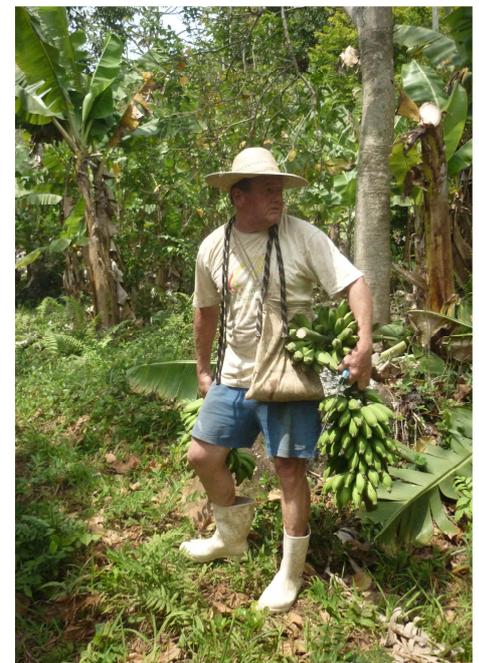


Participatory Guarantee System: a Certification System for Organic Food and a Participatory Learning Process of Agroecological Practices at Farm Level.

Case Study: Centro Ecológico-North Littoral, Rio Grande do Sul (Brazil)



Blanca Martín Brasas

Supervisor: Sietze Vellema (KTI), WUR



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***“Todo amanhã se cria no ontem, através de um hoje.
Temos de saber o que fomos, para saber o que seremos.”***

Paulo Freire

***“Tomorrow everything will be created based on yesterday, through today.
We have to know what we were, to know what we will be”***

Paulo Freire

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LIST OF ABBREVIATIONS

ACERT	Associação dos Colonos Ecologistas da Região de Torres, translated: Association of Ecological Settlers of Torres Region
ACS	Alternative Certification Systems
AMADECOM	Associação de Mulheres para o Desenvolvimento Comunitário de Três Forquilhas, translated: Women Association for the Communitarian Development of Três Forquilhas
ANAMA	Ação Nascente Maquiné, translated: Nascent Action Maquiné
APELCAM	Associação dos Produtores Ecologistas da Luz do Canto dos Magnus, translated: Association of Ecological Producers of Luz do Canto dos Magnus
APEMSUL	Associação dos Produtores Ecologistas de Morrinhos do Sul, translated: Association of Ecological Producers of Morrinhos do Sul
CB	Certification Body
CE	Centro Ecológico, translated: Ecological Centre
COOPET	Cooperativa Ecológica de Consumidores de Três Cachoeiras, translated: Ecological Cooperative of Consumers of Três Cachoeiras
Econativa	Cooperativa Regional de Produtores Ecologistas do Litoral Norte do Rio Grande do Sul e Sul de Santa Catarina, translated: Regional Cooperative of Ecological Producers the North Littoral area in Rio Grande do Sul
Ecotorres	Cooperativa dos Consumidores de Produtos Ecológicos de Torres, translated: Cooperative of Ecological Products of Torres
EMATER/RS	Empresa de Assistência Técnica e Extensão Rural (Rio Grande do Sul), translated: Agency for Technical Assistance and Rural Extension Service
FFS	Farmer Field Schools
GAO	Grupo de Agricultura Orgânica no Brasil, translated: Organic Agriculture Group
GC	Group Certification
GEARD	Grupo Ecológico Alto Rio de Dentro, translated: Ecological Group of Alto Rio de Dentro
GPEP	Grupo Ecológico Paraíso, translated: Paraíso Ecological Group
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
LA	Latin America
MAPA	Ministério da Agricultura, Pecuária e Abastecimento, translated: Ministry of Agriculture, Livestock and Food Supply
MMC	Movimento de Mulheres Camponesas, translated: Movement of the Peasant Women
OCS	Organização de Controle Social, translated: Organization of Social Control
OFNZ	Organic Farm New Zealand
OPAC	Organismo Participativo de Avaliação da Conformidade, translated: Participative Organization of Assessment Compliance
PGS	Participatory Guarantee System
POA	Porto Alegre
RN	Regional Nuclei
RS	Rio Grande do Sul
SC	Social Control
SisOrg	Sistema Brasileiro de Avaliação da Conformidade Orgânica, translated: Brazilian System of Assessment of Organic Compliance
SLN	Solidarity Littoral Nucleus

TPC

Third-Party Certification

UNESCO

United Nations Educational, Scientific and Cultural Organization

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EXECUTIVE SUMMARY

Certification is becoming more and more important in different fields. In organic agriculture, besides the most spread Third-Party Certification System (TPC) there are also alternative approaches, such as, Participatory Guarantee System (PGS). But *what is Participatory Guarantee System (PGS)? And, is it possible to combine certification of organic food and exchange of knowledge, skills, techniques, and know-how aimed at solving problems about agroecological production at farm level?*

Participant observation, interviews and a seminar about organic banana production were undertaken to explore the case study of the Centro Ecológico-North Littoral NGO (CE) and the Solidarity Littoral Nucleus (SLN) PGS group located in the Littoral North of the Rio Grande do Sul state, Brazil. The PGS-staging of CE-SLN, as part of the Ecovida Agroecological Network and the organic movement, encouraged exchange of knowledge, techniques, skills and know-how among farmers and technicians. Factors, such as participation, mutual support, autonomy of farmer groups and flexibility in the process and relationships have influenced the participatory learning process about agroecological practices along the PGS process. Moreover, collective responsibility, horizontal relationships, farmer-to-farmer methodology combined with the role of the CE's technicians, willingness to improve agroecology, and the integration of PGS with the rest of activities undertaken by CE-Ecovida have also been key factors. Additionally, other external factors, such as, specific strategies of production and commercialization could also impact in the participative learning process.

But, could also other factors, such as, the connection to the organic movement could play a key role? This case study could shed some light on the certification and learning process in agroecology.

CHAPTER 1. INTRODUCTION

Organic Production

There are 80 million hectares of certified organic areas all over the world -including agricultural and non-agricultural lands- according to the latest FiBL-IFOAM survey based on data of the end of 2010 (Willer & Kilcher, 2012).

Currently, the certified organic agricultural land is 37 million of hectares worldwide –including in-conversion areas- (0.9 percent of the agricultural land in the world). It is likely that there are between two and three millions of farms certified as organic worldwide. And 8.4 million hectares of certified organic agricultural areas are in Latin America (23 percent of the certified organic agricultural land worldwide) which are managed by 270,000 producers (Willer & Kilcher, 2012).

In Brazil, according to Santacoloma (2007) nearly 800,000 hectares of the organic area are certified as organic under conventional or participatory schemes in Brazil. Approximately, 50% of the land is pasture and the rest is mainly used for growing fruits, vegetables, sugar, coffee and grains, such as, maize and soybean.

Organic certified lands in Brazil have experienced a rapid expansion from 700 organic certified farms, in 1997, to over 14,000 in 2003. In 2001 there were 275,576 hectares of organic certified land in Brazil (0.8 percent of the agricultural land) whereas in 2003 the certified organic area reached 803,180 hectares. Therefore, the organic production was increasing between 30 and 50 percent a year (Santacoloma, 2007).

The 80 percent of the organic production is located in the Southern and South-Eastern states where the government is promoting organic agriculture actively. For instance, one of the initiatives carried out by the government is to establish policies that limit the use of agrochemicals. One example of the rapid growth of organic agriculture in this region is that in Santa Catarina state, the number of organic farmers has raised from 100, in 1999, to more than 2,000 in 2001 (Santacoloma, 2007).

Organic Certification and Market

In the last decades, the organic sector has experienced a huge expansion (Santacoloma, 2007). As Guthman affirms (2004) there has been a transformation from the organic movement to the organic industry that has been growing and becoming more and more competitive. And this “evolution” has provoked the same process in certification.

There are different explanations about the emergence of the certification that vary among different authors. But the common underlying factor among them is to open up markets. It means that certification and regulation have been developed in order to foster trade (Santacoloma, 2007 & Guthman, 2004).

On average, 85 percent of the organic production in Latin America (LA) is exported to the European Union, the United States, and Japan. However, in the past decade, some initiatives carried out mainly by producer organizations and NGOs and also some governments were

focused on the domestic markets. Even though the demand in local the market is increasing in LA, there is a long way to go, apart from Brazil where the domestic organic market is more developed. The organic movement is claiming for governmental support through public policies in order to promote the domestic organic market and smallholder farmers (Willer & Kilcher, 2012).

In Brazil, 90 percent or the organic producers are small-scale farmers who are connected to social movements and/or associations. Usually, they are highly diversified and sell their production in the local and national markets. Nevertheless, there are also small agroforestry companies that export tropical fruits and palm heart. The remaining 10 percent of the organic producers are large more specialized companies more specialized that produce mainly fresh and processed fruits, sugar cane, coffee and grains for exportation (Santacoloma, 2007).

According to certified bodies' sources cited by Santacoloma (2007) the organic market sales vary between US\$250 million and US\$300 million, even though these figures varies depending on the source used. The 85 percent of this figure represent the organic production aimed at export markets. The main crops exported are coffee, orange juice, soybean and sugar, which are sold in Europe, the United States and Japan, mainly. The products aimed at the domestic market are mainly sold directly at fairs, in streets, via home delivery and through farmers' associations and cooperatives. Nowadays, nearly 50 percent of the national organic production is consumed in São Paulo and the nearby cities. Moreover, it is considered that the local market has a great potential which is still unexplored. Furthermore, it is difficult for imported organic processed products to compete with the national production due to the high price difference (Santacoloma, 2007).

With the globalization of trade, governments started to develop legal frameworks, national standards and regulations for the labeling of organic products, and, thereby, for their certification. The purpose of this is to guarantee the same quality requirements for all the products that get access into a specific national market regardless of where they were grown, processed or packed. Due to this new situation, standards and certification processes became more complex and consequently certification agencies increased their size and scope (Herberg, 2007).

The consequence for the farmers of this new 'environment of regulations' is the appearance of two obstacles: extremely high certification fees and huge bureaucracy, which both are unaffordable for small-scale farmers, especially in developing countries. As Khosla (2006) explains, the consequence of this is that *"Big agribusiness farms are benefiting from certified organic status and market premiums more than the small-scale producers..."*. Nevertheless, these factors among others are also the reasons of the emergence of alternatives certification initiatives. Concretely, in developing countries, alternative certification systems (ACs) started to arise in the late 1980s (Herberg, 2007).

Learning in Organic Agriculture and Solving Problems

On the other hand, farming organically is recognized as a knowledge-intensive process. Moreover, it implies a constant change due to organic farmers integrating nature and its relationship within their agrosystems (DeLind, 2000). Farmers face daily farming problems,

hence, it involves a constant adaptation which means a continuous problem-solving activity. Thus, a continuous learning process for acquiring knowledge, skills, techniques and know-how becomes necessary for farmers (Parayil, 1991). Additionally, organic certification is required for accessing the organic market but small-scale and diversified farmers are excluded from the mainstream certification system (TPC) due to its high costs and bureaucracy (Khosla, 2006), whereas Participatory Guarantee System (PGS) is suitable for smallholders and diversified farmers and processors (Herberg, 2007).

Moreover, within the Third Party Certification (TPC), the mainstream certification system, there is no room for learning. There are several reasons: the 'imposition' of rules about farming practices due to the utilization of 'models' designed in Western countries in which weather conditions are different (González & Nigh, 2005), the utilization of generic standards that drives to uniformity in farming practices which are displaced from farmers, the use of generic solutions coming from a rigid and top-down approach (Vellema & Jansen (2007), the prohibition of giving advices during the certification process (Herberg, 2007), the rigidity of the processes and inflexibility to local conditions, and the individuality of the process without interrelations with other producers or stakeholders of the supply chain (Torremocha, 2010).

However, PGS presents some features that could drive a learning process among the stakeholders of the supply chain. These characteristics are: the required participation of the key stakeholders of the supply chain (IFOAM, 2008), flexibility to local contexts (Sacchi, Zanasi & Canavari, 2010?), integration of advices and certification, and promotion of exchange of knowledge, skills, techniques and experiences between participants (Herberg, 2007). Nevertheless, there is little research that analyzes empirically the possible relationships between PGS and learning processes at farm level.

Thus, the question raised is: *How to combine a certification system for organic small-holders that triggers a learning process about agroecological practices, knowledge, techniques and skills at farm level? Could PGS be the certification system that facilitates this learning process among farmers?*

This Research

In this research, a case study of the NGO Centro Ecológico-North Littoral (CE) will be carried out. CE works in the South of Brazil providing technical assistance and training to local agroecological smallholders –producers, processors and consumers- in the North Littoral of Rio Grande do Sul, Brazil. CE, together with the Solidarity Littoral Nucleus (SLN), carries out the PGS certification process of fresh and processed organic food, mainly fresh banana. Both belong to the Ecovida Agroecological Network, which connected agroecological stakeholders in the South of Brazil, and the organic movement.

The aim of this research is to explore how PGS certification and Centro Ecológico's activities within SLN trigger processes that have an impact on how small-scale farmers learn agroecological practices in order to solve daily farming problems. Furthermore, the main driving factors and the participants' role in PGS that encourage a collective learning process will be examined. Therefore, it is expected to contribute to bridging the knowledge 'gap' between organic certification and learning processes of agroecological practices at farm level.

Outline Thesis

The first section of this research will address the interrelationships and disconnections between the different certification systems of organic food and learning processes about farming practices between farmers. Firstly, different approaches of organic certification systems will be compared and then, the research problem, objective and questions will be presented. The next two sections will describe the fieldwork results of the case study. It will include the organization and procedures of CE-SLN, the responsibilities of the stakeholders of the supply chain who participate during the PGS process as well as the values, principles and features involved for belonging to the organic movement. Furthermore, the activities carried out by CE-SLN related to the certification system will be analyzed in terms of participatory learning process among the farmer-members of SLN. Then, the interactions between the PGS-staging within CE-SLN, the CE-SLN's setting conditions for being part of the organic movement and the learning process about agroecological farming will be discussed and conclusions will be drawn.

CHAPTER 2. ORGANIC CERTIFICATION SYSTEMS, RESEARCH QUESTIONS AND METHODS

2.1 ORGANIC CERTIFICATION SYSTEMS

Due to the fact that very little research has been conducted on the topic investigated in this thesis and the scarce available literature, it was decided to substitute the habitual *'Theoretical Framework Chapter'* by this chapter in which the different approaches of organic certification will be described and compared focusing specially on the exchange of knowledge, techniques, practices, and skills among farmers, and learning aspects of the different certification systems of organic food.

The search, which unfortunately proven unsuccessful, of previous research conducted in order to develop the 'Theoretical Framework' for this thesis mainly included the following issues and different combinations of the following words as keywords: quality assurance systems and their effects on the learning process of the small-scale farmers about agroecological practices; learning approaches and studies about collective learning within a certification group and/or farmers' group; knowledge circulation between farmers; exchange of experiences between farmers within a cooperative or group, among other. In most of the cases, the researches carried out about collective learning, sharing knowledge, interactive learning, etc., are focus on participatory studies between researchers/technicians and farmers but do not address the exchange between farmers themselves.

2.1.1 Different Approaches in Organic Certification

As it was commented before, different organic certification systems, that reflect different approaches about the understanding of organic agriculture, have been developed worldwide (Herberg, 2007).

The Third-Party Certification system (TPC) is widely spread all over the world, also in Latin America (IICA, 2010). It is based on inspections of the organic production carried out by an external and independent organization from the production system (Torremocha, 2010). Besides this, two alternative certification systems (ACS) will be described: Internal Control System (ICS) and Participatory Guarantee System (PGS). Internal Control System (ICS) or Group Certification (GC) is a modality of the mainstream TPC system that enables to achieve an organic certification to groups of smallholder farmers for getting access to the international organic markets (Elazakker & Eyhorn, 2010). Participatory Guarantee System (PGS) is a locally focused quality assurance system where active participation of the stakeholders is required within the certification process and trust, social networks and knowledge exchange are built (IFOAM, n.d.).

2.1.2 Third-Party Certification (TPC)

Within this certification system, farmers have to comply with the standards established by the certification body (CB). Therefore, this means that the production techniques and management plans, among others, that farmers are performing in their fields are 'defined' by the external CB (Herberg, 2007).

Moreover, the farmer has to provide high amount of documentation to the CB. The inspector checks the production techniques and the documentation, once a year. Afterwards, the CB cross-

checks the inspector's report and documentation provided by the farmer and decides whether or not the farmer is complying with the organic standards, and depending thereupon, the farmer may receive the organic certification (Herberg, 2007).

One important characteristic is that TPC does neither encourage nor involve knowledge exchange and learning process. Inspectors are not allowed to give any advice to farmers during the inspections. Therefore, inspection in certification is completely separated from knowledge exchange for improving farm management (Herberg, 2007).

Another important disadvantage of TPC is that the high expenses and paperwork required alienate smallholder and diversified-crop farmers while encouraging large scale and monocrop production systems which limit the organic movement (Khosla, 2006).

Besides the TPC's disadvantages described above, there are other reasons for the emergence of ACs, such as, the disagreement with the underlying paradigm of TPC and the aim of strengthening the farmers' role. Moreover, the learning approach and training of all the participants is inherent to CGs or PGS groups (Herberg, 2007).

2.1.3 Internal Control System (ICS) or Group Certification (GC)

As in TPC, ICS depends on an external CB. Nevertheless, ICS is based on internal and external inspections. The internal inspector checks all the farms that belong to the ICS group, at least one a year. Nevertheless, the external auditor inspects, annually, the internal control system through checking only a percentage of the farms. Afterwards, the external auditor cross-checks the documentation compiled by the internal inspector with his/her own information collected during the field visits (Elazakker & Eyhorn, 2010). The internal inspection system can be carried out by farmers between each other or by local inspectors (Herberg, 2007).

Due to the GC being a group certification, in the case that violations of the requirements are detected during the external inspection which were not detected during the internal one, the entire group could lose its certification (Elazakker & Eyhorn, 2010). Another important disadvantage of this certification system is the obligation of having a "common point of sale". This makes commercialization more difficult and 'obliges' farmers to change their buyers which is not always feasible (Khosla, 2006).

2.1.4 Participatory Guarantee System (PGS)

PGS is a farmer-controlled certification system (Källader, 2008) that reflects the core values and identity of the organic movement and supports the organic domestic market (Khosla, 2006). It is based on the IFOAM Basis Standards for Organic Production and Processing (OBS) that include environmental, social and economic issues (Sacchi, Zanasi & Canavari, 2010?). As Herberg (2007) highlights, "*it has a strong focus on training everyone involved in the system: farmers, workers and consumers*". Hence, besides involving fairer income for small-scale farmers, PGS also promotes social and learning benefits (Herberg, 2007).

According to the IFOAM's definition, "*Participatory Guarantee Systems are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange*" (IFOAM, n.d.). Additionally, PGS is a flexible method that allows a continuous adaptation to the circumstances

of the context maintaining the compliance to the organic standards established (Sacchi, Zanasi & Canavari, 2010?).

Farmers and also consumers, among others key stakeholders of the supply chain, participate in the verification process. Hence, participation is not only encouraged but may be required (IFOAM, 2008). As Sacchi *et al.* (2010?) state, the philosophy of the participation of all the stakeholders involved in the process entails the idea of a *collective responsibility*.

Due to the necessary co-operation of the group-members to establish the scheme and control system within the group, networks among farmers may be created. This could lead to mutual support, information and knowledge exchange, machinery sharing, etc. Moreover, the mutual *learning process* contributes to enhance *capacity building* (Herberg, 2007).

Because of all the characteristics described above, PGS should not only be seen as a certification method if not also as an accompaniment among farmers with consumers who are willing to improve the global management of the farms. It means a common space to share and exchange knowledge, experience and know-how in order to look for solutions among all the members of the group along a continuous process of learning together (Sacchi, Zanasi & Canavari, 2010?).

Nevertheless, PGS also presents several disadvantages, such as, the lack of institutional recognition that leads to market restrictions. Moreover, PGS also requires a high degree of dedication and voluntary work from stakeholders to keep down the certification costs. And a lack of financial sustainability could be a problem. Additionally, PGS is also restricted to local markets (Herberg, 2007).

The specific internal organization and structure of each PGS initiative may differ from others in order to be adapted to the local context and circumstances. Despite this, all the PGS programs have common principles –or key elements- and features that are shown in the following diagram (fig. 1) (IFOAM, 2008).

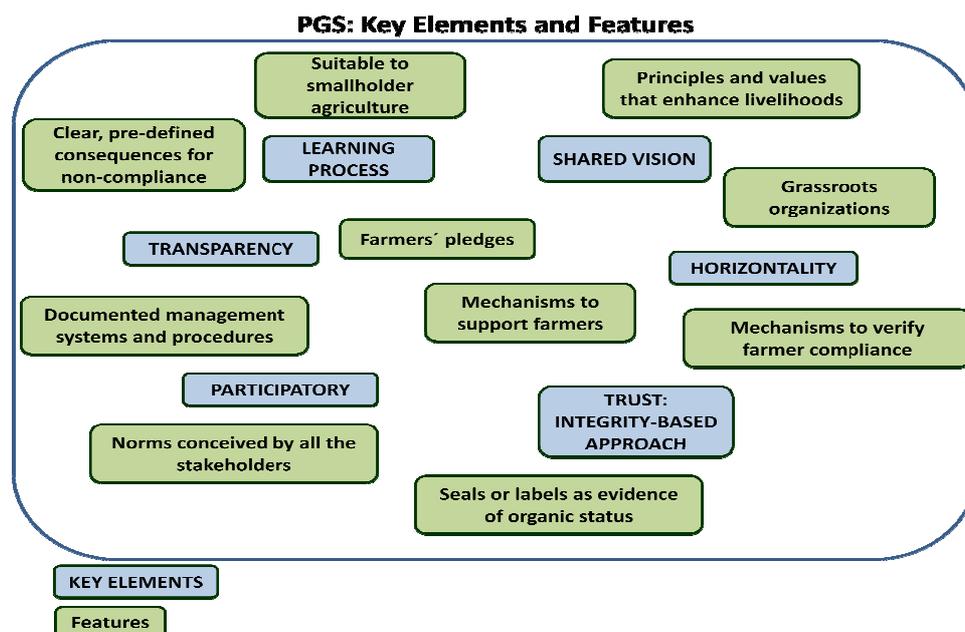


Figure 1. Key Elements and Features of the Participatory Guarantee System

Source: IFOAM, 2008.

Despite the similarities between GC and PGS, there are three important distinguishing aspects between them. Firstly, in PGS certificate is given individually and not to the group like in GC. Secondly, farmers who belong to a PGS group do not need to have the same products and production systems. And thirdly, farmers belonging to a PGS group, contrary to GC, can sell their products individually (Herberg, 2007).

The following table shows the comparison among the three certification systems described before, TPC, ICS and PGS.

