
c. WHO class Ia and Ib technical grade active ingredients of pesticides (see Annex 3): between 48 and 72 hours.

When two products with different restricted entry or pre-harvest application intervals are used at the same time, the longest interval and the strictest quarantine procedures must be applied. Spray booms must have a colored sign, visible from 30 meters, that corresponds to the toxicity of the product being applied or to that of the most toxic product in the application mix.

6.16 The farm must have showers and changing rooms for all persons that apply or come in contact with agrochemicals. There must be policies and procedures that require that all workers that apply agrochemicals shower and change their

clothes immediately after finishing the application and before leaving the farm at the end of the workday. There must be exclusive and separate areas for washing personal protection equipment and for washing application equipment.

6.17 Clothes worn while applying agrochemicals must never be washed in the workers' homes. There must be a designated area near the changing rooms for washing application clothing. Handling and safety procedures must be established for transferring or transporting contaminated clothing from the shower area to the laundry room.

6.18 The farm must identify and analyze the types of potential emergencies – caused by nature or humans – that could occur on the farm according to its operations and environment. The farm must have an emergency response plan with actions and documented procedures for responding to all identified emergencies. All workers must be familiar with the emergency response measures relating to their areas of work and responsibilities. The farm must have workers trained in first aid available on each shift.

6.19 The farm must have accessible the necessary equipment for preventing and responding to the different types of emergencies identified in the emergency response plan. There must be first aid equipment in the farm's permanent installations and first aid kits available to field workers. There must be a shower, eye-wash facilities and a lavatory or sink in the chemical storage areas and in the areas where agrochemicals are mixed and distributed.

6.20 Farms must implement documented procedures for protecting workers in the event of an extreme weather event. When harvesting at night, farms must provide constant lighting in the entire radius of harvest worker activities. Only in the case of monoculture crops with an average plant height lower than two meters, farms must provide shelter for shade and protection from extreme weather conditions, such as heavy rain and lightning.

7. COMMUNITY RELATIONS

7.1 The farm must respect areas and activities that are important to the community socially, culturally, biologically, environmentally and religiously. These must not be affected by farm activities.

7.2 *Critical Criterion*. The farm management must implement policies and procedures for identifying and considering the interests of local populations and community interest groups regarding farm activities or changes that could have an impact on their health, employment or local natural resources. The farm must document and make available for public view all complaints and comments it receives related to its activities and its replies to them.

7.3 The farm must have policies and procedures for prioritizing the hiring and training of a local labour force and for contracting and acquiring local services and products.

7.4 The farm must contribute to the protection and conservation of community natural resources, collaborate with the development of the local economy, and contribute fairly towards the costs of the community infrastructure and local shared resources consumed – schools, pathways, aqueducts and other infrastructure as well as water and other resources – according to the amount used by the farm. Farms must negotiate a fair compensation with local communities and local and national authorities for resources and infrastructure used.

7.5 The farm must help with local environmental education efforts and must support and collaborate with local research in areas related to this standard.

7.6 The farm must have a legitimate right to land use and tenure, demonstrated by presenting the appropriate official documentation. If there is no such documentation the farm must show either:

a. The absence of significant disputes on land use, tenure and access, or;
b. The consent of local communities, regarding the land, natural and agricultural resources.

8. INTEGRATED CROP MANAGEMENT

8.1 The farm must have an integrated pest-management program based on ecological principles for the control of harmful pests (insects, plants, animals and microbes). The program must give priority to the use of physical, mechanical, cultural and biological control methods, and the least possible use of agrochemicals. The program must include activities for monitoring pest populations, training personnel that monitor these populations, and integrated pest management techniques. As part of the program, the farm must collect and record the following information about pest infestations:

infestation dates, duration, area and location; type of pest; the control mechanisms employed; environmental factors during the infestation; and damage caused estimated costs of damage and control.

8.2 The farm must demonstrate by comparative agrochemical inventories and use records that it rotates chemical products and reduces their use for crop production. The agrochemical inventory on the farm must include, as a minimum requirement, the commercial and generic product names, the quantities acquired and the purchase dates. For field applications, the farm must record the following information:

a. Products applied and application dates.
b. Identification of the area where the application was made (on a map or clearly identified by the name or number of the plot).
c. Application area size (in ha or another indicated unit of measurement).
d. Dosage and total volume of products used.
e. Names of the persons responsible for mixing the products and authorizing the application.
f. Names of the persons that carried out the field application.
g. Identification of application equipment used (backpack or motorized sprayer, fumigation airplane, spray boom, etc.).
h. The farm must keep a record of applications for five years. The information from records must be summarized and analyzed to determine application trends for specific products during the last five years.