Table 1. Comparison between TPC, ICS and PGS

Mainstream Approach	Alternative Certification Systems (ACs)	
	Third-Party Certification	Internal Control System or Group Certification (A modality of TPC)
CB: Independent organization (external inspector).	CB: Internal and external inspectors.	Verification process: Active participation of all the key stakeholders. Audited by farmers in peer reviews (plus external component in some cases).
Achieving the certification is the goal itself.	Achieving the certification is the goal itself but it is based on trust among the stakeholders including the consumers.	Trust is the base for the certification process instead of being the goal.
No relationship between producers and customers.	No relationship between producers and customers.	Based on close relationships between producers and consumers.
Less flexible to local context.	Less flexible to local context.	Adapted to local context assuring compliance to organic requirements.
Favor exportation to foreign countries.	Acknowledged only for developing countries' exports.	Only for local markets.
Marketing individually.	Marketing through group ('common selling point').	Marketing individually.
Certification held individually.	Certification held by group (violations of requirements could lead to the loss of the certification of the whole group).	Certification held individually.
No advice allowed through certification.	Advice and certification can be combined.	Advice and certification can be combined.
High barriers for small-scale and diversified farmers (promoting large and monoculture fields).	Inclusive of small and diversified farmers (lower cost and bureaucracy).	Inclusive of small and diversified farmers (lower cost and bureaucracy).
Higher dependence of external factors and decision-making (vertical structure).	Higher dependence of external factors and decision-making. High dependency on the extension service.	Encourage capacity-building, empowerment and responsibility in the territory (horizontal structure).
'Individual' process without a learning process and exchange.	Training of farmers and the personal involved in the ICS.	Participative learning process and exchange of knowledge between participants.

Source: Self-designed based on Khosla, 2006; Scialabba, 2005; IFOAM, 2006/2008; Torremocha, 2010; Elzakker & Eyhorn, 2010 and Herberg, 2007.

2.1.5 Current PGS Initiatives

Despite the unfavorable legal framework in most of the countries related to the PGS recognition, there are experiences all over the world, such as in Europe, USA, Asia, Africa, Latin America, Canada and Oceania (Willer & Kilcher, 2012).

The first PGS initiative was carried out by Nature et Progrès (the French federation grouping organic producers, processors and consumers) in the 70s (Torremocha, 2010). Afterwards, since 1998, many PGS initiatives started with two main peaks in 2005 and 2010. Nowadays, there are 42 PGS initiatives operational and 46 under development worldwide. It is estimated that PGS involves more than 27,000 operators all over the world, mainly small farmers (IFOAM, n.d.). Latin America is the second continent, after Asia, with the highest figure of producers involved in PGS (over 6,500 producers) (Willer & Kilcher, 2012).

One example of the PGS initiatives is the **Keystone Foundation**. It was founded in 1995 (IFOAM, 2005) and works with 350 indigenous families in Tamil Nadu, India, in organic guarantee and marketing access (Meirelles, n.d. & IFOAM, 2005). They currently commercialize 18 main food and non-food products and its variations. Some of the 'pure products' are honey, coffee, pepper, Indian gooseberry, lime, herbs, spices. Among the processed products that they sell, there are flavored items, pickles, marmalades, candy and mouth fresheners (IFOAM, 2005).

In Brazil, the **Ecovida Agroecology Network** articulates farmers' associations, consumers' associations and ecological associations involved in the production, processing and commercialization of organic products in the Southeast of Brazil (Meirelles, n.d.). Ecovida was create in 1985 (Gonçalves, 2011) and is working in 205 municipalities in the states of São Paulo, Paraná, Santa Catarina and Ríó Grande do Sul. Ecovida is organized in 25 regional groups. And, in total, it involves 240 producer associations (2,140 families approximately), 8 consumers' associations, 35 NGOs and 22 other organizations, such as agro-industries, etc. (OPAC, 2013 & Meirelles, n.d.).

Another example, in a developed country, is the **Organic Farm New Zealand** (OFNZ) that was founded in 2002. OFNZ is composed of 12 regional groups around New Zealand and a National Coordinating Committee (NCC) that is elected by the regional group members. Regional groups involve between 10 and 50 farmer families. In March 2005, 185 farmers belonged to OFNZ. The products certified by OFNZ are fruits, vegetables, nursery plants, eggs, seeds, livestock and some processed products which are sold in local, regional and national markets (IFOAM, 2005).

2.2 RESEARCH PROBLEM

2.2.1 The Complexity of Organic Agriculture and the Need to Learn

Organic farmers work within complex natural systems, using multiple ecological relationships and balances between its different compounds (DeLind, 2000). Therefore,

organic agriculture's sustainability relies on a holistic approach in the sense that it has to be managed as an integrated and inter-related system (Watson *et al.*, 2002).

On the other hand, there is a need to improve knowledge, technology and innovation of the organic practices at farm level, especially for small-scale farmers, in order to increase productivity and, at the same time, protect the environment and health (Calvo *et al.*, 2009).

According to FAO (2002), increasing human capital, particularly farmers' capacity to innovate, leads to an increase in productivity in agriculture. For most organic farmers, agriculture is not a defined set of technologies. Sustainable agriculture is conceived as a process of social learning. Therefore, both information and skills have to be improved.

The complexity of the specific situations due to the diversity of the local conditions involves complex and diverse solutions. Hence, considering socio-cultural aspects and local knowledge is essential for improvement in organic agriculture (FAO, 2002).

2.2.2 Certification in Organic Agriculture and Learning

Certification has become a very relevant issue in organic agriculture in the last decades. It appeared because of the increase and expanding of the organic sector and therefore of the organic products' trade (Herberg, 2007).

Certification systems assure to consumers that the production processes of organic food are based on environmental friendly and animal welfare techniques. Moreover, it also provides guarantee about the organic food's quality (Sacchi, Zanasi & Canavari, 2010?). Additionally, the system contributes to protect producers, retailers and consumers from fraud attempts of labeling products that are not organically grown or processed (González & Nigh, 2005; and Herberg, 2007). Besides proving integrity to the organic production, certification also implies access to markets characterized by products with premium price, (Herberg, 2007) which compensate the internalization of external costs (DeLind, 2000).

Among the different certification schemes, Third-Party certification (TPC) is the mainstream one, and the only one, for the moment, in international trade. Nevertheless, TPC involves the 'imposition' of rules about farming practices which sometimes are very disconnected from the agroecological and socio-economic local context (González & Nigh, 2005). This situation is mainly due to the application of 'models' designed in Western countries with different weather conditions than in tropical areas. Therefore, decisions about techniques and practices are displaced from farmers to foreign 'experts' and farmers are not 'allowed' to use their knowledge if they want to achieve the organic label and its associated premium price. Stone named this process "agricultural deskilling" (González & Nigh, 2005). Delind (2000) argues in her analysis about national standards in organic agriculture under the TPC approach that this system may promote the disappearance of creativity which is necessary for creating knowledge.

One of the conclusions of Campbella *et al.* study, carried out in 2011 about audit systems in the agriculture sector, is that these systems are shaping the pathway that the sustainable strategies have to follow.

Based on this, we should wonder whether TPC system is encouraging or inhibiting the use of local knowledge aimed at achieving a better understanding of agricultural systems and an improvement of the agroecological farming practices.

DeLind (2000) affirms that the aim of the more generic standards in the organic certification was to establish “*a minimum set of criteria-criteria that would serve as a floor rather than a ceiling for maintaining organic quality*”. Hence, it could be argued that generic standards do not encourage farmers to improve their farming practices due to the fact that they do not feel the need or pressure to improve or they are not willing to do so because they reached the ‘ceiling’ of the organic agricultural practices.

2.2.3 Alternative Certification Approaches for Encouraging Learning Processes

As a possible solution to the necessity of improving knowledge about organic practices, Kroma (2008) affirms that networks for interaction, sharing and exchange of knowledge will contribute to the learning process and the achievement of successful innovations at farm level. According to Pretty (1995), “*participation is an essential component of any system of learning*”. Therefore, it would be necessary to involve all the stakeholders and to take into account their views and perspectives.

Due to the increasing interest in organic farming, there is a request for deeper understanding of how farmers face their specific ‘challenges’ through knowledge generation and exchange and dissemination of local innovation (Kroma, 2008).

On the other hand, Participatory Guarantee System (PGS), besides sharing the TPC’s goal of assuring the integrity of the organic production system, also involves an assisting aspect to producers. This aspect aims at supporting farmers in improving farm management in order to increase productivity, which is not included in the TPC approach (Nelson, 2010).

This issue is also addressed by Fonseca *et al.* (2008) who argue that PGS, in contrast with the certification process alone, contributes to build ecological knowledge. Moreover, Herberg (2007) highlights the strong focus of PGS on training all the actors involved within the PGS group: farmers, workers and consumers. Participation of farmers in the certification process may build strong networks between farmers for mutual support and information exchange (Herberg, 2007) and, therefore, develop a collective learning process.

2.2.4 Problem Statement

This research is aimed at analyzing whether and how activities carried out by Centro Ecológico (CE) and Solidarity Littoral Nucleus (SLN), a PGS group, related to the Participatory Guarantee certification system encourage exchange of knowledge, experience, skills and technologies about agroecological practices between SLN’s farmers.

For studying this, the following will be analyzed: (i) the organizational structure and procedures of CE-SLN according to PGS; (ii) stakeholders involved and their responsibilities; (iii) specific activities that contribute to exchange of practices and experiences among farmers; and (iv) values, principles and characteristics shaped by its belonging to the Ecovida Agroecological Networks and the organic movement.

In short, the purpose of this study is exploring whether (and how) Centro Ecológico, within a PGS group, encourages a continual learning process about agroecological practices at farm level among its farmers-members.

Empirical and theoretical approaches are required to analyze the knowledge-diffusion aspect of PGS's initiatives according to its feature of 'Participative learning process and exchange of knowledge'.

2.3 RESEARCH OBJECTIVE AND QUESTIONS

The overall aim of this study is to gain insights about the participative learning process within the PGS certification system approach from a pragmatic view. Specifically, this study is focus on whether -and how- the theoretical '*Participatory aspect*' of PGS is actually being used or could be utilized for exchange of knowledge, know-how, skills, technology and experiences about agroecological practices among its members, both farmers and technicians. This will be analyzed in the PGS group of Solidarity Littoral North and the Centro Ecológico NGO that belong to the Ecovida Agroecological Network in the South of Brazil.

The specific **research objectives** are:

- Explore the particular 'PGS-staging' by CE-SLN.
- Identify activities that promote exchange among farmers and between farmers and technicians, assess how much, and analyze its contributing/discouraging aspects.
- Recognize key factors, roles and values –internal and external to the PGS process- that encourage exchange among farmers and between farmers and technicians.

Therefore, the **research questions and subquestions** are:

How does Centro Ecológico-Ecovida, through PGS certification and other activities, influence changes in the agroecological farming practices of Solidarity Littoral Nucleus' farmers?

- 1. What are Ecovida, Solidarity Littoral Nucleus and Centro Ecológico? How are the internal organization and certification procedure –of organic food- within Centro Ecológico and Solidarity Littoral Nucleus?**
 - a. What are the identity, methods and activities of Centro Ecológico and Ecovida?
 - b. How are the organizational spaces within Centro Ecológico-Solidarity Littoral Nucleus and Ecovida?
 - c. How are the organizational structure and the steps along the certification process of organic food?
 - d. Who are the stakeholders involved? What are their tasks and responsibilities?
- 2. How do Centro Ecológico and Solidarity Littoral Nucleus, based on the PGS certification scheme, encourage exchange of knowledge, skills, techniques**

and know-how about agroecological farming among the SLN's farmer-members?

- a. How and when are the experiences, knowledge, techniques exchanged?
- b. Who are the actors involved?
- c. Which are the contributing and discouraging aspects to exchange?

2.4 METHODS

In order to understand the PGS process and its potential contribution to a participative learning process about agroecological farming practices, a case study research was conducted in the North Littoral area of the Rio Grande do Sul state (Brazil). The main focus of the research was the Solidarity Littoral Nucleus (SLN) and the NGO Centro Ecológico-North Littoral and the Ecovida Agroecological Network. However, other key actors in the territory, such as, EMATER/RS, a rural assistance organization, or ANAMA, another NGO that provided agroecological assistance to smallholder farmers in the territory, were also analyzed among other actors.

Moreover, the Serra Regional Nucleus, another PGS group that belonged to Ecovida, was also visited during one week in November 2012 in order to achieve new insights about the PGS process in the Ecovida Agroecological Network.

The fieldwork was conducted from September 2012 until January 2013. The first three months, the fieldwork was combined with an internship. During this first phase, an important part of the participant observation was carried out as well as a Seminar of the Organic Banana with the SLN's farmers and one of the CE's technicians. The last two months were dedicated exclusively for fieldwork thesis during which semi-structured interviews were conducted besides more participant observations.

A progressive approach to farmers/processors of SLN and CE's technicians was very useful in order to gain confidence and trust from them and to understand the whole 'picture'. It means that especially during the first encounter, instead of asking questions to farmers/technicians related to my research –acting as a 'inquiring person'–, I tried to become 'one of them' in somehow participating in their activities, helping them, sharing daily moments and having different type of conversations combining technical with personal issues. Moreover, to spend some days living with some farmer families was very valuable for understanding the farmers' views and lives. Recompilation and first review of documents as well as un-structured interviews were undertaken along the whole 5 months stay.

2.4.1 Research Location

This study was conducted in the North Littoral area of the Rio Grande do Sul (RS) state, in the South of Brazil. Specifically, the research area consisted of the organic family farmers who belonged to the Solidarity Littoral Nucleus (SLN), a PGS group that was part of Ecovida Agroecological Network. The NGO Centro Ecológico-North Littoral was the organization that accompanied the SLN's members and provided technical assistance to them.

In this region, agriculture is an important economic sector. It is characterized by family farming style with fields around 20 hectares, highly diversified and medium-level of capitalization. There are arable, livestock and mixed farms (Vargas, 2007).

Additionally, the practice of organic farming is more extended than in most countries in Latin America and Europe (Lundberg & Moberg, 2009). And most of them belong to the Solidarity Littoral Nucleus and the Ecovida Agroecological Network. Moreover, there is a high increase of farms producing organically that also contributes to restoring the environment including the Atlantic rainforest (Mata Atlântica) (Lundberg & Moberg, 2009), a natural protected area included in the UNESCO¹ World Network of Biosphere Reserve (Centro Ecológico, 2012).

The most prevalent crop since the 80s, approximately, has been the banana –organic and conventional- even though the weather conditions were not the most appropriate for this crop. However, sugarcane, the most common crop until the 80s, approximately, was replaced by banana which demanded less effort and work than sugarcane.

On the other hand, governmental organizations were working in the area, such as municipalities, the Agency for Technical Assistance and Rural Extension Service (EMATER/RS), and the Rural Union of Workers. Besides that, the social movement was very rooted in the territory, such as Movement of Small Farmers (in Portuguese, MPA) or the Movement of the Peasant Women (in Portuguese, MMC) (Centro Ecológico, 2012 & Meirelles, 2006) and the Ecovida Agroecological Network. Furthermore, there is a high level of associationism in the area. The ecological farmers associations present the following common characteristics: practicing of organic agriculture, organization in small groups, small-scale processing and the use of alternative channels to sell their products (Meirelles, 2006).

Centro Ecológico, a member of the Ecovida Agroecological Network, emerged as a research center working for an alternative path for developing agriculture without agrochemicals, in contrast to the chemical-intensive model highly practiced in Rio Grande do Sul, Brazil (Lundberg & Moberg 2009).

The research area consisted of the Solidarity Littoral Nucleus' area (SLN) which included several municipalities in the North of Rio Grande do Sul state, South of Brazil. In the SLN's area there were two NGOs working with organic family farmers: Centro Ecológico (CE) and ANAMA (Ação Nascente Maquiné). However, although these three areas have some municipalities in common, they do not coincide completely (fig. 2).

¹ United Nations Educational, Scientific and Cultural Organization.

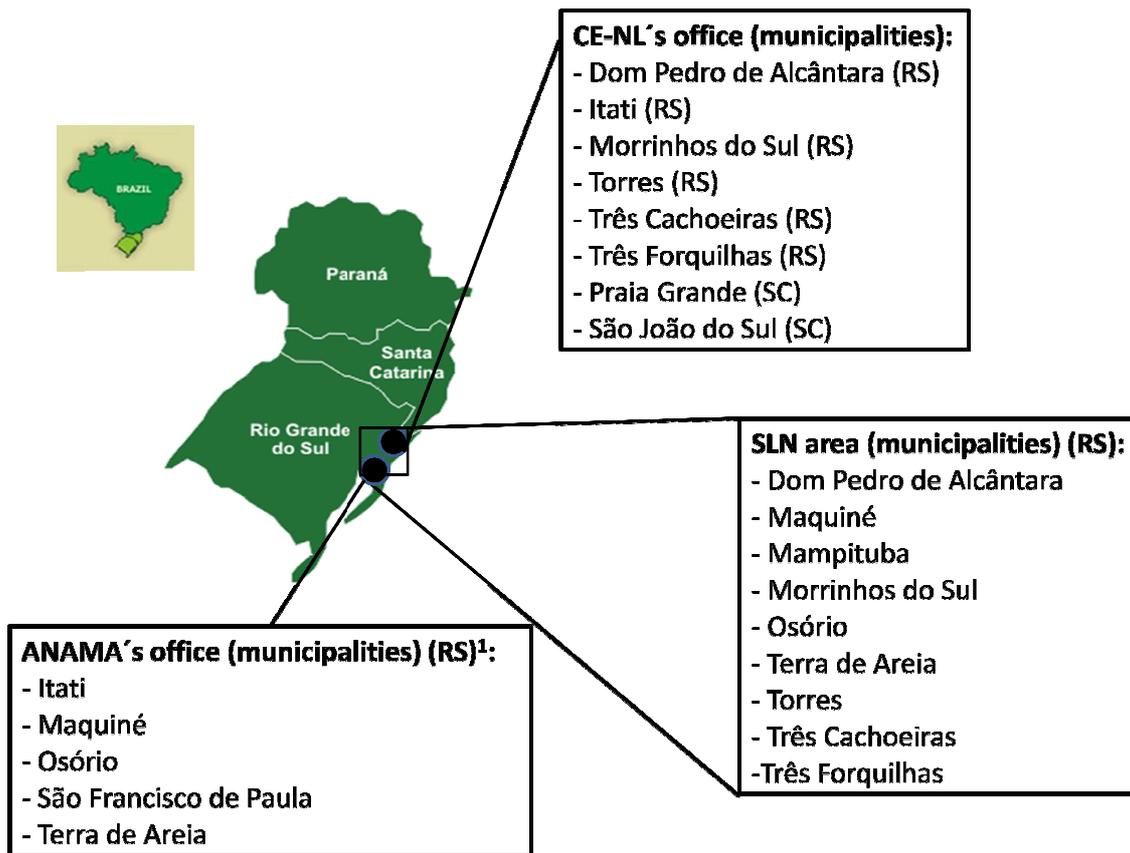


Figure 2. Location of Solidarity Littoral Nucleus, Centro Ecológico and ANAMA areas

Source: OPAC, 2013; 00-II & ANAMA 2012, pers. comm. 31 Jul.

1: These were the municipalities where ANAMA works providing technical assistance. However, the ANAMA's environmental working line was undertaken in other municipalities.

2.4.2 Data Collection

The data collection techniques used and actors involved are presented in the following table (table 2). It is important to mention that the initial idea was to decide in the field on the specific crop and disease or pest most extended and/or harmful for the SLN's farmers in order to study the knowledge exchange and learning process about a specific, common and relevant agricultural challenge for SLN's farmers.

For this reason, a *Technical Seminar of Organic Banana* was conducted in order to get insights about the common problems in the banana production in the study area as well as the techniques/products that farmers were familiar with. On the other hand, this seminar was also demanded by the SLN's banana farmers in order to increase their knowledge. Therefore, this seminar was conducted according to the farmer-to-farmer methodology.

Afterwards, based on the information collected in this seminar, a series of pilot deep semi-structured interviews were carried out. However, these pilot interviews revealed that it was necessary to broaden the research scope to a learning process about agroecological management from a holistic perspective instead of focusing on a specific disease.

Table 2. Data Collection Techniques and Actors Involved

Data Collection Techniques	Type of Activities/Documents	Actors Involved
Participant Observation	<ul style="list-style-type: none"> • North Littoral Area: - CE-North Littoral: Courses, Field Visits received by CE-SLN, Peer Visit, Workshop, Açai Festival, Annual Assessment Meeting of CE, diverse meetings, Technical Assistance Visits by CE-North Littoral ONG, Informal Encountering, CE's Research Activities, Visit of the Brazilian Ministry of Agriculture, Livestock and Supply for Registration of Agroindustries, Visit to consumer cooperative shops, Visit to several local organic fairs (rural and urban), Visit to family agroindustries and farmers' farms and houses, Visit to the OPAC office and farmer cooperative, among others. - Emater: Technical Assistance Visits • Serra Area: Verification Visit, Farmer Group Meeting, Technical Assistance Visits by CE-Serra ONG, Visit to the Farmer Cooperative 	<ul style="list-style-type: none"> • North Littoral Area: CE-North Littoral's technicians, SLN's farmers and processors, 1 conventional farmer, 1 organic farmer with TPC certification, EMATER/RS's technicians, farmers and technicians from other Brazilian regions, researchers, organic consumers, consumer cooperatives' members, OPAC's employee, and 1 farmer cooperative's employee, among others. • Serra Area: CE-Serra's technicians, organic farmers and processors of Serra Regional Nucleus and the farmer cooperative's president, among others.
Deep-Semi Structured Interviews	-	<ul style="list-style-type: none"> • North Littoral Area: 33 SLN's farmers- processors - included 2 SLN's coordinators-, 1 CE's technician and 2 coordinators, 3 EMATER/RS's technicians, 1 OPAC-Ecovida's employee, 1 farmer cooperative's employee, 1 consumer cooperative member and 1 freelance agricultural technician.
Un-Structured Interviews	-	<ul style="list-style-type: none"> • North Littoral Area (aprox.): 45 SLN's farmers and processors, 2 CE-North Littoral's coordinators and 4 technicians, 2 EMATER/RS's technicians, 1 OPAC-Ecovida's employee, 1 farmer cooperative's employee, 5 consumer cooperative members, 1 freelance agricultural technician, 1 organic farmer with TPC certification and 1 former SLN's farmer. • Serra Area: 1 CE-Serra's technician and 2 coordinators, and 1 organic farmer.
Technical Seminar of Organic Banana	-	<ul style="list-style-type: none"> • North Littoral Area: 44 Banana farmers of the SLN, 1 CE's technician and 1 ANAMA's technician.
Review of Documents	CE-North Littoral's working documents and projects, minutes of SLN meetings, minutes of farmer groups' meetings, Ecovida and CE's booklets, farmers' certification documents, Ecovida's certification manual, regulations and internal procedure, Brazilian Ministry of Agriculture's booklets, OPAC's working documents and farmer cooperative's working documents.	CE-North Littoral, Ecovida, SLN as Regional Nucleus, SLN's farmer groups, Brazilian Ministry of Agriculture, OPAC-Ecovida, and SLN's farmer cooperative.

Source: Self-design.

2.4.3 Research's Participants: Informants

All the CE-North Littoral's technicians and coordinators were interviewed as well as the rest of the agrarian technicians that was possible, who were also working in the researched area.

Related to SLN farmers/processors, un-structured interviews were conducted randomly. However, a number of them were selected for carrying out (deep) semi-structured interviews. This selection was carried out partly random and partly guided. The purpose was to include a diversity of factors that could affect the perspectives about the topic studied in order to have the most complete possible 'picture' of the topic and incorporate different actors' views. Nevertheless, no statistical analysis was undertaken to study any type of relation among factors or between factors and effects.

The sample was determined randomly but taking into consideration the following factors in order to include:

- Gender (male, female).
- Farmer groups: 16 farmer groups interviewed out of 18.
- Length trajectory of the farmer groups (long, intermediate and short).
- Length trajectory of the farmers within the SLN and Ecovida (long, intermediate and short).
- Roles of the farmers within the farmer groups (leaders and non-leaders categories).
- Different farm size (large, intermediate and small).
- Levels of crop diversification (monoculture and polyculture farmers considering that the main crop is banana), and
- Level recognition of farmers according to their knowledge, skills and techniques about agroecological practices by peer-farmers (references-farmers and non-references-farmers).

Due to the lack of previous researches about this topic and the driving factors of participatory learning process within PGS, it was considered appropriate to specify the main characteristics of the farmers/processors interviewed for this study. It is important to take into account that these features could affect the results of this study. The following table shows the number of farmers/processors interviewed according to the previous aspects (table 3):

Table 3. Farmers/Processors Interviewed and their Main Characteristics

Main Characteristic of SLN Farmers/Processors Interviewed		N° SLN's Farmers/Processors Interviewed
Gender	Male	25
	Female	8
Length Trajectory of farmer groups belonging to SLN-Ecovida	Long-trajectory (1991-2000): ACERT, APEMSUL, APELCAM, Roça da Estância, Costa Verde and Rio Bonito.	14
	Intermediate-trajectory (2001-2009): GEARD, Morro Azul, GESA, Bons Ventos Osório, Terra Viva and GPEP.	14
	Short-trajectory (2010-today): Terra de Areia, Boa Esperança, Vale do Maquiné and Ecotorres do José.	5
Length Trajectory of farmers as SLN-Ecovida's member	Long-trajectory (1991-2000)	13
	Intermediate-trajectory (2001-2009)	16
	Short-trajectory (2010-today)	4
Leadership: articulating the commercialization and the farmer group in general	Leaders	10
	Non-Leaders	23
Farm's Size	Large farm (certified organically through PGS) (> 12 ha)	6
	Intermediate farm (certified organically through PGS) (5,1-12 ha)	19
	Small farm (certified organically through PGS) (0,1-5 ha)	8
Farm Crop Diversification ¹	Polyculture	25
	Monoculture	8
Farmers who had a recognition by peer-farmers due to their knowledge, skills and techniques in agroecological practices	References-Farmers	4
	Non-References Farmers	29
TOTAL OF FARMERS/PROCESSORS INTERVIEWED		33²

Source: Self-design based on the interviewees' characteristics.

1: Considering that the main crop is the banana.

2: In total, 16 farmer groups were interviewed out of the 18 farmer groups that belonged to SLN.

Moreover, other factors also affected the sampling such as the particular possibilities of conducting the interviews due to different reasons, such as, farms location, farmers' personal responsibilities, holidays, etc. However, the farmers' availability for participating was very high.

2.4.4 Data Analysis

All the data collected through the different sources mentioned before was transcribed, codified and analyzed according to the methodological triangulation method. Moreover, different theoretical approaches were discussed and contrasted with this case study.

2.4.5 Ethical Considerations

Even though the research problem was neither a polemic nor sensitive issue some ethical considerations were taken into account, such as, to inform properly of the purpose of the research to all the participants, to guarantee the anonymity of the respondents and to respect the confidentiality when it was required.

On the other hand, this report will be shared with the research's participants and every person who will be interested in the topic as a contribution to the 'learning community'.

2.4.6 Limitations of the Research

Besides the frequent limitations, such as, the language, time or working individually without the possibility of discussing different perspectives within a team, the main limitation of this research was not having the opportunity to participate in all the activities that are presented in this study, and specially the PGS verification visits within SLN and, Ecovida meetings. Hence, the information about these activities only came from several interviews. Consequently, this data could not be contrasted with other data sources and was not as complete as the activities' information in which participant observation was also undertaken besides the interviews.

Nevertheless, considering the research fieldwork's duration, 2-5 months, and the high diversity of activities related to the PGS process, it could be affirmed that participant observation was carried out in a high percentage of the activities related to PGS within SLN-CE in which the interaction with a considerable number actors and stakeholders was possible.

CHAPTER 3. ECOVIDA-CENTRO ECOLÓGICO AND PGS CERTIFICATION SYSTEM

This chapter describes how Participatory Guarantee System (PGS), a certification system for organic food, was carried out within the Ecovida Agroecological Network and Centro Ecológico, including their internal organization. Moreover, it will be explained who stakeholders were involved, which were the PGS steps for achieving the organic certificate as well as the verification system to control the compliance with the organic requirements.

For understanding the PGS process within Ecovida and the Solidarity Littoral Nucleus (SLN)²-CE, it is first necessary to comprehend the identity of the Ecovida Agroecological Network and Centro Ecológico. This is due to the following reasons:

- PGS, as the certification system that exists nowadays, was designed as far as possible, under the umbrella of the principles and methodology of Ecovida. And, Centro Ecológico, for being a member of Ecovida Network, shared the same identity, principles and methodology of Ecovida, and
- PGS cannot be understood as an isolated activity, but as an activity integrated with the rest of the actions carried out by Ecovida and Centro Ecológico, within SLN.

Therefore PGS, carried out by Ecovida and SLN-CE, involved the identity of Ecovida and SLN Networks, as well as Centro Ecológico.

3.1 WHAT DOES ECOVIDA MOVE TOWARDS? AND HOW?

The identity of Ecovida and CE Project was moving towards **agroecology** understood in a broad sense. This meaning of agroecology was not just the 'simple' substitution of chemical inputs for organic ones, but a much more complex and holistic view of farming. Agroecology meant the integration of agro-systems within natural systems, the understanding of the interrelations among all the elements of each system (agricultural and natural) and taking advance of it. As Laércio Meirelles, one of the CE coordinators, explained during one '*Basic Course of Organic Agriculture*' to the 'new' organic farmers (not literally): *You have to let Nature work for you* (02-PO³).

Although this was the meaning of agroecological farming that Ecovida-CE transmitted, it was not embodied by all the farmers participating within the Solidarity Littoral Regional Nucleus, the regional network studied. Curiously, this meaning was mainly, although not only, shared by the farmers who started first to practice agroecological farming in this region. On the other hand, other farmers who also belonged to the Solidarity Littoral Nucleus (SLN) did not show this holistic vision about agroecology. These farmers were closer to the vision of substitution of inputs (namely 'organic agriculture' instead of 'agroecology' in the South of Brazil). Furthermore, there were other groups of farmers who were attracted by the opportunities provided by the growing organic markets in the region.

² Solidarity Littoral Nucleus (SLN) was one of the regional units of Ecovida. SLN was a Regional Nucleus acting as a network that was compounded by farmer/processor groups, rural women groups, farmer cooperative, consumer cooperatives, Environmental Education Network, and Centro Ecológico as a technical assistance NGO.

³ Code of the fieldwork notes of the participant observation.

The manner in which agroecology was understood by Ecovida-CE also included *'doing together'*. It means smallholder farmers and grassroots working together **towards and through agroecology** because agroecology was at the same time the goal to achieve and the path to walk. This *'doing together'* and *'through agroecology'* were expressions used in the agroecological movement. They reflected the idea of *'small forces'* joined together to become a *'big force'*. This means that the concept of agroecology took action as a movement.

This concept and action were embodied as the **agroecological movement** that combined the meaning of agroecology, as it was described above, and the **action taken by a group**, as a movement in its literal and figurative sense. The following picture (fig. 3) taken from a presentation of Laércio Meirelles about the PGS carried out in the SLN represents the 'group feeling' described above.



Figure 3. Group Feeling in Agroecology

Source: Meirelles, n.d.

On the other hand, the idea of *'doing together'* could also be related with the **method of working in groups** instead of working with individual stakeholders. This was reflected within each regional network that belonged to Ecovida (Regional Nucleus), which was constituted by small groups of farmers/processors, groups of consumers (consumer cooperatives), groups of environmentalists and groups of technicians (organizations for technological assistance).

However, in the case of farmer/processor groups, it could be other reasons, more pragmatic, that explained the fact of working in small groups, such as: common commercialization, easier exchange of information (operational and technical), mobilization of people, standing by the leaders within the farmer groups, promoting farmer empowerment, giving more autonomy and respecting the specific particularities of each group, etc.

Agroecology was however not only a farming production system; it also involved other fields of action, as the agroecological movement claimed. It also implicated an active mobilization in the construction of a *'new society'*. A new society based on new conditions for **social and economic** relationships between smallholder farmers and urban workers within alternative organizational models. And this *'new society'* involved social values, such as respect, trust,

justice and equality, as well as the reinforcement of popular and minority voices. Moreover, it involved taking action within the **political** sphere in order to shape policies that enforced the Ecovida-CE Project (Valdemar Arl, 2007).

Hence, in order to spread and, therefore, reinforce the agroecological movement in the region, state, nation and worldwide, two interconnected aspects took a predominant place. **Training** in technical aspects of agroecology and **showing and exchanging** agroecological experiences (Valdemar Arl, 2007).

This identity and especially the importance of the **formative** and the **exchange of experience and knowledge** aspects were very present among some farmers-members of SLN and CE technicians as it is reflected in some interviews and fieldwork notes. These are some examples:

One interviewee's description of the CE's work:

"I like to summarize CE's work as technical assistance and formation in organic agriculture or technical assistance and formation in production and consumption of organic products." (34-II⁴).

A farmer's comment during a farmer group meeting explaining to the group members about the previous course organized by CE:

"You don't know what you lost. It was very interesting." (19-PO).

A farmer explaining her trajectory as a farmer (not all the sentences are literal):

I only studied until high-school. During my life everybody always said that it's not necessary to study to be a farmer. So, I stopped my studies. But, now, I think that even for being a farmer it's necessary to study. Now, "I'm always learning and looking for new things." (15-II).

A farmer talking about the exchange ("troca") of knowledge, ideas, opinions, etc. between farmers within the SLN:

"Within the nucleus (SLN), I believe that everybody that attends a course automatically passes the information to his/her group (farmer/processor group). Nevertheless, I (also) passed a lot of information to my community (to my community's farmers, neighbors)". (15-II).

And a farmer describing her experience during exchange visits organized by CE:

"I think that I learnt a lot in the exchange visits. Every person shows how he/she does the work. I learnt a lot of things." (02-II).

⁴ Code of the interview source of this information to guarantee anonymity to the interviewees.

3.2 HOW WAS PGS INTEGRATED INTO THE ECOVIDA-CENTRO ECOLÓGICO PROJECT? AND WHY?

Ecovida-CE was always against the certification systems in organic agriculture. They supported the idea of guaranteeing organic standards in the food produced and processed by the farmers who belonged to Ecovida. These organic requirements were based on the IFOAM's principles and standards. Nevertheless, Ecovida-CE implemented a 'Social Control System' for guaranteeing the compliance of organic standards instead of a certification system.

Due to the Brazilian law *nº 007/1999, 17th May 1999* about production, processing and certification of organic food only recognized the Third Party Certification system for certifying food, in 2002 the Organic Agriculture Group (in Portuguese, GAO) was created. GAO, supported by Ecovida, was aimed at lobbying the Brazilian government in order to include PGS in the legislation. The result was the new Brazilian organic law *nº 10.381/2003, 23th December 2003* that recognized officially the PGS as a certification system (Meirelles, n.d., and Bertoncello & Bellon, 2008). Therefore, it was possible to 'match' the politicians' interests to the GAO-Ecovida's vision of agroecology. And the PGS system, recognized by the Brazilian law and carried out by Ecovida and the SLN, included partly the scheme of its previous 'Social Control System' already implemented.

Consequently, PGS *per se* partly shared the principles and methodology of Ecovida-CE, as far as possible. And the specific way that PGS was carried out by Ecovida-SLN was what really identified PGS with Ecovida-CE Project. Additionally, the particular implementation of PGS undertaken by Ecovida-SLN was what highly promoted Knowledge Exchange and Participatory Learning Process.

As one of the CE's members, who fought the hardest for the legal recognition of PGS in Brazil, commented PGS as an isolated activity did not make sense. It had to be understood within the process of producing, processing and commercializing organic food. Additionally, according to Valdemar Arl (2007), the certification process should not be separated from the whole process of agroecology's organization and construction. This is because the participative certification process also involved relationships within the community, exchange of experiences, formative process or technical assistance, interactions with consumers, meetings and encountering.

Perhaps, also because of this, PGS was undertaken within SLN in such an integrated way with the rest of the activities carried out by the farmer groups and CE. It is also possible that, due to the relevance of the two aspects within Ecovida-CE Project, namely: formation and exchange of experience/knowledge/skills/techniques, it was encouraged that the PGS performance also contributed to them.

3.3 HOW WERE THE ECOVIDA'S AND SLN'S ORGANIZATIONAL STRUCTURE FOR PGS? HOW WAS PGS CARRIED OUT BY ECOVIDA AND SLN-CE?

PGS, as understood by Ecovida-CE, was a process for generating credibility within a network and carried out in a decentralized way. This process had to respect the local characteristics,

improve agroecology and guarantee the quality of the organic products through participation and commitment of farmers, processors, and technicians. Participative certification was based on interaction and social control. Social control means the collective responsibility of ‘checking’ the compliance of peer-farmers’ agricultural practices according to the organic requirements. There was not a specific activity for social control but it was undertaken by all the stakeholders during any routine activity, such as, meetings, local fairs, CE’s technical visits, etc. (Valdemar Arl, 2007 & 02-II).

As it was said before, PGS was recognized by the Brazilian legislation (law n° 10.381/2003, 23th December 2003) and included in the Brazilian System of Assessment of Organic Compliance (*Sistema Brasileiro de Avaliação da Conformidade Orgânica – SisOrg*). According to the organic law n° 10.381/2003, there were three recognized systems to guarantee the organic products’ quality: Third Party Certification (TPC), Participatory Guarantee Systems (PGS) and Social Control (SC). The first two are included in the SisOrg (Ministério da Agricultura, Pecuária e Abastecimento, 2008).

PGS was composed of two types of **Members** and the **Participative Organization of Assessment Compliance** (*Organismo Participativo de Avaliação da Conformidade – OPAC*). These two types of members were: **Providers** (producers, processors, shippers, sellers and stores) and **Collaborators** (consumers and assistance technical organizations’ technicians) (Ministério da Agricultura, Pecuária e Abastecimento, 2008). The **OPAC** was the judicial responsible of the activities of the PGS. Its organizational structure includes an Assessment Commission/Ethic Commission (*Comissão de Avaliação\Comissão de Ética*) and Resource Commission (*Comissão de Recursos*) (Associação Ecovida de Certificação Participativa, n.d.). The following figure represents the general scheme of the Brazilian System of Assessment of Organic Compliance (*SisOrg*) (fig. 4):

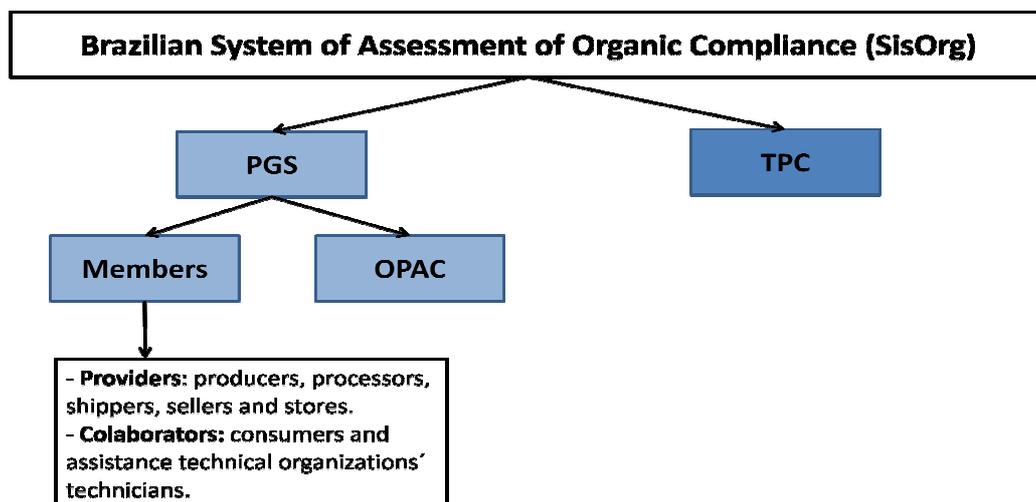


Figure 4. The Brazilian System of Assessment of Organic Compliance (SisOrg)

Source: Self-designed based on Ministério da Agricultura, Pecuária e Abastecimento, 2008

It is important to remark that the figure above (fig. 4) corresponds to the general scheme approved by the Brazilian Ministry of Agriculture, Livestock and Supply (in Portuguese, MAPA). However, the difference with the SLN is that only producers, processors and technicians were

directly involved in the PGS process, and also sellers and consumers but in a very indirect and 'light' way.

The way that the members and OPAC, represented in the figure above (fig. 4), took part in the PGS process within Ecovida and SLN is explained in the following two sections: *3.4 Ecovida and SLN's Organizational Structure for PGS and 3.5 Certification Process and Social Control*.

3.4 ECOVIDA AND SLN'S ORGANIZATIONAL STRUCTURE FOR PGS

Ecovida Agroecological Network related to its certification activity had the **organizational structure** that is shown in the next diagram (fig. 5). As it is represented, there were three levels of organization in the Ecovida Agroecological Network: Farmer Group, Regional Nucleus and Ecovida Association level.

- **Farmer Groups:** were the basic organizational unit or 'cell' and the main gathering space within the PGS process and Ecovida Network. They are composed by family farmers/processors. Laércio Meirelles, one of the CE-North Littoral's coordinators, explained this by comparing the Ecovida Network with a human being or plant. He said (not literally) that farmer groups are the cells, that together form the tissues, that together form the organs, that together form the human body or the plant. Each element is completely necessary for the correct working of the human body, the same as in the Ecovida Agroecological Network.
- **Regional Nuclei (*Núcleos Regionais*):** were the regional functional units. Each regional nucleus was constituted by different types of stakeholders located in the region. In the case of the SLN, the stakeholders were: farmer groups; a farmer cooperative; consumer cooperatives; rural women groups; an environmental education network and two local NGOs, ANAMA and Centro Ecológico-North Littoral. The SLN members, organizational spaces and location are described in depth in the chapter 4. *Besides PGS, what more is Ecovida and SLN?*
- **Ecovida Association of Participative Certification –OPAC (*Associação Ecovida de Certificação Participativa*):** was the legal entity responsible for Participatory Certification, Promotion and Formation in Environmental and Agroecological issues.

ECOVIDA AGROECOLOGICAL NETWORK

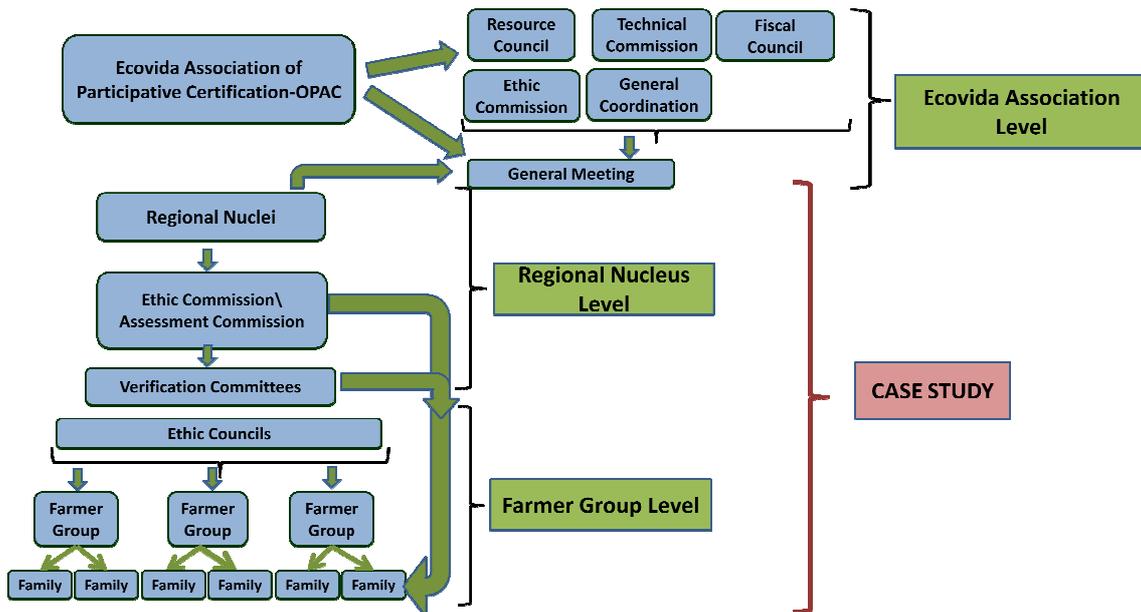


Figure 5. Ecovida’s Organizational Structure for PGS

Source: Modified and translated from Terra do Futuro, n.d.

As it was explained before, the Ecovida Network was constituted by regional networks that were the Regional Nuclei. These Regional Nuclei with the Ecovida Association of Participative Certification-OPAC were the two organizational entities. Within these two organizational entities, there were several task groups that had different responsibilities along the certification process.

At **Farmer Group level**, the task group was the **Ethic Council**. It was in charge of the Peer Visits and Social Control within its farmer group. Generally, all the farmer-members were part of the Ethic Council; therefore, almost all of them participated in the peer visits and all were responsible of social control.

At **Regional Nucleus level**, it means within each Regional Nucleus, the task groups were: the **Ethic Commission or Assessment Commission** and the **Verification Committee**. The Ethic Commission consisted of 2 members of each farmer group. From the Ethic Commission several Verification Committees were created. Each Verification Committee was constituted by 3 farmers from 3 different farmer groups. Each Verification Committee undertook the Verification Visit⁵ to farmers who belonged to different farmer groups.

These 3 task groups: Ethic Council, Ethic Commission and Verification Committees were the most involved in the ordinary certification process. The following diagram shows this organizational scheme and activities of these three task groups (fig. 6).

⁵ Verification Visit consisted in visiting a peer farmer’s field in order to check the compliance to the organic requirements and documents. This is a step in the PGS process that will be explained in depth in the section 3.5. *Certification Process and Social Control*.

The rest of the task groups were at **Ecovida Association level**: the Resource Council, Technical Commission, General Coordination, Ethic Commission and Fiscal Council. They were involved in more punctual tasks.