8.3 The farm must implement the procedures and have the necessary equipment for mixing and applying agrochemicals, as well as maintain, calibrate and repair application equipment, in order to reduce to a minimum waste and excessive applications. The farm must designate and train personnel who will be responsible for the implementation of these procedures.

8.4 *Critical Criterion.* The following chemical or biological substances cannot be used on certified farms:

a. Biological or organic substances that are not legally registered in the country for commercial use.
b. Agrochemicals that are not registered officially in the country.
c. Agrochemicals that are mentioned in the List of Banned and Severely Restricted Pesticides in the U.S. by its Environmental Protection Agency (EPA) or pesticides banned or severely restricted in the European Union.
d. Substances that have been banned globally under the Stockholm Convention on Persistent Organic Pollutants (POPs).
e. Substances listed in Annex III of the Rotterdam Convention on Prior Informed Consent (PIC), in relation to national bans or severe restrictions for documented health or environmental reasons in at least two regions of the World.
f. All Pesticide Action Network Dirty Dozen substances.

List of Prohibited Pesticides – Sustainable Agriculture Network is binding for the inserts 8.4.c, 8.4.d, 8.4.e and 8.4.f of this criterion.

8.5 The farm must have a plan for eliminating the use of World Health Organization Class Ia and Ib technical grade active ingredients of pesticides, and for reducing the use of World Health Organization Class II technical grade active ingredients of pesticides (see Annex 3). Farms that do use the formerly mentioned ingredients must demonstrate the following:

a. No technically or economically viable alternatives do exist for the type of pest or infestation.
b. The pest or infestation has had, or would have had, proven significant economic consequences that surpass the economic threshold for damage.
c. Measures must be taken to substitute World Health Organization Class Ia, Ib and II technical grade active ingredients of pesticides.

8.6 *Critical Criterion.* The farm must take steps to avoid introducing, cultivating or processing transgenic crops. When nearby transgenic materials are accidentally introduced into a certified farm's crop, the farm must develop and execute a plan to isolate the crops and provide follow-up in order to comply with the requirements of this criterion.

8.7 Farms must only use fumigation methods for post-harvest treatment that minimize health effects in workers and control applications. Records must be maintained of any post-harvest treatment. These records must at least include the

following information: treatment application date, lot or batch number, the active ingredient's name of the applied product, dose, and the names of the persons who applied and mixed the product(s) and approved the application.

8.8 *Critical Criterion.* APPLIES FOR SUGAR CANE CULTIVATION ONLY Farms that harvest sugarcane with machines are not allowed to use fire for harvest preparation. All other farms – employing manual rather than mechanized harvesting - must eliminate fire for harvest preparation within a maximum period of three years and must implement the following rules:

a. Explain their fire-elimination plan to workers, suppliers and surrounding communities.
b. Comply with local legislation about the use of fire for farm management.
c. Conduct burning in a way that minimizes the impact on workers, surrounding communities and natural resources.

Fire must not be allowed to spread to conservation areas. The workers in charge of burning must be adequately trained in fire management, control and suppression.

8.9 The use of fire for pest and disease management must only be used if it is the option of less environmental impact in comparison with other pest control measures. This option must be approved by competent authorities, must reflect technical considerations and focus on problematic areas only.

9. SOIL MANAGEMENT AND CONSERVATION

9.1 The farm must execute a soil erosion prevention and control program that minimizes the risk of erosion and reduces existing erosion. The program activities must be based on the identification of soils affected by or susceptible to erosion, as well as soil properties and characteristics, climatic conditions, topography and agricultural practices for the crop. Special emphasis must be placed on controlling runoff and wind erosion from newly tilled or planted areas, as well as preventing sedimentation of water bodies. The farm must use and expand vegetative ground covers on the banks and bottoms of drainage canals to reduce erosion and agrochemical drift and runoff towards water bodies.

9.2 The farm must have a soil or crop fertilization program based on soil characteristics and properties, periodic soil or foliage sampling and analysis, and advice from a competent and impartial professional or authority. The number of soil or foliage samples must correspond with the size of the production area, types of soil, and variations in its properties, as well as results of previous analyses. The producer must keep the results of these analyses on the farm for a two-year period. Organic and non-organic fertilizers must be applied so as to avoid any potential negative impacts on the environment. The farm must give priority to organic fertilization using residues generated by the farm.