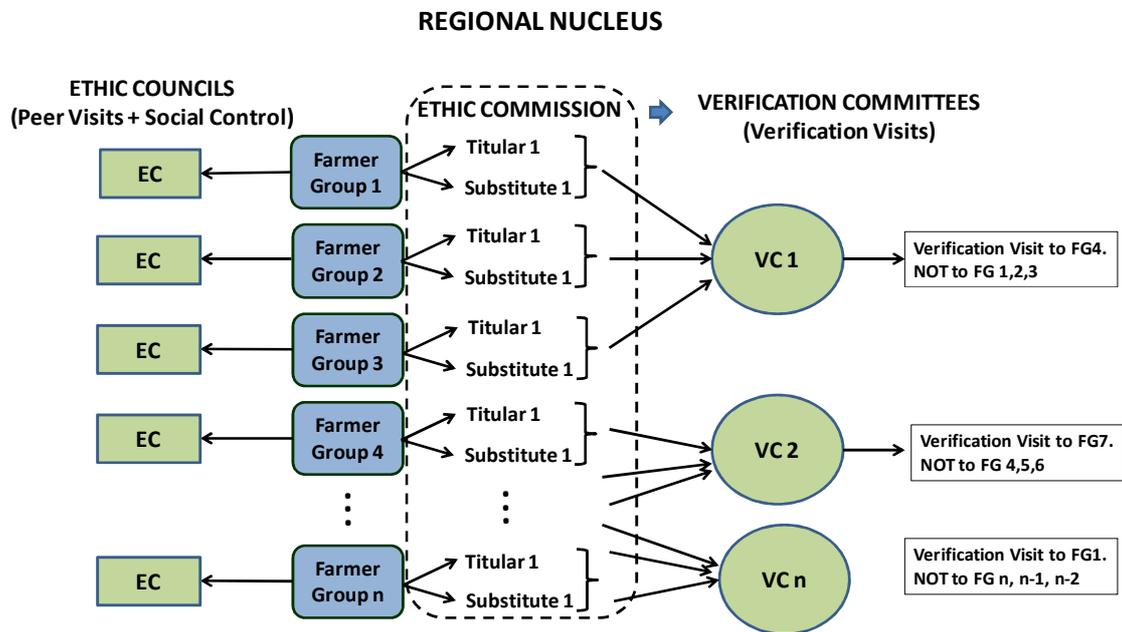


Figure 6. Detailed Scheme of the Ethic Commission, Verification Committees and the Ethic Council in the SLN

Source: Fieldwork data.

The following textbox explains in detail the task groups and their responsibilities for each organizational level (tbx. 1):

Textbox 1. Responsibilities of the Task Groups of PGS in the Ecovida Agroecological Network

Organizational Levels	Name	Members/Participants	Responsibility
Farmer Group Level	Ethic Council (<i>Conselho de Ética</i>)	Farmer/Processor members of the farmer group	Undertake peer visits and social control of farmers/processors belonging to his/her same farmer group.
Solidarity Littoral Nucleus Level (Regional Nucleus Level)	Ethic Commission/Assessment Commission (<i>Comissão de Ética/Comissão de Avaliação</i>)	Two persons from each farmers/processors group (1 titular and 1 substitute) and a coordinator.	Assess the production and processing according to the Ecovida's organic regulations.
	Verification Committee (<i>Comitê de Verificação</i>)	3 farmers/processors who belonged to different farmer groups, within the SLN.	- Undertake, annually, verification visits (<i>visitas de verificação</i>) in the sampled farms and agroindustries, within the SLN. - Assess farmers/processors compliance to the Ecovida's regulations.
Ecovida Association Level	Ethic Commission/Assessment Commission (<i>Comissão de Ética/Comissão de Avaliação</i>)	Coordinators of each Nucleus' Ethic Commission	Update the procedures manual and technical rules of the Ecovida Association of Participative Certification.
	Resource Council (<i>Conselho de Recursos</i>)	2 persons selected from each state where Ecovida was present ¹	Take decisions related to the appeals and complaints addressed by farmers/processors related to certification issues.
	Technical Commission/Technical Committee (<i>Comissão Técnica/Comitê Técnico</i>)	3 persons: 1 commissioner from each state ¹	- Guarantee the organic products quality and the certification process. - Decide the inputs and products allowed for the organic farming and processing.
	Fiscal Council (<i>Conselho Fiscal</i>)	3 persons	Control the financial activities of Ecovida Association.
	General Coordination (<i>Coordenação Geral</i>)	president, secretary, treasurer and 3 commissioners (1 from each state) ¹	- Assess the performance/compliance of Ecovida Association's regulations. - Coordinate programs undertaken by Ecovida Association.
	General Meeting (<i>Assembleia Geral</i>)	President and 1/3 of Ecovida's members	Maximum space for addressing issues in Ecovida Association.

Source: Self-design based on fieldwork data.

The next diagram (fig. 7) shows how the certification process started from the bottom, from the families of farmers and processors who belonged to the farmer groups, until the OPAC. The direction of the arrows represents the information flow during the PGS process.

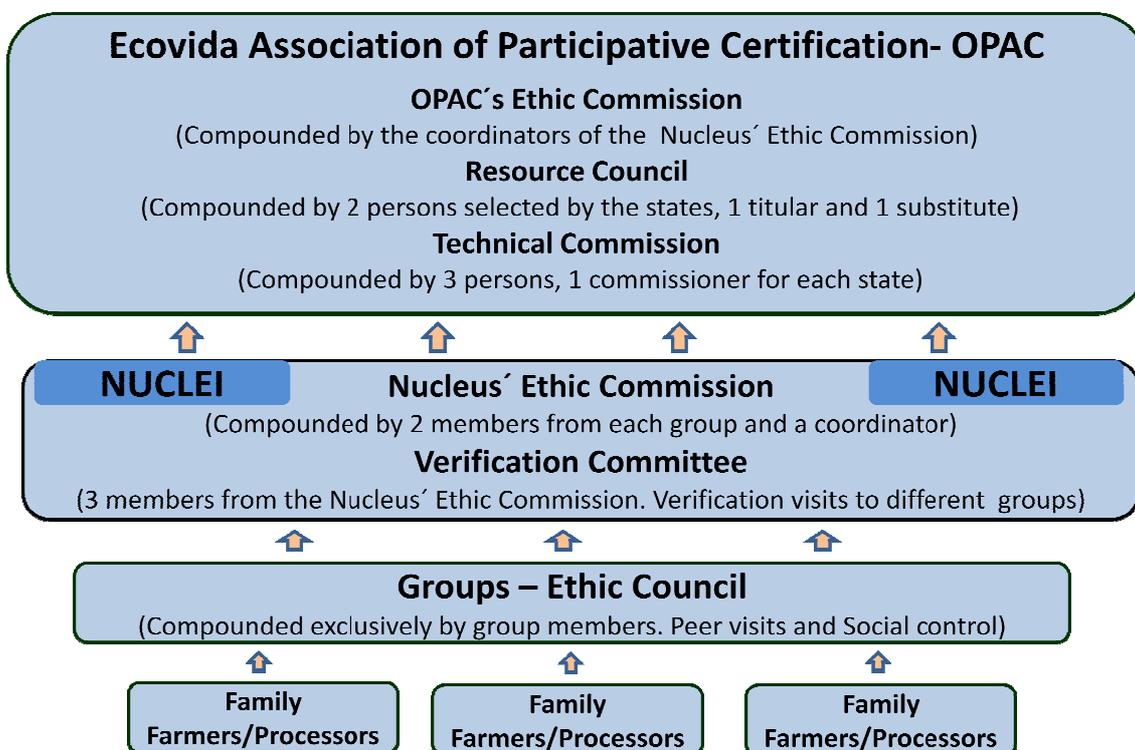


Figure 7. PGS Information Flow
Source: Translated from Terra do Futuro, n.d.

3.5 CERTIFICATION PROCESS AND SOCIAL CONTROL

This section describes the certification process carried out by Ecovida and SLN along the different organizational levels. It also explains the steps along the PGS process.

PGS carried out by Ecovida and SLN was a process that involved different stakeholders at different levels. It started in the farmer/processor's family, engaged the participation of the grassroots groups, the SLN and the Ecovida Association (fig. 8). It is important to mention the key role that the CE's technicians played accompanying all the process along the different levels of participation.

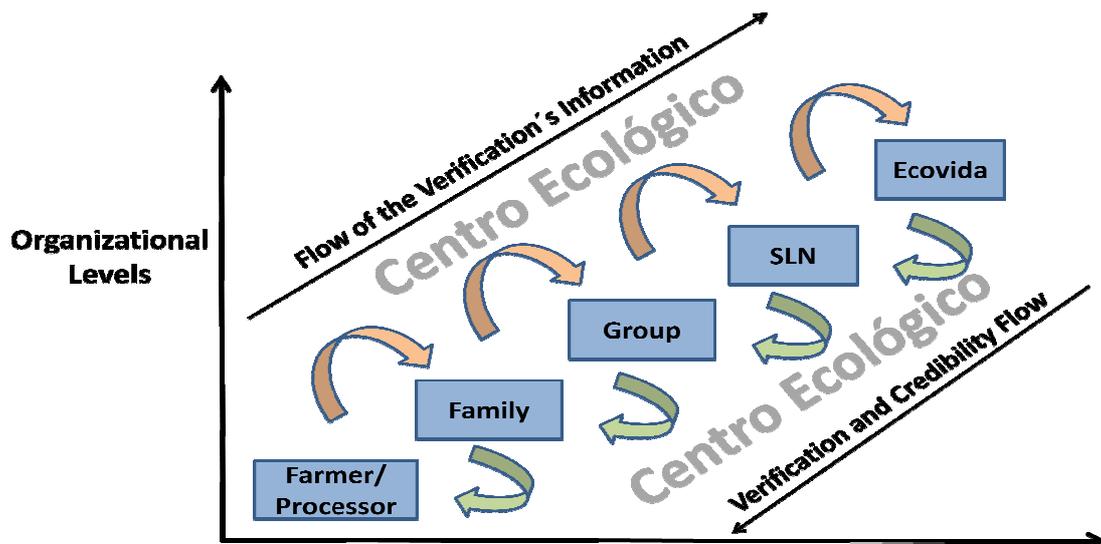


Figure 8. Flow of Information and Credibility along the PGS Certification Process in Ecovida
 Source: Self-designed based on Associação Ecovida de Certificação Participativa, n.d., and 36-II, 40-II, 41-II & 42-II.

As it is shown in the graph above (fig. 8) the information related to the PGS certification flows from the farmers/processors to the upper levels of organization within the Ecovida Association. Therefore, it was a bottom-up flow of information related to the certification. But, at the same time, there was a process of verification and lending credibility that came from top to down and used the same organizational levels that the bottom-up flow.

Steps within the PGS Certification Process

For a 'new' farmer, a farmer who did not belong to Ecovida before, the PGS process started when he/she contacted a farmer group, normally close to his/her farm-house, and expressed his/her willingness to join the farmer group, SLN and Ecovida. After that, all the farmers of this farmer group visited (**First Peer Visit**) the 'new' farmer in order to get know him/her as well as his/her farming style. And if everybody agreed, the 'new' farmer became a new member of the farmer group acquiring the same rights and responsibilities as the rest of the members, such as, the attendance to the farmer group meetings. After the transition time established by the Brazilian law (between 12-18 months depending on the type of crops), the Verification Committee carried out the **Verification Visit** in which they checked some of the documentation and the fields. If everything was ok, the 'new' farmer obtained the organic certificate. Hence, he/she was allowed to commercialize his/her products as organic using the organic labels. Additionally, the OPAC informed to the Ministry of Agriculture, Livestock and Food Supply (in Portuguese, MAPA) about the 'new' organic farmer.

After obtaining the organic certificate, the credibility and compliance to the organic requirements had to be assessed constantly. Therefore, some mechanisms, such as, continuous peer visits, annual verification visits, among others, were carried out in order to be able to renew the organic certificate annually.

The PGS certification process was a common and established procedure for all the Regional Nuclei that belonged to Ecovida that experienced some changes about the template of certain documents and procedures along the time, such as particularities of the verification visits. Furthermore, even though certain flexibility was observed at farmer group level for the organization of the peer visits and social control, the compliance of farmers/processors to the organic rules was taken in a very rigorous way by farmers, processors and CE's technicians. Moreover, there was a sanctioning mechanism in case of non-compliance and the Resource Council was the task group, at Ecovida level, in charge of appeals and complaints from farmers/processors related to certification issues. The consequences for farmers/processors of non-compliance were: expulsion, temporarily suspension or recommendations, depending on the magnitude of the action undertaken by the farmer/processor.

On the other hand, a collective responsibility about the compliance of the organic requirements was transmitted by the CE's technicians to farmers/processors. That means that always the farmer/processor was considered the first responsible for his/her actions. Nevertheless, the negligence or the absence of implementing the controlling mechanisms by farmer groups and SLN could also be sanctioned. Moreover, CE's technicians were also responsible of being aware of farmers/processors' practices.

For instance, during the 'Basic Course of Organic Agriculture', a course aimed at 'new' or potential farmers of SLN, one of the CE's coordinators explained through hypothetical situations the responsibilities of each SLN's member related to the certification process. Additionally, it was also remarked what was expected from farmers/processors as SLN's members from the view of ethical behavior.

The following textbox (tbx. 2) describes the factors and implications of the selection of a farmer group.

Textbox 2. Choosing a Farmer Group

An important remark should be done about how 'new' farmers choose the farmer group they wanted to belong to. The most common characteristic among the majority of farmers was that they belonged to the closest farmer group, which at the beginning made a lot of sense for me. Moreover, when I asked them about how they chose their farmer group, the proximity was also the first reason that they gave me. Nevertheless, as I was passing time in the region, I observed that not all farmers belonged to the closest farmer group. Moreover, I perceived that the choice of one group or another was very important, much more than I thought at the beginning.

It was confirmed that the first factor that a 'new' farmer had into account was the proximity, the closer the better. Nevertheless, the way of commercialization chosen by the farmer group was also fundamental, much more than the proximity, because one of the first and more important reasons for farmers to work in groups was that they could commercialize together. Therefore, the type of crops and the way of commercialization were essential. Actually, the most extended crop, nowadays, in the North Littoral region was the banana. However, there was also a group of farmers who grew vegetables and their main way of commercialization was in the

Textbox 2. Choosing a Farmer Group (cont.)

organic fairs every Saturday in different cities, such as Torres, Maquiné or Porto Alegre.

However, there was also another relevant factor for choosing a farmer group and perhaps, not so evident at first glance. This reason was the internal dynamic of the group. It means that the members of each farmer group established a specific dynamic depending on their personal character, ideas, visions and interests related to agroecology and organic agriculture, etc. Actually, this was the main reason why some groups disappeared and other new groups were created in the North Littoral region.

For instance, there was a farmer group highly interested in biodynamic agriculture that carried out frequent agricultural practices in group. Another group was highly interested in increasing their number of members for achieving larger/better markets. And another farmer group, which commercialized in the organic fair at Porto Alegre since the beginning of SLN, decided not to admit more members. Therefore, working with farmer groups besides the advantages for commercialization, transmission of information, exchanging knowledge, skills, experiences, techniques, know-how and social control, it was also beneficial for keeping the particularities and preferences of farmers.

Source: Self-design based on fieldwork data.

The following table (table 4) shows the specific and detailed steps of the certification process carried out by the SLN and Ecovida:

Table 4. PGS Certification Steps

Step	Description	Who	Documents/Registration	Where	
1. Belonging to a farmers/processors group and Ecovida Network	The 'new' farmer/processor family expresses her desire of belonging to the specific farmers/processors group and Ecovida Network during a group meeting.	New' farmer family to farmers/processors group	It is registered in the group's minute.	During a group meeting.	C E , T e c h n i c i a n s
2. First Visit (peer visit) and Having awareness of the Ecovida Association regulations\documents.	The 'new' farmer/processor family is visited in order his group knows about the farm management, his background and agroecological interest. The 'new' farmer family is also informed about the Ecovida's principles, objectives and organizational structure.	Undertaken by the farmers/processors group.	Ecovida Association documents are: - Social Statute (Estatuto Social). - Operational Procedures Manual (Manual de Procedimientos Operacionales). - Internal Regulations (Regimento Interno). It is registered in the group's minute.	New' farmer/processor family farm.	
3. Registration process	The 'new' farmer/processor family has to hand out the required documents.	New' farmer family and OPAC.	· Adhesion document (Ata de adesão) · Compromise Document (Termo de compromisso) · Registration Document of the Agroindustry/Productive Units (Cadastro de agroindústria/unidade produtiva) · Management Plan and Organic Transition (Plano de manejo e Conversão Orgânica)		
4. Communication of the new member	The farmers/processors group communicates to the new member.	Undertaken by the farmers/processors group to the Assessment Commission (Comissão de Avaliação) of the SLN.			
5. Begging of the Transition Process (Processo de Conversão)	This is the period of time that the family farmer/processor has to wait to receive the organic certificate, and therefore, to use the Ecovida's and SisOrg's label. This period will start since the family is registered in his group's minute as a new member. Since the beginning of the transition time (tempo de conversão) the new member has to: - Participate actively in the group activities. - Receive the peer visits (visitas de pares). - Be open to receive visits from consumers, etc. - Update the Field Notebook (Caderno de Campo). - Update the Registration Document of the Agroindustry/Productive Units in case there are modifications in the activities. - Keep the invoice of inputs bought.	Undertaken by the new member.			

Table 4. PGS Certification Steps (cont.)

Step	Description	Who	Documents/Registration	Where	
6. Verification Visit (visita de verificação, olhar externo)	After the transition time ¹ the new member will receive the first verification visit in order to be assessed if he complies with the Ecovida Association's requirements. It involves checking the documents and the farm/agroindustry. The Verification Committee will determinate whether the farmer will be able to receive the organic certification or not. Furthermore, in case of not achieving the minimum requirements, this will be also registered explaining the reasons and the measures that the farmer/processor will have to undertake.	Undertaken by the Verification Committee (Comitê de Verificação) and accompanied by a member of his group. Also the MAPA can participate.	# Documents used for the assessment: - Guiding document for the verification visit (Roteiro de visita de verificação) # Documents checked by the Verification Committee: - Management Plan and Organic Transition (Plano de manejo e Conversão Orgânica). - Field Notebook (Caderno de campo). - Invoices of the inputs bought. It is registered in the group's minute and the Document of Approval/Renewal of the Organic Compliance (<i>Documento de Aprovação/Renovação da Conformidade Orgânica</i>).	New' farmer/processor family farm.	C E , S T e c h n i c i a n s
7. Assessment Meeting (Reunião de Avaliação)	After the verification visit the Verification Committee has a meeting with the whole group to inform them about the visit. It means to inform and discuss about the level of compliance of the farmer visited to the Ecovida Association requirements. # If everything is ok, the farmer /processor will receive the organic certificate and he will be allowed to sell their production as organic. # In case the farmer has to modify or improve any agroecological aspect of the farm, he will receive recommendations. Depending on the issues to 'correct' or improve, the new farmer will receive the organic certification or have to wait until he modifies his farm/agroindustry management to receive the organic certification. If the management is not solved, the farmer/processor will be expelled from the group, SLN and Ecovida's, temporarily or permanently.	The Verification Committee with the whole group.	It is registered in the group's minute.	Meeting in a member's group farm.	
8. Communication of the Verification Visit	The result of the verification visit is described and discussed during a SLN meeting.	Undertaken by the Verification Committee to the Assessment Commission of SLN (Comissão de Avaliação).	The Document of Approval/Renewal of the Organic Compliance (Documento de Aprovação/Renovação da Conformidade Orgânica) will be handed to the Assessment Commission of SLN (Comissão de Avaliação). It is registered in the SLN's minute.	SLN Meeting.	

Table 4. PGS Certification Steps (cont.)

Step	Description	Who	Documents/Registration	Where	
9. Handing out of the organic certificates	The CAN's coordinator hands out the organic certificates to the 'new' organic farmer/processor. This certification is valid for 1 year.	From the CAN's coordinator to the 'new' organic farmer/processor	It is registered in the SLN's minute.	SLN Meeting.	CE's Technicians
10. Communication to OPAC	The CAN's coordinator informs to the OPAC about the 'new' organic farmers/processors in order to be included in the Ecovida's registration system and to inform MAPA.	Undertaken by the CAN's coordinator.	It is registered in the Ecovida's registration system.		
11. Communication to MAPA	The OPAC informs MAPA about the 'new' organic farmer/processors.	Undertaken by the OPAC.	It is registered in the Ecovida's files.		

Source: Self-Designed based on Associação Ecovida de Certificação Participativa, n.d., 01-IIB, 36-II & 42-II.

1: The transition time is:

- Minimum of 12 months for annual crops and pastures.
- Minimum of 18 months for perennial crops.

Or 3-6 months in case the 'new' family farmer/processor already had the organic certificate from another OPAC or OCS (Organization of Social Control)⁶.

Before the transition was finished time the farmer/processor cannot commercialized his products using the Ecovida's label.

⁶ Organization of Social Control (in Portuguese, OCS) was another type for commercializing organic food without certificate. Therefore, it was not included in the SisOrg. OCS was only allowed for direct sales between family farmers and final consumer.

3.6 BESIDES PGS, WHAT MORE ARE ECOVIDA AND SLN?

Basically, Ecovida was a network of regional networks. And each regional network (Regional Nucleus) was constituted by groups: group(s) of farmers/processor, group(s) of technicians and group(s) of consumers. The common characteristic of all these stakeholders, organized in groups, was that they supported the production, processing, commercialization and consumption of organic food (Terra do Futuro, n.d.). Actually, Ecovida's origin started with the articulation of local groups, cooperatives and ecological markets in different regions at the end of the 80'. (Valdemar Arl, 2007).

Hence, there were two relevant characteristics of Ecovida and SLN which had a high importance in the **Ecovida-SLN activities**, including the PGS process, and in the **exchange of knowledge, skills and techniques** among Ecovida members. One is the fact of **working in groups** (of farmers, consumers, etc.) instead of working with individual persons. And the second is that these different **groups were connected** between each other constituting **regional networks**. These regional networks were at the same connected to each other making up the Ecovida Agroecological Network.

3.6.1 Which is the Action Area of Ecovida and SLN? And Who is Part of Ecovida and SLN?

Ecovida Agroecological Network

As it shown in the figure below (fig. 9), Ecovida was located in the South of Brazil, in the states of Rio Grande do Sul, Santa Catarina and Paraná and the South of São Paulo state.

The Ecovida's stakeholders were: farmers/processors groups, rural women groups, farmer cooperatives, consumer cooperatives, technical assistance NGOs, organic sellers, urban families and persons or organizations compromised with agroecology (Valdemar Arl, 2007, & OPAC, 2013). The following figure (fig. 9) shows the location of the Ecovida Agroecological Network and SLN and their Organizational Scheme:

Table 5. Ecovida's Regional Nuclei and Farmer/Processor Groups

Regional Nucleus' Name	State	N° of Farmer/Processor Groups	N° of Farmers/Processors members of each Regional Nucleus
Agroflorestal	PR, SP	9	79
Arenito Caiua	PR	1	18
Cantuquiriguaçu	PR	2	15
Libertação Camponesa	PR	2	37
Mauricio Burmester do Amaral	PR	20	208
Monge João Maria	PR	21	216
Oeste PR	PR	12	88
Sudoeste PR	PR	7	88
Sudoeste PR	PR	7	88
Alto Vale do Itajaí	SC	9	11
Alto Vale do Rio do Peixe	SC	5	59
Litoral Catarinense	SC	10	48
Noroeste Catarinense de Agroecologia	SC	4	23
Oeste Catarinense	SC	2	19
Planalto Norte	SC, PR	14	173
Planalto Serrano	SC	24	208
SERRAMAR	SC	3	11
Sul Catarinense	SC	4	53
Alto Uruguay	RS, SC	18	85
Litoral Solidário	RS	18	161
Planalto RS	RS	7	32
Serra	RS	25	226
Vale do Caí	RS	5	138
Vale do Rio Pardo	RS	4	19
Vale do Rio Uruguai	RS, SC	7	37
TOTAL		240	2,140

Source: Self-designed based on OPAC, 2013.