9.3 The farm must use and expand its use of vegetative ground cover to reduce erosion and improve soil fertility; structure and organic material content, as well as minimize the use of herbicides. There must be a vegetative ground cover establishment and expansion plan that indicates the areas with existing cover, as well as areas where cover will be established in the future. The farm must include a timeframe for these activities.

9.4 The farm must promote the use of fallow areas with natural or planted vegetation in order to recover natural fertility and interrupt pest life cycles. The farm must have a plan that indicates the fallow techniques or practices (planting, natural regeneration, etc.) and their timing. These areas must be identified in the fields and on the farm map. Burning is not allowed to prepare land.

9.5 *Critical Criterion.* New production areas must only be located on land with the climatic, soil and topographic conditions suitable for intensity level of the agricultural production planned. The establishment of new production areas must be based on land use capacity studies that demonstrate long-term production capacity. The cutting of natural forest cover or burning to prepare new production areas is not permitted.

10. INTEGRATED WASTE MANAGEMENT

10.1 The farm must have an integrated waste management program for the waste products it generates. This must be based on the concepts of refusing or reducing the use of products that have actual or potential negative impacts on the environment or human health as well as reusing and recycling waste. As part of this program, the sources and types of waste must be identified and the quantity (weight or volume) must be estimated. The activities of the integrated waste management program must be in accordance with the types and quantities of waste generated.

10.2 The use of open waste dumps and open-air burning of waste is not permitted. The burning of waste products is only allowed in an incinerator designed for that purpose, based on technical studies that determined the size, optimum location and control measures for minimizing the environmental and human health impacts related to its construction and operation. The farm must have the relevant legal permits for the construction and operation of this incinerator, as well as the appropriate operating procedures.

10.3 The final or semi-permanent waste deposit areas on the farm must be designed and managed to reduce the risks of environmental contamination and damage to human health. Its location must be in accordance with applicable laws regarding distances from houses and other areas of human activity, water channels and sources, and conservation areas. The farm must have identified the sites and designs that are technically suitable for the final deposit or processing of both organic and inorganic waste through an evaluation of site characteristics, the volume and type of waste to be eliminated or treated, and potential impacts.

10.4 Farms must not transfer waste to persons or businesses without checking that its treatment or final use complies with legal requirements and the requirements of this standard. Waste products or materials that have been in contact with agrochemicals or any other toxic or harmful substances must not be given away without first verifying that they will be used for similar purposes that do not represent a danger to human health or produce negative environmental impacts.

10.5 The farm must be clean and free of accumulations of all types of waste products in order to maintain a positive image and contribute to the workers' well-being. The farm must regularly implement educational activities for farm workers and residents with the objective of promoting cleanliness and preventing the indiscriminate disposal of waste. The farm must strategically place waste receptacles on the farm and regularly collect and dispose of their contents.

10.6 The farm must implement practices to diminish its emissions of greenhouse gases and increase carbon dioxide sequestration. Such practices include soil cover management, planting trees and other perennial vegetation, proper sourcing and management of fertilizers and fuels, management of effluent ponds and manure, proper waste management, use of clean technologies, improvement of energy efficiency, reduction in tillage, and participation in local or regional initiatives aimed at greenhouse gas reduction and carbon dioxide sequestration.

Appendix E. Group Certification Standards (March 2011, version 2)

All the criteria are available at www.sanstandards.org. Source: SAN (2011).

1. TRAINING AND CAPACITY BUILDING

1.1 The group administrator must implement a training program for its group members to comply with Sustainable Agriculture Network standards. The people actually doing the job must be those trained.

1.2 The group administrator must train its internal management system personnel to enable them to fulfill their roles.

1.3 The group administrator must document the following elements of its trainings: date and location, summary of contents, name and qualification of the trainer, and names and signatures of the participants.

1.4 Trainings must be conducted in participants' local languages or dialects, at educational levels and with cultural characteristics enabling successful communication.

2. RISK ASSESSMENT

2.1 The group administrator must create an annual risk identification and assessment for compliance with Sustainable Agriculture Network standards aiming for continuous improvement considering no less than internal inspections, external audits, new group members, farm production, chain-of-custody, compliance costs and performance of the internal management system.