RS: Rio Grande do Sul state

SC: Santa Catarina state

PR: Paraná state

SP: São Paulo state

Solidarity Littoral Nucleus and Centro Ecológico-North Littoral

Centro Ecológico was a local NGO aimed at the promotion of sustainable agriculture systems based on the use of alternative technologies and focusing on environment conservation, social justice (Meirelles, 2006) and production of healthy food in healthy working conditions for

family farmers⁷. Even though the ANAMA NGO also belonged to the Solidarity Littoral Nucleus, Centro Ecológico was the main organization involved in the PGS process (ANAMA 2012, pers. comm. 31 Jul. & 40-II).

CE's trajectory started in 1985 in the Serra area, in Rio Grande do Sul state, Brazil. This office was called CE-Ipê. Afterwards, in 1991, CE started working in another area, the North Littoral of Rio Grande do Sul and the South of the Santa Catarina state, Brazil. This second office was called CE-North Littoral. Both offices worked independently (fig. 10). (Centro Ecológico, n.d.).

One of the CE's staff members described CE as an organization that works:

“to promote food production without using chemical inputs (fertilizers, pesticides, plant growth regulators) and without genetically modified organisms (GMOs). So that it provides decent income and a proper house (living conditions) not only for who produces if not also for who consumes”. Moreover, work responsibilities between men, women and youth have to be fair. And these activities have to contribute to a ‘healthy’ environment. Also, to preserve the Mata Atlântica with agroforestry systems is essential. I think that ecological agriculture has to provide a dignified life for (men and women) farmers. (37-II).

The Solidarity Littoral Nucleus (*Núcleo Litoral Solidário*) is constituted by 18 farmer/processor groups⁸ (161 family famers/processors); 2 consumers cooperatives, one farmers cooperative (Econativa); Centro Ecológico, a technical assistance NGO; ANAMA, another technical assistance NGO; the Environmental Education Atlantic Forest⁹ Network (*TEIA de Ecudação Ambiental Mata Atlântica*) and 2 rural women groups. In total, approximately 400 families were part of the SLN (OPAC, 2013, ANAMA 2012, pers. comm. 31 Jul. & 40-II)

The next diagram shows the location of the CE's offices and working areas as well as the SLN stakeholder-members and how they were connected to each other. It is noticeable that Ecovida and SLN had the same organizational scheme, as a network (fig. 10). Detailed information about the SLN stakeholders is shown in the table 6.

⁷ Healthy working conditions specially refer to avoid the use of chemical products that cause damage to farmers' health.

⁸ Some of the family farmers/processors groups are informal and others are formal from the legal point of view.

⁹ Network of teachers at local and regional level in the North Littoral of Rio Grande do Sul State and the South of Santa Catarina state, in Brazil. Teachers' members included environmental issues within the formal disciplines at schools and high schools. The aim was to promote the conservation of the local natural environment, organic farming and consumption, and sustainable daily practices.

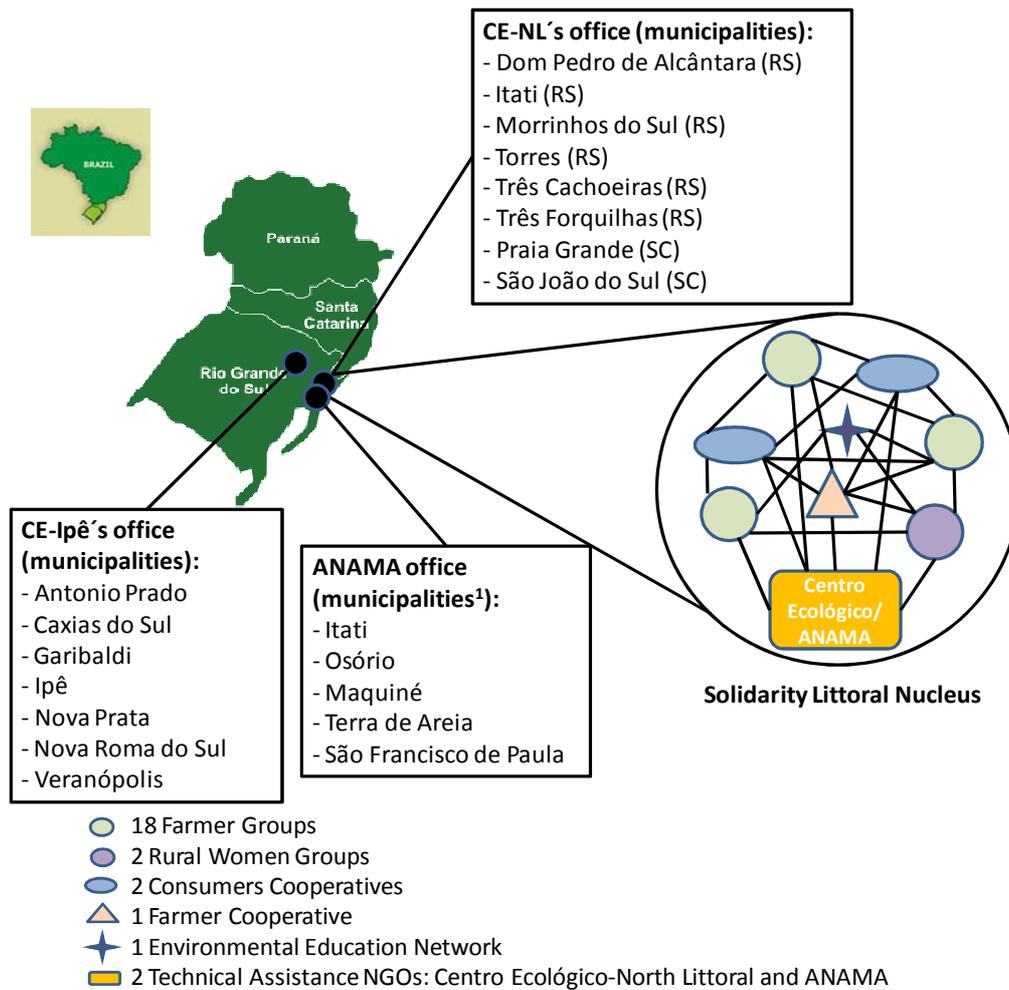


Figure 10. CE offices' Working Areas

Source: Self-Design based on Centro Ecológico, n.d. and ANAMA 2012, pers. comm. 31 Jul.

1: It only includes the ANAMA's working area related to agricultural technical assistance

RS: Rio Grande do Sul

SC: Santa Catarina

Table 6. Solidarity Littoral Nucleus's Members

Type of Stakeholder	Stakeholders	Constitution Year ¹	Location (municipalities)	N° of Members
Farmer/Processor Group	<i>ACERT Mampituba (Associação dos Colonos Ecologistas da Região de Torres-Mampituba)</i>	1992	Torres and Mampituba	4
	<i>ACERT Raposa (Associação dos Colonos Ecologistas da Região de Torres-Raposa)</i>	1992	Três Cachoeiras and D. Pedro de Alcântara	15
	<i>ACERT Três Passos (Associação dos Colonos Ecologistas da Região de Torres-Três Passos)</i>	1992	Morrinhos do Sul	5
	<i>APEMSUL (Associação dos Produtores Ecologistas de Morrinhos do Sul)</i>	1996	Morrinhos do Sul	7
	<i>APELCAM (Associação dos Produtores Ecologistas da Luz do Canto dos Magnus)</i>	1998	D. Pedro de Alcântara and Morrinhos do Sul	18
	<i>Roça da Estância</i>	1999	Mampituba	6
	<i>Costa Verde</i>	2000	Morrinhos do Sul	5
	<i>Rio Bonito</i>	2000	Morrinhos do Sul	13
	<i>GEARD (Grupo Ecológico Alto Rio de Dentro)</i>	2000	Mampituba, Torres and Morrinhos do Sul	9
	<i>Grupo Ecológico Morro Azul</i>	2002	Três Cachoeiras	6
	<i>GESA</i>	2003	Três Cachoeiras, D. Pedro de Alcântara, Torres, Morrinhos do Sul and Terra de Areia	39
	<i>Grupo Ecológico Bons Ventos Osório</i>	2005	Osório and Maquiné	4
	<i>Terra Viva</i>	2006	D. Pedro de Alcântara	5
	<i>GPEP (Grupo Ecológico Paraíso)</i>	2007	Três Cachoeiras	9
	<i>Terra de Areia</i>	2011 (agosto)	Terra de Areia and Três Forquilhas	3
	<i>Boa Esperança</i>	2011 (nov)	Mampituba	7
<i>Vale do Maquiné</i>	2011 (dec)	Maquiné	3	
<i>Ecotorres do José</i>	2012	Torres	3	
Rural Women Group	<i>Grupo de Mulheres Ecologistas Morro do Forno</i>	1990's?	Morrinhos do Sul	11
	<i>AMADECOM (Associação de Mulheres para o Desenvolvimento Comunitário de Três Forquilhas)</i>	1999	Três Forquilhas	15
Producer Cooperative	<i>Econativa (Cooperativa Regional de Produtores Ecologistas do Litoral Norte do Rio Grande do Sul e Sul de Santa Catarina)</i>	2005	Econativa's area in SLN: Dom Pedro de Alcântara, Mampituba, Morrinhos do Sul, Três Cachoeiras ² and Torres	25 ³
Consumer Cooperative	<i>Ecotorres (Cooperativa dos Consumidores de Produtos Ecológicos de Torres)</i>	1999	Torres	100 approx.
	<i>COOPET (Cooperativa Ecológica de Consumidores de Três Cachoeiras)</i>	1999	Três Cachoeiras	96 approx.

Table. 6 Solidarity Littoral Nucleus's Members (cont.)

Type of Stakeholder	Stakeholders	Constitution Year ¹	Location (municipalities)	N° of Members
Environmental Group	Environmental Education Atlantic Forest (TEIA de Educação Ambiental Mata Atlântica)	2005	North Littoral of RS and South of Santa Catarina: Três Cachoeiras, Morrinhos do Sul, Torres, Mampituba, Terra de Areia and Dom Pedro de Alcântara	16 schools (more than 40 teachers). Approximately other 120 teachers had an indirect connection to the TEIA.
Technical Assistance NGO	Centro Ecológico-North Littoral (CE-Litoral Norte)	1991	Working area's municipalities (North Littoral of RS and South of Santa Catarina): Três Cachoeiras, Morrinhos do Sul, Torres, Mampituba, Terra de Areia and Dom Pedro de Alcântara ⁴ , Três Forquilhas, Itati (RS) and Praia Grande and São João do Sul (SC).	8 technicians
Technical Assistance NGO	ANAMA (Ação Nascente Maquiné)	1997	<ul style="list-style-type: none"> • Working line of rural technical assistance: Itati, Osório, Maquiné, Terra de Areia and São Francisco de Paula. • Working line of environmental recovery: Arroio do Sal, Capão da Canoa, Cidreira, Dom Pedro de Alcântara, Imbé, Itati, Maquiné, Osório, São Francisco de Paula, Terra de Areia, Torres, Tramandaí, Três Cachoeiras, Três Forquilhas, and Xandri-Lá. 	6 technicians?

Source: Self-designed based on OPAC, 2013, Meirelles, 2011 & ANAMA 2012, pers. comm. 31 Jul.

1: Constitution Year means the approximately year when first farmers started to work as a group. In some cases, the official constitution year of the group is some years later.

2: The Econativa's office was located in Três Cachoeiras.

3: Econativa had two offices. One was a member of the Serra Nucleus. And the other was part of SLN. This number only includes the Econativa's members who belonged to SLN.

4: The CE's office was located in Dom Pedro de Alcântara

3.6.2 Which are the Organizational Spaces within Ecovida and SLN apart from PGS?

Ecovida Agroecological Network

As it was explained before, Ecovida had different fields of action besides the participatory certification. These other types of activities were focused on the political, social, environmental education, and agroecological production, processing and commercialization spheres. In order to articulate and carry out these activities, Ecovida held on what was called **organizational spaces**. The term '*organizational spaces*' was used by Valdermar Arl, who belonged to the Association for the Development of Agroecology, in one of the Formative Booklets the made about the Ecovida Agroecological Network in 2007.

It is interesting the use of the word 'spaces' instead of the commonly used 'structure' for referring to the internal organization within a company, organization, etc. In fact, the word 'spaces' compared to 'structure' transmitted a different meaning. 'Space' could be considered as a place or moment for gathering people to exchange ideas, debate issues, take decisions and also have personal contact between each other. Moreover, it gives an idea of movement, action and dynamism. On the other hand, 'structure' could be interpreted as something fixed that involved an established hierarchy. It also reminds the conventional organizational patterns that represent the agribusiness models of 'development'. Hence, it could be considered that 'organizational spaces' were connected to the agroecological movements and 'organizational structure' was linked to the agribusiness models.

The following diagram represents the Ecovida's stakeholders and organizational spaces (fig. 11):

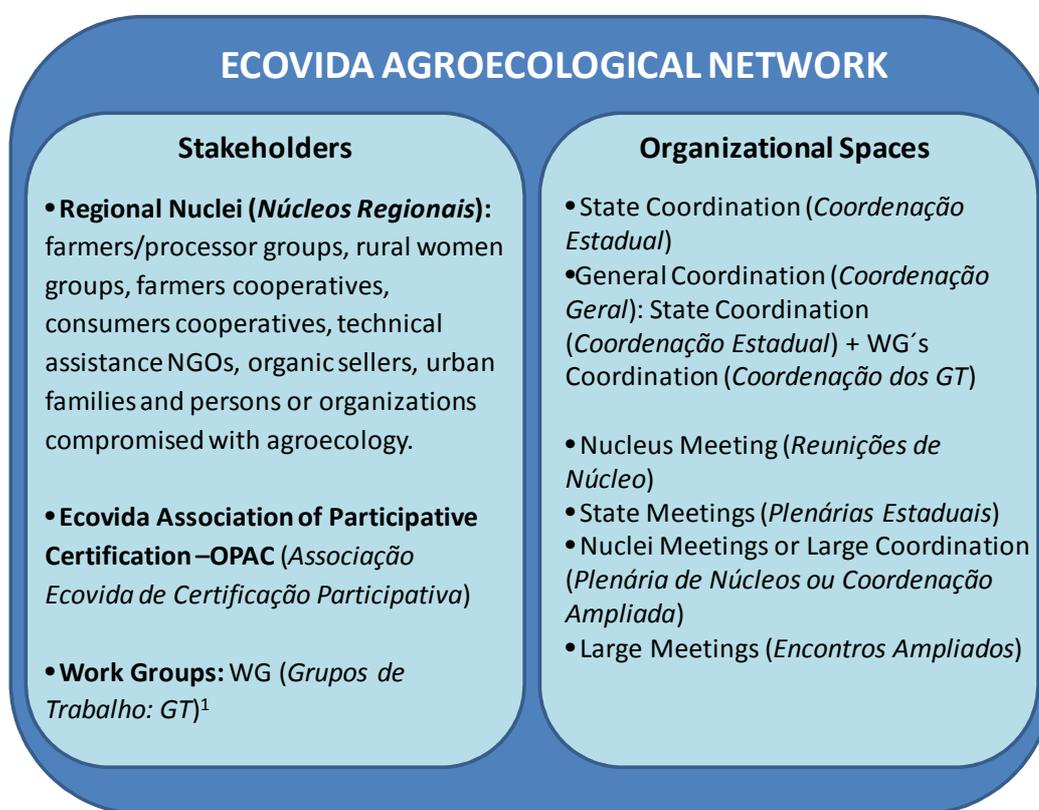


Figure 11. Ecovida's Stakeholders and Organizational Spaces

Source: Self-designed based on Terra do Futuro, n.d., 22-PO, and Valdemar Arl, 2007.

1: Work Groups were constituted by stakeholders from different states where Ecovida worked. Work Groups were aimed at specific topics, such as, gender, certification or agroforestry systems.

The main characteristics of Ecovida's organization and management were: **horizontality**, **participation** and **decentralization** (Valdemar Arl, 2007). In all the different organizational spaces there were commissioners of the 'smaller-size' levels of Ecovida. It means, for instance, that in the regional organizational spaces, commissioners of the local organizational levels were present.

Solidarity Littoral Nucleus

Solidarity Littoral Nucleus, as all the Ecovida's Regional Nuclei, worked in an **autonomous** way and took its own decisions within its members. This means that each Ecovida's Regional Nucleus (RN) had their particular working rules under the umbrella of the Ecovida's general principles, regulations and procedures. Furthermore, each RN also had to fulfill the Brazilian organic regulations (Valdemar Arl, 2007). In the case of SLN, it followed the OPAC's internal regulations. Moreover, each SLN's stakeholder also had its own internal regulations, which could be formal or informal (36-II & 40-II).

This **independency** was also present within each type of **stakeholder** who belonged to the SLN. It means that, for instance, a farmer group maintained its own specific working organization and decisions. And these particularities were different compared to another farmer group. Therefore, each Ecovida's stakeholder worked independently but shared the same general principles, objectives and rules as Ecovida. Therefore, the stakeholders' particularities and autonomy were respected (36-II).

The following figure (fig. 12) shows the SLN's **stakeholders** and its **organizational spaces**:

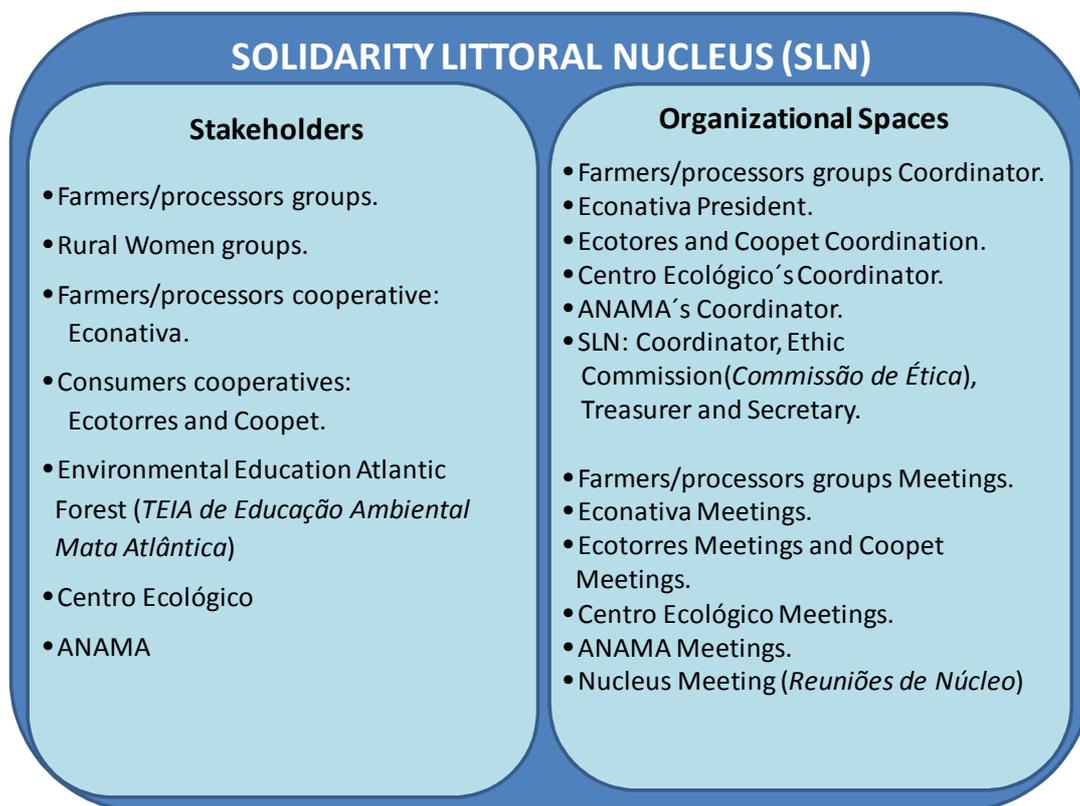


Figure 12. SLN's Stakeholders and Organizational Spaces

Source: Self-designed based on Valdemar Arl, 2007, 41-II, 17-PO & 37-PO.

Among the different organizational spaces within the SLN, the **farmer/processor group meetings** and the **nucleus meetings** were the only ones that undertook PGS issues/activities.

CHAPTER 4. HOW DO CENTRO ECOLÓGICO AND SOLIDARITY LITTORAL NUCLEUS, BASED ON THE PGS CERTIFICATION SCHEME, ENCOURAGE EXCHANGE OF KNOWLEDGE, SKILLS, TECHNIQUES AND KNOW-HOW AMONG THEIR FARMER-MEMBERS?

In the previous chapter the PGS process was described, including a detailed description of all the steps and goals, the CE-Ecovida Project Identity and their working lines. This chapter, focusing on the PGS process and CE-Ecovida activities, presents the different 'ways' of learning and exchanging knowledge, skills and techniques of agroecological practices used by the farmers who were members of the Solidarity Littoral Nucleus located in the North Littoral of RS, Brazil. The relationship, when present, between these learning 'sources' or moments and the PGS certification process, in the way undertaken by CE and Ecovida is also described. Moreover, a brief description of other sources of information and exchange occasions completely external to the PGS process and the Ecovida Agroecological Network is also included.

For achieving that, the agroecological learning 'sources' were classified in three categories: In-PGS, In-Between-PGS and Out-PGS activities (table 7). The In-PGS category consists of all the activities that were included in the PGS certification process and, which were therefore obligatory for farmers in order to obtain the organic certificate. The In-Between-PGS category involves all the activities, and occasions related to the work of CE and Ecovida in the agroecology field. It also includes the SLN farmers/processors' commitment for being part of the Ecovida Agroecological Network but not related to the PGS process. These activities were grouped under the name of In-Between-PGS because for participating in the Ecovida's PGS process it was necessary to become a member of SLN and, therefore, an Ecovida's member. Nevertheless, the activities included in this category were not related to the PGS process *per se*. And the Out-PGS category consists of other sources of information and moments of exchange of knowledge, skills and techniques that are completely disconnected from the work of CE and Ecovida.

Table 7. Activities for Learning and Exchanging Knowledge, Skills and Techniques about Agroecological Issues among SLN’s Farmers and Technicians

IN-PGS (Obligatory Activities for PGS)	IN-BETWEEN-PGS (Agroecological Activities due to belonging to SLN-Ecovida)	OUT-PGS (Other "External" Activities to CE-Ecovida)
Basic Course of Organic Agriculture	Experimentation-Observation ¹	Other Organizations’ Activities (Emater, Rural Union of Workers, Municipality) ²
Farmer Group Meeting	CE Activities: courses, workshops, festivals, researches, etc.	Contacts with actors “out” of Ecovida: personal visits to other farms, neighbors, other persons, etc.
Peer Visit	CE Technical Assistance	Previous Experience: self-experiences, relatives, etc.
Verification Visit-Assessment Meeting	CE Field Visits: local, regional, national, international	Media: television, radio, internet ¹
Nucleus Meeting	Ecovida Meetings	
	Others within the Ecovida Network: Anama	
	Other group activities: fraternization encountering, etc.	
	Others: specific actors within the SLN, contact with other farmers groups, interns, organic fairs (Torres and POA) and written material by CE-Ecovida	

Source: Fieldwork data.

1: It was not possible the Exchange in this activity, only Learning.

2: These activities involved Technical Visits; Courses, Workshops and Written Material elaborated by EMATER/RS or MAPA, etc.; Visits from Schools not involved in the TEIA; Visits from universities; Researchers non-related to CE-Ecovida and Belonging to other OPACs.

Although the Out-PGS activities were involved neither in the PGS nor in the Ecovida Agroecological Network, it was considered important to include them. This is because the information, knowledge and techniques from these ‘external’ sources were incorporated by the SLN’s members through the PGS certification process and the SLN-Ecovida’s activities. Therefore, it contributed to the exchange of knowledge, techniques, know-how and skills, and to a participatory learning process as well as filling the SLN-Ecovida ‘Knowledge pool’. The next diagram (fig. 13) shows the interaction between the Out-PGS activities and the In-PGS and In-Between-PGS activities and how the SLN-Ecovida ‘Knowledge pool’ was increased. It is important to remark that the SLN-Ecovida ‘Knowledge pool’ did not only include codified knowledge, but also skills, know-how, techniques and experiences that were exchanged between SLN’s farmers, CE’s technicians and external farmers and technicians.

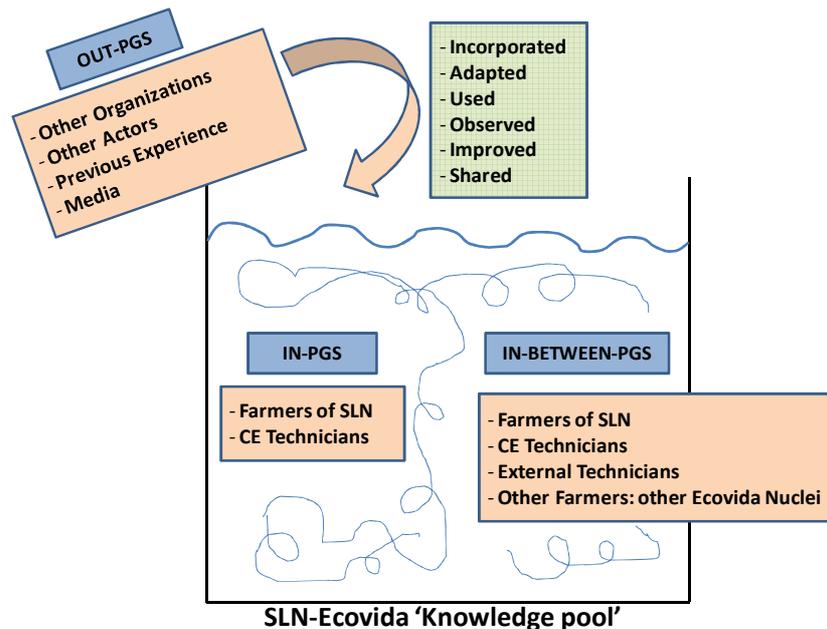


Figure 13. Interaction between the PGS, SLN-Ecovida and External Activities about the Knowledge Exchange and Participatory Learning in Agroecology

Source: Fieldwork data.

It is important to clarify the classification of some learning and exchange sources in the In-Between-PGS category:

- The **'Experimentation-Observation'** was included in the In-Between-PGS category due to the relevant and persistent CE's role in promoting the experimentation among farmers and, therefore, the observation of the tests' results carried out by farmers.
- The **'CE Field Visits'** was classified as an In-Between-PGS activity because all the members of Ecovida had the commitment of receiving cross visits in order to show, explain and share his/her work. On the other hand, all farmers-members of Ecovida had the possibility of visiting other farms.
- The **'Organic Fairs'** space involves the organic fairs in Torres and Porto Alegre (POA), the capital of RS. It was also included in the In-Between-PGS activities because the current existence of these organic fairs was the result of the constant and significant efforts carried out by CE and Ecovida. Therefore, it was considered that the learning process and exchange carried out there was the consequence of CE and Ecovida's work.

It is also important to explain that the **'CE Technical Visits'** activity involved the visit of the CE's technicians to farmers for giving advices, guiding or discussing with them about technical issues; the visit of farmers to the CE's office to ask about a technical topic and the talks between farmers and technicians by telephone to ask for technical recommendations.

In the following sections it is explained the flow of knowledge, information, know-how, skills, techniques, experiences, etc. according to the activities included in each of the three categories mentioned above: In-PGS, In-Between-PGS and Out-PGS.

4.1 IN-PGS CATEGORY

The following table (table 8) shows, for each activity within the In-PGS category, the stakeholders involved, the quantitative level of contribution to exchange – knowledge, techniques, skills, know-how- and, therefore, to the SLN-Ecovida ‘Knowledge pool’ in agroecology. Moreover, the main features of each activity were also included.

The information presented in the following table (table 8) was collected through participant observation and interviews to the SLN’s farmers/processors.

Table 8. Contribution of In-PGS Activities to Exchange of Knowledge, Skills and Techniques, and Learning among SLN’s Farmers and Technicians

IN-PGS (Obligatory Activities for PGS)				
Activities	Stakeholders Involved ¹	Contribution to Exchange and Learning? (Yes/No)	How much? (Very much/ Enough/A little bit /Nothing)	Main Characteristics Found
Basic Course of Organic Agriculture	<ul style="list-style-type: none"> • New farmers/processors of SLN • Trainers: CE technicians • 'Old' farmers of SLN 	Yes	Very much	<ul style="list-style-type: none"> - High flexibility for 'interrupting' (+) - High respect listening to (+)
Farmer Group Meeting	<ul style="list-style-type: none"> • Farmers/processors of the group • (CE technicians) • (Other farmers from other groups) • (Other guests) 	Yes	Very much	<ul style="list-style-type: none"> - Democratic and flexible coordinator (depends on the group) - Dynamic group (depends on the group)
Peer Visit	<ul style="list-style-type: none"> • Farmers/processors of the group • (CE technicians) 	Yes	Enough	<ul style="list-style-type: none"> - Relaxed atmosphere (+) - Reduce number of farmers (+) - High confidence (+)
Verification Visit- Assessment Meeting	<ul style="list-style-type: none"> • Farmers/processors of the group checked • 3 farmers from other groups: 'inspectors' • (Coordinator of the farmer checked + 	Yes	Enough	<ul style="list-style-type: none"> - Certain level of tension (-)
Nucleus Meeting	<ul style="list-style-type: none"> • Farmers of SLN • SLN coordinator (also a SLN farmer) • (CE technicians) 	Yes	A little bit	<ul style="list-style-type: none"> - High focus on certification issues (-) - High motivation for learning and improving together (+)

Source: Fieldwork data.

1: This symbol () means that these stakeholders had a secondary role.

+/-: This means a positive and negative feature for exchange of knowledge, skills and techniques, and collective learning.

Comparing all the activities included in the In-PGS category, **farmer group meetings** were the activity that contributed the most to the exchange of knowledge, techniques, know-how and skills, and to the continuous learning process according to the farmers’ interviews. Farmers appreciated both theoretical/scientific and practical knowledge. They really thought that a combination of both was much better than only theoretical or practical information.

The ‘**Basic Course of Organic Agriculture**’ was also highly considered by the farmers for increasing their agroecological knowledge. Nevertheless, quoting a farmer with a long experience in agroecology farming, during an interview when I asked him whether he had learnt something in his first course of organic agriculture organized by CE:

“I started to have doubts. The first course is only to have doubts and never get an answer. Doubts about if it is going to work,..., I don’t know,... I’m going to try (...). The beginning is like that. It’s just to come up with questions” (05-II)

On the other hand, both, **peer visits** and **verification visits**, were for the majority of the farmers interviewed the activities that allowed them to have awareness of others farmers’

management and exchange ideas, comments and doubts about agroecological techniques. However, peer visits were considered more useful for learning than verification visits.

4.1.1 Basic Course of Organic Agriculture

This course was aimed to introduce the basic principles of organic agriculture to the ‘new’ farmers and processors who were going to join to SLN and Ecovida. Moreover, the PGS process and Brazilian organic regulations and, more specifically, the specific role and responsibilities of each member within his/her farmers/processors group were explained.

The main characteristics were the combination between theoretical and practical information; the flexible structure that gave the opportunity to participants to share their comments, doubts, and previous experiences at any moment; the relaxed and respectful atmosphere; the more ‘private’ conversations during the coffee-break and lunch and the group work methodology.

The following diagram shows (fig. 14) how the information, knowledge, experiences and advices flowed during the ‘Basic Course of Organic Agriculture’. It represents, based on the participant observation undertaken during one the ‘Basic Course of Organic Agriculture’ organized in September-October 2012, the type of information, knowledge, etc., namely ‘material’, exchanged; who participated in this exchange and how much each stakeholder contributed to the exchange.

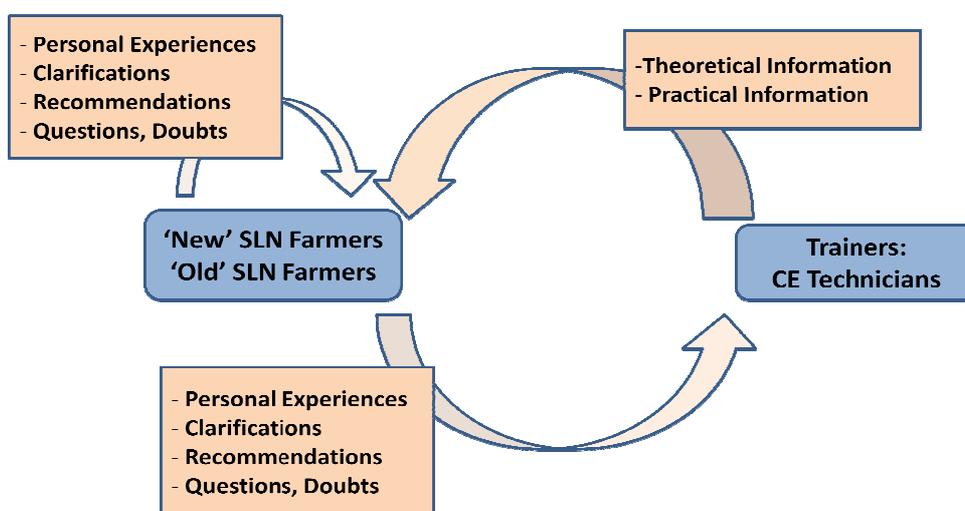


Figure 14. Information, Knowledge, Experiences and Advices Flow in the Basic Course of Organic Agriculture

Source: Fieldwork data.

As shown in the diagram, the information mainly flowed from the CE’s technicians to the farmers (wider and darker arrow), but farmers also contributed notably to the information and knowledge shared and exchanged. Whereas CE’s technicians transferred theoretical and practical information to the farmers, the latter complemented this information with clarification, personal experiences and recommendations. Furthermore, questions and doubts came from farmers to CE’s technicians and also to other farmers. It is noticeable that in some

occasions, conversations between farmers took place without the intervention of CE's technicians.

The next textbox (tbx. 3) shows more detailed information about the 'Basic Course of Organic Agriculture' complementing the information of the previous figure (fig. 14).

Textbox 3. Basic Course of Organic Agriculture

During the course there were plenty of tips, techniques and information exchanged among participants and CE's technicians. Besides the exchange of the farmers' own experiences, they also shared experiences watched on the television, or seen in other farms. During this exchange, also personal comments and feelings about agroecology were expressed. For instance, one of the farmer's goals was that the course could contribute to his personal development. Another farmer's goal was to enrich his philosophy of agroecological life (02-PO).

Furthermore, during the course's evaluation, one farmer said to all the participants that one of the positive aspects of the course for him was the exchange of experiences among farmers. The rest of the farmers, in general, expressed their agreement to his opinion. It was also commented by another participant the happiness transmitted by one of the farmers visited during the course as one of the impressive aspects of the course in a positive way (02-PO).

Source: Self-design based on fieldwork data.

The methodology and the general characteristics of this course were a combination between the general characteristics of the courses, workshops and visits organized by CE. These are explained deeply in the subsection '*CE Activities*' within the '*In-Between-PGS Activities*' section.

The leading role of the CE's technicians during the inside-sessions and workshop became less noticeable during the visits in which the visited farmer became the key communicator.

4.1.2 Farmer Group Meeting

This was the basic organizational and main gathering space within the PGS process and Ecovida Network as farmer/processor groups were the organizational units of the SLN PGS group and Ecovida Network. Farmer group meetings were also the most frequent activity, in most of the farmer groups, among the 'gathering activities' included in In-PGS, In-Between-PGS and Out-PGS categories, besides the organic fairs.

It is noticeable that during the 5 farmer group meetings in which participatory observation was carried out, the main exchange took place between the farmer-members of the group (wider and darker arrow), although CE's technicians or other guests were also present. The next diagram (fig. 15) represents the agroecological exchange of knowledge, information, experiences, ideas, etc. during farmer group meetings. Moreover, complementary information is given in the following textbox (tbx. 4).

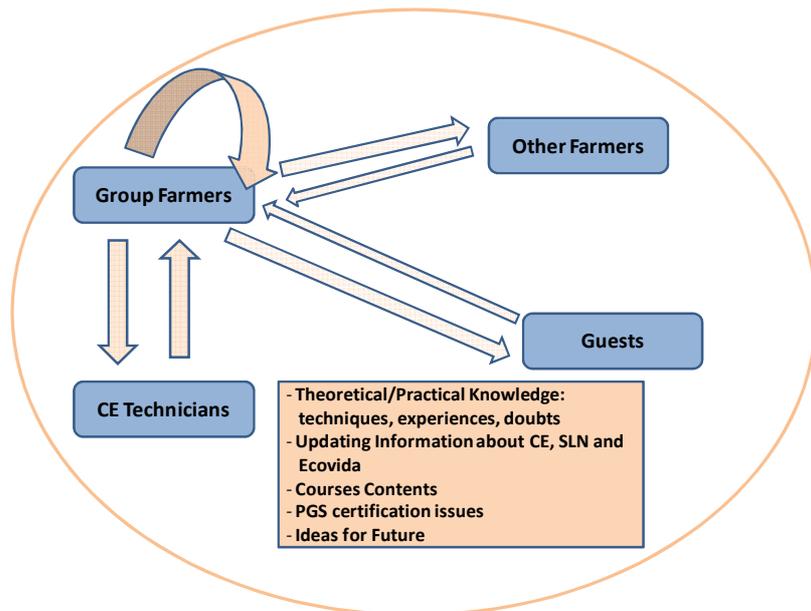


Figure 15. Flow of Exchange during a Farmer Group Meeting

Source: Fieldwork data.

In general, the atmosphere in the attended meetings was characterized by a higher trust between the farmers than in the rest of the activities that also gathered farmers, such as courses, festivals, Nucleus meetings, visits, etc. Farmers/processors members showed a close relationship between them. Additionally, in several occasions the main topic discussed during the meeting was ‘interrupted’ by a farmer who raised a question or comment about a problem or a doubt about techniques, therefore, the exchange of ideas, comments, knowledge, techniques, etc. was going on. For instance, a farmer-member said to all the participants that she was making compost using Californian earthworms and invited them to her farm to see it (10-PO).

Furthermore, farmer group meetings were a space where several procedures related to the **PGS certification process** were undertaken, such as the admission and exclusion of a farmer/processor member, the Assessment Meeting after the Verification Visit, the exchange of questions or doubts about the certification procedure, the exchange of tips about how to facilitate the filling out of the certification documents, the explanation to the new members about how SLN and Ecovida worked, how already carried out certification visits were and a summary of the previous SLN meeting.

Besides exchanging different types of information about certification issues, farmer group meetings were the moment for sharing doubts, fears, knowledge about agroecology and agroecological experiences, failures, and success; asking and wondering questions about farming; debating about farming difficulties; Econativa issues and commercialization; commenting happenings in the region; and even personal issues. Moreover, this was the gate for updating the information about CE, SLN and Ecovida. Therefore, it became the main connection point to the Ecovida Network which also contributed very much to the feeling of being part of the Ecovida Network. It means to be really connected to the rest of the Ecovida Network.

On the other hand, farmer group meetings were organized in a farmer's house rotating basis. Therefore, other farmers/processors members could take a look at others farms and, sometimes, 'guests-farmers' asked the 'host-farmer' about his/her farm and everything before the meeting started. This was one of the mechanisms for undertaking, the namely, **social control** (*'controle social'*).

It was also observed that group meetings with a **strong leader** made the exchange more difficult due to the fewer possibilities for other farmers-participants to share comments, ideas, doubts, etc. In these cases, there were less 'interruptions' and parallel comments and less 'freedom' for giving opinions or comments when the 'strong' leader did not ask for opinions. This was observed in one of the 5 attended meetings. These five meetings were organized by 4 different farmer groups. On the other hand, in one farmer group there could be more than one leader, such as, the affective leader, the marketing leader and the coordinator of the farmer group. A **farmer group' coordinator** was a position occupied by rotation by different farmers. This position involved higher responsibilities and more voluntary dedication to SLN and PGS what could also implied a higher powerful position compared to the rest of the non-leader-farmers. It was observed that, in most of the cases, the strongest leaders within farmer groups were connected to commercialization issues.

More details about the farmer group meetings are included in the following textbox (tbx. 4).

Textbox 4. Farmer Group Meetings

The participants were commonly the group members. However, sometimes, there were other participants, such as, a CE technician, who also attended these meetings frequently, a farmer from other group, a possible 'new' organic farmer or the local secretary of agriculture.

As it was explained before, these meetings were organized in the house of one of the farmer-members and, usually, the location rotated between the farmers-members' houses. This transmitted the idea of being in a 'familiar' environment with closer relationships between the farmer-members as well as getting know each other better. Furthermore, this gave the opportunity to show some agroecological management practices that farmers were carrying out in that moment. This increased considerably the amount of exchange of ideas among farmers, especially when the group was new or when there was a new member. Nevertheless, this opportunity was not always seized. On the other hand, the rotation of the meeting place was not practiced by all the farmers/processors groups.

Normally, farmer group meetings did not include in their agenda a specific point for talking about agroecological techniques, experiences or doubts. Nevertheless, it was frequent that during the meeting, some techniques, and experiences or 'learnings' were shared or some doubts were exposed to the rest of the participants. The flexibility of these encountering to arise spontaneous conversations 'interrupting' the 'official' topic of the meeting promoted the exchange of knowledge, techniques, and skills and, therefore, a participatory

Textbox 4. Farmer Group Meetings (cont.)

learning process. For instance, a farmer explained that once a farmer from another farmer group participated in one of his farmer group meeting to show them a biofertilizer called 'Gigamix' because of the successful effects of the strengthening of the banana crop and in the faster growing. Later, during another farmer group meeting one of the farmers of his farmer group shared with the rest the good result obtained in her banana plantation after the application of 'Gigamix'.

When a doubt was presented, other farmers gave their opinion first and CE's technicians let them talk. CE technicians answered when they were asked directly, otherwise, they preferred that farmers discuss among them. When the doubt was related to which products are allowed to be used according to the Brazilian legislation and the Ecovida's norms, the question was asked directly to one of the CE technicians.

Source: Self-design based on fieldwork data.

4.1.3 Peer Visits, Verification Visits and Assessment Meeting

Peer visits and verification visits could be considered very similar because both imply a farmer visited by other farmers, all of them members of the SLN. However, the knowledge, techniques and skills exchanged and the learning process was totally different.

Based on one attended peer visit and on the interviews conducted to farmers/processors, **peer visits** had a relaxed character and the role of the visiting-farmers was similar to the role of colleagues-friends. Peer visits could be compared with the visits of friends (visitor-farmers) having an informal conversation with the visited farmer. However, as by the farmers, in the **verification visits**, visiting-farmers had a role similar to the one of an inspector. Moreover, most of the farmers affirmed that during the verification visits advices and suggestions were given and, therefore, it was also an opportunity to learn something new. Nevertheless, a higher proportion of farmers affirmed that peer visits were more appropriated for learning new techniques than during the verification visits. However, in both cases, considerable amount of information and knowledge, suggestions and improvements about agroecological management were exchanged. It could be that during peer visits the information flowed more from the visited-farmer to the visitors and in the verifications visits more the opposite way.

The majority of the interviewed farmers agreed that the **peer visits** were a good opportunity to observe what other peers were doing. Consequently, they learnt some new agroecological techniques. On the other hand, the visited farmer also received comments from their colleagues-farmers what improved his management as well.

The next two textboxes (tbx. 5 and 6) show the information and knowledge, techniques and know-how flow in both activities.

Textbox 5. Peer Visits

The only actors involved were the farmers who belonged to the same farmer group. Generally, peer visits were carried out once per year but probably its frequency varied very much depending on the dynamism of each group. Moreover, peer visits were generally undertaken by all the members of the farmer group. However, the internal farmer group organization for the peer visits also varied among the farmer groups because in the largest farmer group of the 16 farmer groups interviewed, the Ethic Council consisted of three farmers-members who were in charge of these visits. Hence, some of the other two non-interviewed farmer groups could also have another organizational scheme for the peer visits. This is nevertheless not very likely though, taking into account their group size and the collected data. In any case, peer visits were not undertaken in the same way in different farmer groups but in general all the famers-members participated.

Peer visits constituted one of the mechanisms of social control within the PGS process.

On the other hand, they also contributed to increasing the personal relationships within the farmer groups, exchanging agroecological knowledge, suggestions, techniques and skills and to promote a collective learning process.

Source: Self-design based on fieldwork data.

Most of the farmers interviewed agreed that the **verification visits** also contributed to the exchange of agroecological practices although the goal of this activity was to check the farm's management. However, due to the fact that the organic certificate is at stake, and therefore the crops commercialization as organic or conventional during one year, some farmers did not feel relaxed during this visit. Consequently, the comments and explanations exchange from the farmer who was visited could be lower than in a normal visit. On the other hand, since the farm management is being assessed by other farmers, the inspector-farmers perhaps asked more questions than if they were in another type of visit (peer visit, field visit, etc.). In any case, both statements depended very much on the farmer's behavior. It is also relevant that the main field data about the verification visits was collected through interviews and not during a participant observation.

Textbox 6. Verification Visits and Assessment Meetings

The actors involved during the verification visit were the visited farmer, the coordination of his group and the Verification Committee (*Comitê de Verificação*¹). Afterwards, during the assessment meeting the rest of the farmer-members of the visited farmer also attended.

During the verification visit the exchanged information was related to the farming management carried out by the visited farmer, technical recommendations from the Verification Committee to the visited farmer who should carry them out and 'optional' suggestions (not compulsory to be undertaken) by the Verification

Textbox 6. Verification Visits and Assessment Meetings (cont.)

Committee for improving the agroecological management. The questions asked by the Verification Committee, such as, soil fertility management and erosion control techniques, were included in the Guiding document for the Verification Visits (*Roteiro de visita de verificação*).