2.2 The group administrator must implement measures to prevent or minimize risks identified in the assessment.

2.3 *Critical Criterion.* The group must have a system for avoiding the mixing of certified products with non-certified products in its facilities, including harvesting, handling, processing and packaging of products, as well as transportation. All transactions involving certified products must be recorded. Products leaving the group as certified must be identified and accompanied with the relevant documentation.

a. The group administrator must establish procedures to ensure that non-certified production is not brought into the group's certified production.
b. Group members must not individually sell their products as certified, however their product can be segregated as a certified product for sale by the group administrator.

3. INTERNAL MANAGEMENT SYSTEM

3.1 *Critical Criterion*. The group administrator must implement an effective internal management system, including the following:

a. Organizational chart with details of committees, positions and job responsibilities, including those serving;
b. Responsibilities, required qualifications and competencies of personnel, elected persons, and committees;
c. Governance procedures for:
    I. Approval of new group members and annual status of each member farm;
    II. Group and group member record keeping requirements;
    III. Internal inspections; and
    IV. Sanctions and appeals.

3.2 *Critical Criterion*. Each group member must sign or mark an agreement with the group administrator. Each group member must be informed of their right to resign. The group administrator must assure that each group member understands the agreements' contents including group members' duties to:

a. Comply with Sustainable Agriculture Network standards and group administrator's internal requirements;
b. Provide the group administrator with required information;
c. Cooperate with internal inspections and external audits;
d. Report their intentional and unintentional non-compliances with Sustainable Agriculture Network standards and group administrator's internal requirements.

3.3 The Internal Management System personnel and procedures must be resourced with competent personnel and sufficient finances, and must reflect the group members' characteristics and composition, including its geographical and cultivation diversities.

3.4 The group administration must manage conflicts of interest with impartiality and independence, including decision makers' absence of their own actual or potential conflicts of interest.

3.5 *Critical Criterion*. Prior to an external audit, the group administration must internally inspect all group member farms. They must be internally inspected no less than annually, preferably at different times of the year. New group member farms must be internally inspected before being included in the group subject to certification.

3.6 The Internal Management System must have policies and procedures for sanctioning individual group members for non-compliance with Sustainable Agriculture Network standards or internal group administrator requirements.

a. Progressive sanctioning measures must be established, concluding with the exclusion from sales of certified products;
b. Each group member must be informed of the sanctioning system;
c. Records must allow for the easy identification of sanctioned group members;
d. Each group member must have the right to appeal findings of non-compliance and its resulting sanctions.

3.7 Upon group member's request, the group administrator must facilitate a group member's ability to create records.

3.8 The group administrator's documents must be consistent with group members' language and level of understanding.

3.9 *Critical Criterion*. The group administrator must keep accurate group member records, including:

a. A list of group members with their names, date of entry to the group, any assigned identification and certification status;
b. Information on certified member farms with location, total area, total production area, annual production volume, farm maps or sketches indicating location of natural ecosystems;
c. Regional maps or sketches of all the member farms' locations, including access roads and main natural ecosystems;
d. Volumes of certified products at the following stages: buying, handling, processing, packaging and selling;
e. External audits and internal inspection reports, dates, and any complaints received;
f. Prior non-compliances, including sanctions, follow-up actions and appeals.

Appendix F. Non-compliance per principle.

Table: calculation of relatively non-compliance per principle.

Principle	2009	2010	2011[11]	2012	Calculation = (2009+2010+2011+2012)
1.	2/10	3/10	1/10	2/10	0.80
2.	1/8	2/8	1/8	3/8	0.88
3.	0/6	1/6	1/6	1/6	0.50
4.	1/9	1/9	1/9	1/9	0.44
5.	2/19	2/19	2/19	1/19	0.37
6.	2/20	3/20	4/20	1/20	0.50
7.	1/5	1/5	0/5	0/5	0.40
8.	2/7	1/7	1/8	1/8	0.68
9.	1/5	2/5	1/5	1/5	1.00
10.	2/5	3/5	3/6	3/6	2.00

Source: audit reports investigated group.

Explanation table: 2/10 means that the principle consists of ten criteria, two out of ten have non-compliance in the specific year and for the specific principle.

[11] For 2009 and 2010 the Sustainable Agricultural Standards of the version of 2009 are used. For 2011 and 2012 the version of 2010 is used. The number of criteria can therefore be changed for some principles.