For instance, some of the advices that farmers received during the verification visits were: the use of a plastic bag to cover the banana bunch and introducing a banana leaf inside instead of a journal's sheet. This technique protected the banana fruits from pests and strong sun. Another advice given to a farmer during a verification visit was to establish a vegetal wind barrier using some trees.

From the data collected during the interviews, the information exchanged during the Assessment Meeting was mainly the Verification Committee's decision about whether giving/renewing the organic certificate or not. In case of not giving/renewing the organic certificate there could be more extended explanations. But it was very probably that in case that there were not 'problems', there was just briefly explanations. Therefore, it seems that there was not knowledge exchange or collective learning about agroecological practices during the Assessment Meeting.

1. The Verification Committee was compounded by three farmers who belonged to three different farmer groups.

Source: Self-design based on fieldwork data.

4.1.4 Nucleus Meetings

During the Nucleus meeting, the main characteristic was the highlight role of the SLN's coordinator, both leading the meeting and encouraging the continuous learning process individually and in group, among the SLN's members.

On the other hand, one of the main goals of the meeting was to introduce the 'new' farmers to the rest of the SLN's members. A brief explanation about the verification visits undertaken in the farm of each 'new' farmer was given for the whole audience. Afterwards, every farmer had the opportunity to make questions to the 'new' farmers and also the 'new' farmers took the advantage to explain their goals to the SLN's members. For instance, one of the 'new' farmers expressed her opinion about agroecology: "*(Agroecology for me) is a philosophy of life. We do not only think about the money but about a life quality.*" (17-PO).

The following diagram (fig. 16) shows how the main information flow was between the SLN's farmers and the SLN's coordinator.

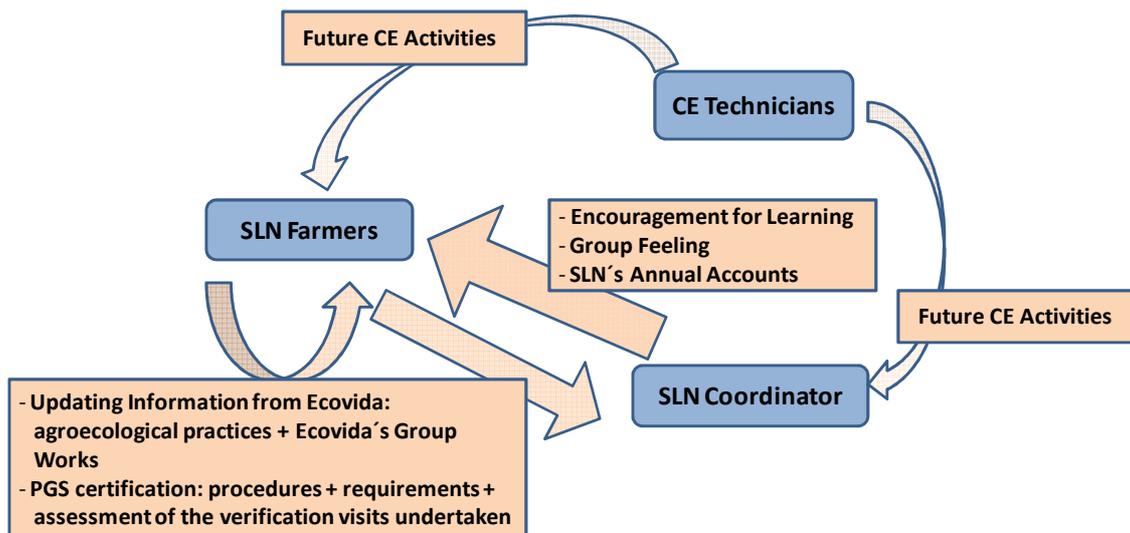


Figure 16. Information, Knowledge and Practices Flow in the Nucleus Meeting

Source: Fieldwork data.

The following textbox (tbx. 7) describes in more detail the type of information exchange and the environment.

Textbox 7. Nucleus Meetings

The participants were the coordinators of the different farmer groups, some of the new farmer-members, the coordinator of the women group, and CE's technicians.

The main exchange of knowledge, practices and techniques about agroecological farming occurred during the coffee-breaks and lunch. Three main types of starting conversations during coffee-breaks and lunch were observed: a farmer approached to a specific person (farmer or technician) to talk about a concrete issue; a CE's technician commented to a farmer(s) about a specific technique, practice or product based on someone's experience or research, or a farmer simply asked another farmer about how was everything or a specific crop and an exchange of information, practices, etc. derived from it.

During the Nucleus meeting *per se* the most of the comments and conversations were about the legal procedure and technical requirements related to the organic certification and not to the agroecological farming techniques. For instance, in the last SLN meeting, in November 2012, it was decided that the Verification Committee would be paid for the verification visits instead of continuing doing it as volunteers.

Besides discussing about certification issues, the main points of the previous seminar organized by Ecovida and the recent creation of a new Ecovida's Group Work –native seeds– were also presented. This information mainly consisted of general ideas about the agroecological practices, such as, *"Using the energy from the sun as much as possible"* and combining different root systems in the plots (17-PO).

Textbox 7. Nucleus Meetings (cont.)

Moreover, one of the CE's technicians announced the coming activities organized by CE and 'asked for' participation. And, spontaneously, three farmers asked CE for? organize a course about the use of the biodynamic calendar.

It was noticeable the highlighted leader role of the SLN coordinator. The SLN coordinator was recognized as a popular leader within the Nucleus. He made several emphatic comments along the meeting about the importance of continuous learning about agroecology. For instance, the SLN coordinator said (not literally): since there are four new persons in the group, let's talk about the importance of using trees and spontaneous plants, (literally) *"Who of you knew that 97% of the energy that a plant uses to develop itself comes from the sun?"* (17-PO). Moreover, he announced publically that he was going to do a course of biodynamic agriculture showing himself as an example of his own words. Additionally, he finished the meeting saying: *"We grew up inside the group"* using a figurative sense (17-PO).

The SLN coordinator led the meeting and the role of the CE technicians was to accompany the meeting, be informed and give support in case it was necessary. Therefore, one of the main distinguishing characteristics was that the information mainly flowed among farmers with a few and direct participation of the CE technicians.

Source: Self-design based on fieldwork data.

4.2 IN-BETWEEN-PGS CATEGORY

The certification process and the agroecological activities carried out by CE and Ecovida were intimately integrated. Furthermore, for being certified by Ecovida, it was necessary to belong to the Ecovida Agroecological Network, which implied the participation in the activities of SLN and Ecovida. Due to these two reasons, there were several activities that were carried out by CE and Ecovida but were not compulsory for the PGS process *per se*. These activities were named, in this research, In-Between-PGS activities.

For each of these In-Between-PGS activities, the stakeholders involved, the contribution of each activity to the exchange of agroecological knowledge, techniques, skills and know-how, and the most remarkable features are presented in the next table (table 9). The presented information was collected through participant observation and interviews to the SLN's farmers/processors.

Table 9. Contribution of In-Between-PGS Activities to Exchange of Knowledge, Skills and Techniques, and Learning among SLN's Farmers and Technicians

IN-BETWEEN-PGS (Agroecological Activities due to belonging to SLN-Ecovida)				
Activities	Stakeholders Involved ¹	Contribution to Exchange and Learning? (Yes/No)	How much? (Very much/Enough /A little bit/Nothing)	Main Characteristics Found
Experimentation-Observation	<ul style="list-style-type: none"> Farmer-researcher of SLN CE technicians Other farmers of SLN and out (Other technicians) 	Yes	Very much	<ul style="list-style-type: none"> Mainly individually Emphatically promoted by CE
CE Activities: courses, workshops, festivals, etc.	<ul style="list-style-type: none"> CE technicians Farmers of SLN (Other technicians) 	Yes	Very much and A little bit	<ul style="list-style-type: none"> High flexibility for 'interrupting' (+) High respect listening to (+)
CE Technical Assistance	<ul style="list-style-type: none"> CE technicians Farmers-assisted of SLN 	Yes	Very much	<ul style="list-style-type: none"> Increasing technical independence of farmers (+)
CE Field Visits: local, regional, national, international	<ul style="list-style-type: none"> Farmer-visited of SLN and out Farmers-visitors of SLN and out (CE technicians) 	Yes	Very much	<ul style="list-style-type: none"> The most suitable groups were small and compounded by farmers
Ecovida Meetings	<ul style="list-style-type: none"> Farmers of Ecovida and out Technicians of Ecovida and out 	Yes	Enough ²	<ul style="list-style-type: none"> Increase the group feeling (+) Possibilities of exchanging with different persons/actors (+)
Others within the Ecovida Network: Anama	<ul style="list-style-type: none"> ANAMA technicians and Juçara Network members³ Farmers of SLN and (out) 	Yes ⁴	Very much ⁴	<ul style="list-style-type: none"> Lack of connection and synergy with CE activities (-)
Other group activities: fraternization encountering, etc.	<ul style="list-style-type: none"> Farmers of SLN (CE technicians) 	Yes	A little bit	<ul style="list-style-type: none"> Enhance group feeling (+)
Others: specific actors within the SLN, contact with other farmers groups, interns, organic fairs (Torres and POA) and written material by CE-Ecovida	<ul style="list-style-type: none"> Farmers of SLN and (out) Interns from different places (young students of agroecology) Organic consumers CE-Ecovida technicians 	Yes	A little bit	<ul style="list-style-type: none"> Some specific farmers had a strong influence in the rest of the SLN farmers (-/+)

Source: Fieldwork data.

1: This symbol () means that these stakeholders had a secondary role.

2: The level of exchange of knowledge, techniques, etc. and learning was high but the frequency of the meetings was low as well as the number of SLN's participants.

3: ANAMA (Ação Nascente Maquiné) was a local ONG focus on rural extension and environmental and cultural research located within the SLN territory. And the Juçara Network (Rede Juçara) was an articulation of organizations and producers aimed at the development of supply chains of the pulp of the Juçara Palm fruits preserving the Juçara Palm specie (*Euterpe edulis*).

4: Only for farmers located out of the working area of CE and inside of the working area of ANAMA.

+/-: This means a positive/negative feature for exchange of knowledge, skills and techniques, and collective learning.

In general, all the activities involved a high contribution to the exchange of agroecological knowledge, techniques, skills and know-how, and a collective learning process within the SLN's members, both farmers and CE's technicians. The activities with higher contribution were: Experimentation-Observation, Courses, Workshops and Visits organized by CE, the CE Technical Assistance and ANAMA's work with the farmers located within its action area.

In the case of Ecovida meetings, even though they represented a very intense moment for exchange of ideas, opinions, experiences, etc. due to its low frequency and reduced number of attending SLN's farmers, it could be considered as a lower contribution to the agroecological 'knowledge pool' of SLN than the activities mentioned above.

Based on the interviews and the observation during the fieldwork, one of the best ways for farmers to learn was observing and doing. This means that in all the activities where farmers had the possibility of seeing and doing, they learnt a lot. These activities were all of them except the 'Other group activities' and 'Others', the ones that had a lower effect in the knowledge exchange.

In the next sections, the In-Between-PGS activities are described in more detail.

4.2.1 Experimentation-Observation

The experimentation-observation was one of the most common learning ways for farmers according to the conducted interviews. It could be defined as an individual process in which other stakeholders played a role, besides the farmer who was experimenting.

On the other hand, one of the most repeated comments by CE's technicians/coordinator and SLN's farmers, in several situations; about what was necessary for being an agroecological farmer was "*to be patient*". Both, CE's technicians and SLN's farmers, insisted in the necessity of learning step by step in your own field, testing different types of techniques, products, managements and practices in order to understand and 'find' the balance of your own system and learn how your own field –system- worked. In one of the farmers' words:

"You learn things by doing. Knowing the theory is one thing, but doing it is a different thing." (15-II)

"You learn how to do by yourself. That's why you can't be in a hurry. The process is slow. Organic (agriculture) is slow." (11-II)

Moreover, farmers said that people who abandoned organic farming was because they wanted rapid solutions and practicing agroecology took time.

The spirit of experimenting was continuously transmitted by the CE's technicians and commonly present among SLN's farmers. Moreover, SLN's farmers and CE's technicians demonstrated a high appreciation by farmers as 'engineers' who used their ingenuity to solve their own problems.

The CE's technicians said that the learnt information is for putting into practice and until this moment, it is not completely learnt. They gave the farmers some guidelines and recommendations but always CE's technicians motivated farmers to check and see it by themselves warning that each farm was different and each farmer had to found his/her way in agroecology. At the same time, CE's technicians, and mainly the CE's coordinator, encouraged farmers telling them (not literally): "innovation was the difficult and, at the same time, the attractive part of agroecology. There were not written recipes as in the conventional agriculture. Each farmer had to use his/her creativity to find the way that matches better in his/her farm and according to his/her way of working."

The following textbox (tbx. 8) describes an example of the introduction and expansion of a biofertilizer, namely 'Gigamix' within the SLN's farmers.

Textbox 8. Experimentation-Observation: the case of the ‘Gigamix’

During the fieldwork carried out, a biofertilizer made out of a mixture of minerals and in powder form, called ‘Gigamix’, was being introduced and spread among several SLN’s farmers. One of the SLN’s farmers knew about the product from a seller and tested it in some banana plants. The effects observed were that plants’ growth was faster and seemed to develop stronger. This farmer started to comment the results with other farmers who belonged to his farmer group and also with other SLN’s farmers. Successively, other farmers started to test the ‘new’ product and commented their results in different situations –farmer meetings, courses, CE’s field visits- as well with SLN’s farmers and CE’s technicians. Furthermore, farmers asked to the CE’s technicians for their opinion about the ‘new’ product that they heard about. Moreover, not all the farmers who experimented with ‘Gigamix’ applied it exactly in the same way. After the fieldwork of this study, farmers were still testing ‘Gigamix’ to ‘discover’ the best way to use the product, and observing and analyzing the effects from it. On the other hand, there were also some farmers who did not have any interest on experimenting with this product. During that time, one of the CE’s technicians researched whether ‘Gigamix’ was registered as an organic product in order to know whether it was allowed for using it in organic agriculture.

Therefore, in this case, this exchange among SLN’s farmers of their individual experiences was contributing to make new discoveries aimed at improving their agroecological practices. Moreover, these experiences were also spread during some field visits of technicians from outside SLN to SLN’s farms. And, it is very likely that some of these experiences were going to be shared in the following Ecovida meeting taking into account that other practices already implemented by SLN’s farmers came from an Ecovida meeting.

Therefore, even though the experimentation-observation activity was an individual process for being part of SLN and Ecovida, it became a participative process with a positive impact in the whole network.

Nevertheless, what was a good technique for a farmer could not work for another. A specific management was not so successful in general even when one farmer was satisfied with the results. For example, two farmers recommended the use of “*amendoim forrageiro*” in the banana fields in order to control the natural vegetation and also to provide nitrogen to the soil. However, another farmer stated that he did not like this technique because of the negative effects on the banana crop. Moreover, a CE’s technician also did not like the use of the “*amendoim forrageiro*”.

Source: Self-design based on fieldwork data.

4.2.2 CE's Activities: Courses, Workshops, Field Visits and Festivals

All the farmers interviewed agreed on the usefulness of the **courses** and **workshops** organized by CE, for learning agroecological techniques and products. Furthermore, in several occasions the good combination of both, courses and workshops, for the integral farmers' training was also commented. The diagram representing the '*Basic Course of Organic Agriculture*', included in the section '*In-PGS Activities*', also shows the dynamic of the knowledge and information flow during other courses and workshops organized by CE (fig. 14).

The next textbox (tbx. 9) includes more detailed information about the courses and workshops organized by CE.

Textbox 9. CE's Activities (Courses and Workshops)

In both activities, the participants were the SLN farmer-members, Ecotorres¹ coordinator, CE's technicians and other technicians who collaborated with Ecovida.

In the **courses** there was a combination of theoretical knowledge and practical farm applications. It means that it was explained a scientific basis that was transformed into the practice in the farm. The courses' methodology was similar to the farmer group meetings in the sense that even though there was a structure, there was also quite a lot flexibility for 'interrupting' with comments, questions and personal experiences. Therefore, all the participants, farmers and CE's technicians complemented and clarified what the trainer was explaining, making the course much richer in contents. Hence, the 'interruptions' were not considered as such but as complementary and useful information and knowledge shared. Moreover, a relaxed and respectful atmosphere completely open to any comment was created.

Besides the ideas exchanged along the official course time, during the coffee-breaks and lunch-breaks, there were conversations involving two-three persons, only farmers or farmers and technicians, in which more personal experiences, doubts and recommendations were shared. These moments are described more deeply in the '*Textbox 5. Nucleus Meetings*'.

A **group work methodology** was used in the sessions and a high participation of farmers was achieved. Moreover, this methodology made that farmers had a more direct and closer contact between them. Nevertheless, a considerable amount of information exchanged during the group works was lost from the group work sessions until the presentation to the rest of participants.

It was used a **group work methodology** in the sessions and it was achieved a high participation of farmers. Moreover, this methodology made that farmers had a direct and closer contact between them. Nevertheless, a considerable amount of information exchanged during the group works was missed from the group work sessions to the presentation to the rest of participants.

1: Ecotorres is one of the two consumer cooperatives located within the North Littoral area which belonged to SLN.

Textbox 9. CE's Activities (Courses and Workshops) (cont.)

However, in the **workshops** all the information was practical. There was not a scientific basis explained during the workshop. The environment was more relaxed and informal and less structured than the courses. Even though there was a high participation, it could also happen that some participants did not learn all the process and explanations as well as during the courses. The information also flowed from technicians to farmers and *vice versa* and among farmers. During workshops more parallel conversations occurred, which could be about agroecological or personal issues, or simply jokes. The number of participants was lower than in the courses, hence, the resources spent per participant were proportionally higher.

Source: Self-design based on fieldwork data.

Visits organized by CE could be understood from two different views: from the visited farmer or from the visiting farmer. In both cases, farmers had the leading role as represented by broader and darker arrows in the diagram. Nevertheless, the presence of the CE's technicians was highlighted in several moments, such as, during the introduction (first contact), and some clarifications and complementary information additional to the comments of the visited farmer. The following diagram (fig. 17) shows the information, knowledge and practices flow during field visits.

- **Visits received by SLN's farmers:** visited farmers explained to the visitors the farm management from a very practical point of view. Farmers led the visits and the CE's technician complemented the information, in case it was necessary. Specific and general questions were asked and answered. Moreover, visitors also shared their experience or knowledge about the topics talked. As a visited farmer explained (not literally): "if the group was not too big (8-10 persons) and they were farmers, I normally learnt something. Otherwise, I just passed information to visitors" (29-II).
- **Visits carried out by SLN'S farmers:** farmers stated that they learnt very much in the field, both general agroecological issues and specific and practical information. Sometimes, SLN's farmers could apply the learnt information directly and other times they had to adapt it to their farms. On the other hand, it could happen that when the visit was organized locally, learning, and specially the application of the learnt knowledge, was higher than when the visit was to a very different contexts, crops, weather, soil, etc. However, the collected information shows contradictory information about this issue. Sometimes the opportunity of knowing other different realities did not bring any direct knowledge, technique or know-how to the SLN's farmers. Nevertheless, as a farmer explained (not literally): "just having awareness of other hard realities that other farmers had to face, gave me more strength for continuing in the agroecology" (02-II).

Something remarkable was that the visited farmers showed gratitude and happiness for receiving visits and explaining to visitors what and how they did things in their farms. On the

other hand, visitors were also thankful and congratulated the visited farmers for their good work in the farm and also for the shared time and ‘wisdom’.

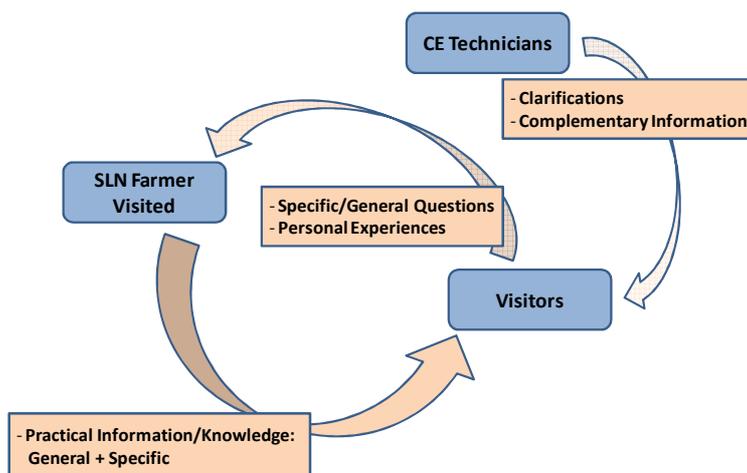


Figure 17. Information, Knowledge and Practices Flow in CE Field Visits

Source: Fieldwork data.

The only **festival** attended had a different goal compared to the courses and workshops. The aim of the festival was to present potential initiatives for the future and to seek new partnerships between CE and governmental offices. Therefore, there was not much exchange of information and knowledge about agroecological practices. More information is included in the next textbox (tbx. 10).

Textbox 10. CE’s Activities (Festivals)

The number of participants was much higher than during the courses and the organizational level and the methodology were more rigid. It means that the speaker was not interrupted by the attendees during the presentation because there was a fixed time for questions and comments. This made the atmosphere much more formal and the information was mainly transmitted from the speakers to the audience.

The information was also more technical and less specific compared to the courses and workshops. This event gathered very different type of participants, such as, SLN’s farmers; CE, ANAMA and EMATER/RS technicians; other technicians; researchers; TEIA members; women group’s members; OPAC members; Econativa members and a priest of the region who supported actively the agroecological movement since de the beginning, among other participants.

Furthermore, during coffee-breaks and lunch there were some conversations within small groups of participants about the speeches presented including some critics related to subsidies to family farmers. Moreover, some participants took the opportunity to consult some issues to specific attendees.

Source: Self-design based on fieldwork data.

4.2.3 CE Technical Assistance

CE technical assistance only occurred within the CE's working area, which did not include all the area included in the SLN. Therefore, farmers who were not included in the CE's working area but belonged to SLN were receiving technical assessment by ANAMA, another ONG that also belonged to the SLN and Ecovida Network.

As it was observed and also explained by one CE's technician, within the CE's working area, 'new' organic farmers were most frequently assisted than 'old' farmers. However, when an 'old' farmer needed the technical assistance from CE, he/she received it. CE's methodology consisted of farmers becoming independent but not disconnected from CE-Ecovida. In words of one of the first ecological farmers in the region: *"Today, CE is not here for giving technical assistance, they are here mainly for being a partner. But if I have a doubt, I'll call them"* (14-II).

Besides the technical topics and the updating information, other personal topics emerged during the conversation. This is that the presence of CE was not only limited to the agroecological issues, but it went further involving a personal relationship. This personal implication was, of course, noticed by farmers, and appreciated by them. It was one of the basis for the type of relationship that existed between CE and the farmer-members of SLN.

The following graph (fig. 18) represents how information, knowledge, advices, techniques, ideas, etc. were exchanged between farmers and CE's technicians during the CE's technical assistance. Although during the courses, workshops, field visits and farmer group meetings there was feedback about the different techniques and practices exchanged, in the CE's technical visits feedback between the farmer and CE's technician was more frequent. It is noticeable that even though farmers asked doubts to the CE's technicians, also CE's technicians received considerable information about agroecology. One interviewed farmer defined this: *"We are learning with them and they are also learning with us"* (07-II).

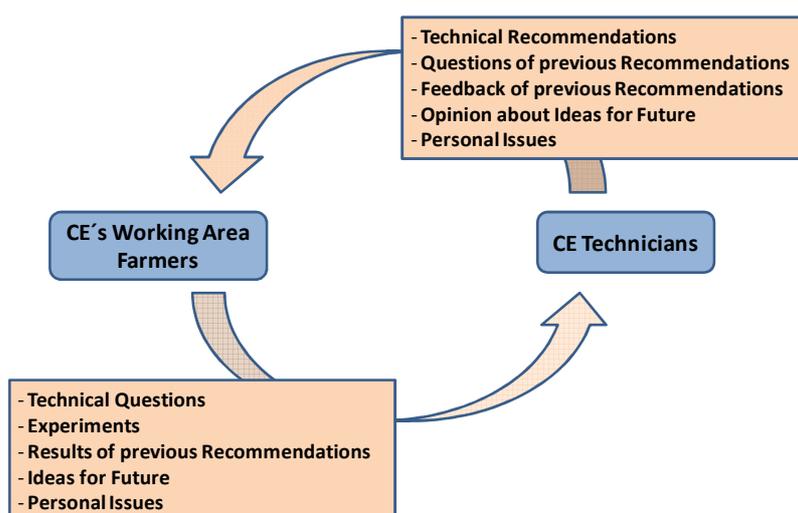


Figure 18. Information, Knowledge, Techniques, Ideas Flow during CE Technical Assistance

Source: Fieldwork data.

4.2.4 Ecovida Meetings

All the interviewed farmers considered Ecovida meetings as very appropriate occasions for the exchange of practices, ideas, techniques, etc. and for increasing his/her knowledge about agroecological practices.

The structure, methodology and type of content of Ecovida meetings were similar to the courses and workshops organized by CE. The distinguishing aspect was that Ecovida meetings gave the opportunity of exchanging among stakeholders of different Regional Nuclei (RN) which enriched each RN with new ideas, views, knowledge and agroecological practices. More details about Ecovida meetings are in the following textbox (tbx. 11).

Textbox 11. Ecovida's Meetings

The objectives were to exchange agroecological knowledge, experiences, techniques, know-how, etc. among Ecovida's members (farmers, processors, consumers, technicians, etc.), who came from different states of Brazil, and increase the group feeling.

The participants were the Ecovida Agroecological Network members, from the three Southern states of Brazil, and also other persons, from outside of the Ecovida Network, who were highly connected to the agroecological movement.

Ecovida's meetings were described by interviewees as a combination between theoretical and practical knowledge in which the information/knowledge flowed from technicians to farmers and *vice versa*. Moreover, Ecovida's meetings also included workshops and group works in which more practical applications were shared.

On the other hand, the atmosphere was described by several interviewees as a 'meeting with friends'.

Source: Self-design based on fieldwork data.

4.2.5 Others within the Ecovida Network: ANAMA

In case of the farmers who did not belong to CE's working area and therefore, belong to ANAMA's working area, the activities organized by ANAMA, such as courses, workshops, field visits, fairs, technical assessment, etc., were considered by farmers very important for knowledge exchange and learning process about agroecological techniques.

4.2.6 Others: group activities, fraternization encountering, specific actors within the SLN, contact with other farmers groups, interns, organic fairs (Torres and POA) and written material by CE-Ecovida

Each activity of this group contributed to increase the agroecological knowledge of some farmers in a low level.

Among these activities, the role of specific actors within SLN (described in more detail in the previous section 'Nucleus Meetings') and the group activities carried out by some farmer groups were the more significant in the knowledge, practices and techniques exchange among farmers. Both activities strongly encouraged farmers to test products and techniques in their fields.

4.3 OUT-PGS CATEGORY

In general, Out-PGS activities only contributed a little bit to increase some farmers' agroecological knowledge.

The following table (table 10) shows the data collected, through interviews to SLN's farmers/processors and CE's technicians and participant observation, about the actors involved, the level of contribution to knowledge, techniques and skills, and the most relevant aspects of each of the Out-PGS activities.

Table 10. Contribution of Out-PGS Activities to Exchange of Knowledge, Skills and Techniques, and Learning among SLN's Farmers and Technicians

OUT-PSG (Other "External" Activities to SLN-Ecovida)				
Activities	Stakeholders Involved ¹	Contribution to Exchange and Learning? (Yes/No)	How much? (Very much/ Enough/A little bit /Nothing)	Main Characteristics Found
Other Organizations' Activities (EMATER/RS, Rural Union of Workers, Municipality) ²	<ul style="list-style-type: none"> Farmers of SLN EMATER/RS technicians (Staff of the municipality) 	Yes	A little bit	- Lack of connection between CE and other organizations working in organic agriculture in the region (-).
Contacts with actors "out" of Ecovida: personal visits to other farms, neighbors, other persons, etc.	<ul style="list-style-type: none"> Farmers of SLN Conventional farmers-neighbors (Other experts in alternative agricultural techniques) 	Yes	A little bit	<ul style="list-style-type: none"> - Almost non-opportunities of increasing the 'knowledge pool' of SLN (-). - Possibilities of spreading agroecological knowledge to non-organic farmers. - Low acceptance of agroecology in the region.
Previous Experience: self-experiences, relatives, etc.	<ul style="list-style-type: none"> Farmers of the SLN Father's farmers 	Yes	A little bit	- The main source of information was farmers' father.
Media: television, radio, internet ³	<ul style="list-style-type: none"> Farmers of the SLN 	Yes	A little bit	- The main source of information was the television.

Source: Fieldwork data.

1: This symbol () means that these stakeholders had a secondary role.

2: These activities involved Technical Visits; Courses, Workshops and Written Material elaborated by EMATER/RS or MAPA, etc.; Visits from Schools not involved in the TEIA; Visits from universities; Researchers non-related to CE/Ecovida research and Being member of other OPACs.

3: It was not possible to Exchange Knowledge, Information, and Experiences in this activity, only Learning.

-: This means a negative feature for exchange of knowledge, skills and techniques, and collective learning.

4.3.1 Other Organizations' Activities (EMATER/RS, Rural Union of Workers, Municipality)

Among the local organizations that worked with farmers in the region, besides CE and ANAMA, EMATER/RS (in Portuguese, Empresa de Assistência Técnica e Extensão Rural) was the most present one in the area. EMATER/RS was a private organization which had an agreement with the regional government for providing the public service of technical assistance and rural extension in the Rio Grande do Sul state since 1976. Besides other non-agricultural working guidelines, such as, activities focus on rural women and environmental education in local schools, EMATER/RS also worked with conventional and organic farmers in the region.

Even though there was an EMATER/RS office in each locality, all the EMATER/RS staff shared the same general working guidelines mentioned above. However, depending on the specific technicians, their work with farmers varied from some localities to others in the specific content and methodology.

Only a few number of interviewed farmers had contact with EMATER/RS in occasional moments in the past. And only one farmer had a continuous contact with this organization.

One of the reasons of the lack of connection between CE and EMATER/RS work was the EMATER/RS history in promoting the use of chemical inputs (fertilizers, herbicides and pesticides) among the regional farmers. The promotion of chemical inputs by EMATER/RS took place until at the end of the 80s and beginning of the 90s, and it was considered relatively recent by the local organic farmers.

On the other hand, only a few number of interviewed farmers had an occasional contact with the Rural Union of Workers or the municipality in relation to agroecological farming.

4.3.2 Contacts with Actors "Out" of Ecovida: Personal Visits to other farms, Neighbors, Other Persons, etc.

The most significant comment about learning of agroecology from other actors 'out' of SLN-CE/Ecovida became from a woman farmer who said that once she visited an expert in Porto Alegre about flower therapy applied to crops. And she was using this flower technique.

A significant comment about spreading agroecological techniques in the region became from another woman farmer who commented that some of her neighboring farmers asked her about the appropriate day for planting according the biodynamic calendar.

However, the majority of the organic farmers of the region belonged to SLN and, therefore, to the Ecovida Agroecological Network. For this reason, exchanging agroecological information with farmers who did not belong to SLN rarely happened because there were almost no agroecological peers 'outside' of SLN to discuss the topic. Moreover, the conventional farmers of the region did not believe in agroecology. As some agroecological interviewed farmers said (not literally), "their neighbors thought that agroecology did not work and that they were crazy for using agroecological techniques".

4.3.3 Previous Experience: Previous Self-experiences, Relatives, etc.

The highest contribution to the agroecological knowledge, techniques and skills of the interviewed farmers, related to their previous experience about agroecology, was their fathers who practiced agriculture before the Green Revolution arrived to Brazil. Most of the current agroecological farmers became from a farming family and they also worked with their parents in the farm using agroecological management, but without even knowing the word 'agroecology'. Therefore, this was also another source of knowledge, techniques and practices that were incorporated to SLN-Ecovidia 'knowledge pool'.

4.3.4 Media: Television, Radio, Internet

Among the different media's sources of information, the television was the most used one by the farmers interviewed. However, it was not a relevant source of information compared to the rest of the sources of knowledge, techniques and skills described in this chapter. The most noticeable aspect was the critical comments made by a few of the farmers about the manipulation of the information by the media and its hidden interest behind the information given. These critical comments reminded the same type of comments expressed by CE's technicians related to agro-business and international corporations, among others.

4.4 FINAL REMARKS ABOUT EXCHANGE OF PRACTICES, SKILLS, KNOWLEDGE AND TECHNIQUES, AND LEARNING WITHIN THE SOLIDARITY LITTORAL NUCLEUS

In this section a summary of the more highlighted remarks about the exchange of practices, skills, knowledge and techniques and participatory learning process occurred within SLN is presented. Some of these issues were already described before and others are aspects that were observed in different activities and that correspond to the general lines of working, behaving and skills of different SLN's stakeholders.

- **Doing, seeing, touching, smelling**, etc. were the most important actions for farmers, according to the interviews, to learn agroecology. All these actions were included in the following activities:
 - **In-PGS Activities:** the 'Basic Course of Organic Agriculture', peer visits and verification visits.
 - **In-Between-PGS Activities:** experimentation-observation, courses, workshops and field trips organized by CE, Ecovida meetings and activities organized by ANAMA.
- Knowledge, technology, skills and know-how transmitted **from a farmer or CE's technicians** were more reliable to the farmers who received the information than when it came from technicians 'outside' of SLN-Ecovidia.

- **Farmer Group Meetings** were very important for agroecological farmers from the point of view of gathering people who were very interested in agroecology, and, therefore, for sharing and learning together.
- **Experimentation-Observation** besides being a learning activity was an essential characteristic for being an agroecological farmer.
- **The horizontal relationship** between the SLN's members combined with the flexibility for 'interrupting' during the courses and meetings promoted exchange of ideas, experiences, doubts, etc. Hence, it promoted a participatory learning process.
- The continuous **promotion of learning and exchanging experiences** undertaken specially by CE's technicians and other key SLN's stakeholders roused the interest of farmers for increasing their knowledge about agroecology. Moreover, it contributed to the group spirit, helping each other and 'doing together'.
- **Strong leaders** move forward against democracy and horizontality within the SLN.
- **Few connections** between CE-SLN and other '**external**' stakeholders within the territory.
- Highlight **role of CE's personnel** accompanying the activities and trajectory of SLN's family farmers. Their role and skills could be described as it follows:
 - Encouraging farmers' independency, individually and within the farmer groups: stimulating farmers to discuss among them and getting involved only to make clarifications, when farmers asked them directly or when someone was giving wrong information.
 - Promoting new alternatives for farmers, such as, açai¹⁰ and agroforestry.
 - Transmitting information about agricultural techniques, products, certification, Ecovida, etc.
 - Building the 'knowledge-bridge' between farmers, external technicians and researchers.
 - Providing technical assistance and at the same time that stimulating farmers' own experimentation.
 - Adopting an open position related to the different strategies chosen by farmers/producers for production and commercialization, all of them included in the 'umbrella' of the organic agriculture.
 - Being severe about the compliance to the organic requirements.
 - Mediating in unfair, controversial situations or conflicts within farmer groups and among SLN's stakeholders/members.
 - Fostering critical thinking among farmers related to agro-business, agroecology, international corporations of seeds and other agricultural inputs, etc.
 - Showing a professional and personal commitment to their work and agroecology and going beyond professional relationships having personal interactions with farmers/processors.

¹⁰ Açai was the fruit from the Juçara Palm specie (*Euterpe edulis*), one of the native species of the Mata Atlântica, the endemic forestry vegetation characteristic of Rio Grande do Sul.

4.5 EXAMPLES OF PRACTICES EXCHANGED AMONG SLN'S FARMERS ABOUT AGROECOLOGICAL FARMING

The results coming from the pilot deep-interviews conducted to SLN's farmers revealed that one of the most repeated ideas by CE's technicians and also the strongest embodied by SLN's farmers was the importance of **balancing the whole agrosystem** paying special attention to the soil. Therefore, one of the most common answers from farmers to the question: '*What do you do (which practice, product, technique, etc.) for managing a specific disease?*' was (not literally): "I mainly focused on having a balanced agrosystem, a healthy one in order that crops are less damaged by a disease due to their healthy development".

Therefore, although the information collected during the fieldwork was not focused on a specific disease, some concrete techniques or practices, related to different problems that SLN's banana farmers faced, were exchanged among SLN's farmers and CE's technicians. Some examples are presented in the following table (table. 11).

Table 11. Techniques and Practices Used and Exchanged among SLN's Farmers and Between SLN's Farmers and CE's Technicians

Problem (Disease, Pest, Spontaneous Vegetation, Others)	"Solution" (Technique, Tool, Product, Tip, etc.)
Panama disease (banana crops): disease caused by the fungi the <i>Fusarium oxysporum</i> f. sp. <i>Cubense</i> (' <i>Mal de Panamá</i> ')	Natural phosphate and ash ('fosfato natural e cinza')
Banana Weevil Pest: pest caused by the coleoptera <i>Cosmopolites sordidus</i> (German) (' <i>Broca o Moleque da bananera</i> ')	Cut into pieces sugar cane and put it inside a dark bucket and locate it inside the banana field
Yellow Sigatoka (banana crops): disease caused by the fungi <i>Mycosphaerella musicola</i> Leach et Mulder (' <i>Sigatoka Amarela</i> ')	Fungicide: Mineral oil (' <i>óleo mineral</i> ') or used frying oil taken from a restaurant, for instance Preparation and application: Mix 2 liters of emulsified mineral oil with 18 liters of water. Spread it on the banana leaves
Strengthen Crops and Protect them against Pests and Diseases	Biofertilizer: supermagro ¹
Prevent from Fungal Attacks	Organic fungicide (' <i>caldo bordelés</i> ')
Prevent from Insects Attack of the Banana Bunch	Biofertilizer applied on the banana bunch
Protect Banana Fruits from Pests and Strong Sun	Cover the banana bunch with a plastic bag and put a banana leave inside
Control of Weeds and Low Soil Fertility in banana field	Plant <i>Arachis pintoi</i> Krap.: a leguminous plant (' <i>amendoim forrageiro</i> ')
Increase Beneficial Microorganism in Soil	Natural soil amendment: 'Bokashi'
Low Soil Fertility	Biofertilizer: Organic poultry manure ('esterco de peru ou cama de aviário')
	Green manures of sugar cane ('cana de açúcar')
	Green manures of peas and oats ('ervilhaca e aveia')
	Biofertilizer: Rock dust, "rock minerals", "rock powders" (' <i>pó de roça</i> ') Biofertilizer: Natural phosphate (' <i>fosfato natural</i> ')
Improve Banana Fruit Development	Cut off the banana flower cluster
Increase the Strength of Banana Crops	Biofertilizers: Applied on the banana leaves and bunch
Reduce of Volatilization Losses of Manure	Just after the application of manure, cover it with straw and leaves
General Crop Management: Sowing, Planting and Others	Biodynamic calendar

Source: Fieldwork data.

1: Centro Ecológico was the main responsible for the development of the 'Supermagro' biofertilizer.

CHAPTER 5. DISCUSSION

Increasing agroecological knowledge, techniques and practices aim at solving farming problems, mainly at farm level, is something crucial. On the other hand, certification of organic food is almost an essential requirement demanded by markets and governments. Therefore, could it be possible to achieve both jointly?

This thesis explores the possibilities of combining certification in organic agriculture and a learning process of agroecological practices among farmers. Specifically this study explores the PGS certification system carried out by the Centro Ecológico NGO (CE) and Solidarity Littoral Nucleus (SLN), as a member of the Ecovida Agroecological Network, in the North Littoral region, Rio Grande do Sul state, Brazil. It is researched how the PGS process was performed by CE-SLN and Ecovida and whether and how PGS contributed to the exchange of knowledge, techniques, skills, and practices and a participatory learning process about agroecology. In the following section 5.1, empirical findings about the nature and work of Ecovida and CE, the 'PGS-staging' process within the SLN and the effect of both on the 'agroecological exchange'¹¹ and learning among farmers-technicians are aimed to answer the research question. In the section 5.2, a theoretical discussion about certification and learning approaches is discussed in relation to PGS within SLN.

5.1 EMPIRICAL DISCUSSION

This section, based on the empirical results from fieldwork, is aimed at answering the research question of this thesis:

How does Centro Ecológico-Ecovida, through PGS certification and other activities, influence changes in the agroecological farming practices of Solidarity Littoral Nucleus' farmers?

5.1.1 PGS Procedure, Centro Ecológico and the Ecovida Agroecological Network

The first sub-research question that this thesis addresses is: ***What are Ecovida, Solidarity Littoral Nucleus and Centro Ecológico? How are the internal organization and certification procedure –of organic food- within Centro Ecológico and Solidarity Littoral Nucleus?***

Core Values of the Organic Movement

Actually, these both questions are quite related to each other because PGS carried out by CE-SLN was 'shaped' by Ecovida-CE and, therefore, involved their principles, core values and objectives. Therefore, it could be said that PGS's performance represented Ecovida-CE in the certification field. Additionally, Ecovida-CE belonged to the agroecological movement and, therefore, they shared the same values and principles. Hence, PGS was also shaped in line with the agroecological movement values. Consequently, in short, it could be affirmed that PGS was

¹¹ 'Agroecological exchange' includes the exchange of information, knowledge, techniques, skills, tools, information, practices and know-how.

the certification approach that represented the agroecological movement. This reinforces Khosla's statement (2006) that affirms that PGS reflects the core values and identity of the organic movement.

'PGS-staging': the Combination of a Disciplining Mechanism and the Freedom for Individual/Group Choices

PGS as a certification system involved a rigid mechanism in order to guarantee the compliance to the organic requirements by all the producers/processors, organic requirements which were established by the Brazilian organic law. But, on the other hand, PGS 'gave space' for farmers to take their own decisions and choose their personal or group approaches related to its group internal organization for, at least, one of the controlling mechanisms –peer visits-, production and commercialization strategies.

Therefore, PGS's discipline mechanism implied that all the key stakeholders of the supply chain were responsible for the certification process, even consumers although they were not involved directly. It means a collective responsibility because each farmer/processor was responsible for his/her own products but also for the crops/products of the rest of the SLN's members (farmers and processors). Moreover, CE's technicians also had the responsibility of being aware of farmers/processors' techniques in order to control their compliance to the organic requirements. Hence, although each farmer was the main responsible for his/her crops, whether it was proved that other farmers did not control his/her peer correctly, both would have been sanctioned. This same rule was also applied for the CE's technicians. Sanctions varied depending on the nature and magnitude of the rule broken. It could be expulsion of the SLN group and Ecovida Network, the temporarily suspension of the organic certificate or advices.

Besides this common base for farmers/processors and CE's technicians regarding the responsibility of complying to the organic requirements established by the Brazilian law, the use of the "basic organic strategies" in the production was the second component of the "Common Basics" to all the SLN's farmers (fig. 19). This "basic organic strategies" included crop rotations; green manure; crop diversification; managing pests, diseases and spontaneous vegetation instead of eliminating them completely; soil management and microorganisms; home-made biofertilizers; and living barriers to protect against the wind and insects and to promote natural enemies, among others. However, beyond the "basic organic strategies" that were shared by the SLN's members with different 'levels of intensity', different approaches about farming organically and commercialization were addressed by the SLN's farmers/processors. Moreover, within this rigidity about complying with the organic rules, there was still a room for farmer groups to adapt the controlling-certification mechanism within certain limits as it was represented in the figure bellow (fig. 19).

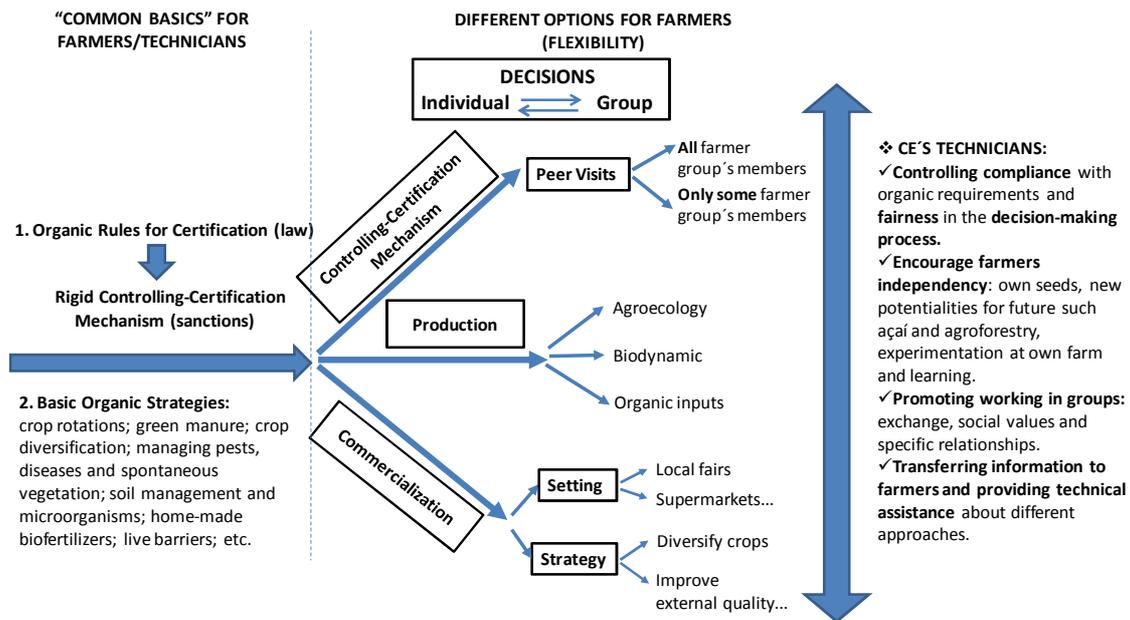


Figure 19. Common Basics for Farmers/Technicians & Individual/Group Options

Source: Self-designed.

Therefore, farmer groups, due to its autonomy, adapted part of the controlling mechanism to its particular dynamic within its farmer group regarding the organizational scheme for the peer visits. On the other hand, this variety of approaches of organic production and commercialization within the SLN's farmers/processors was due to the flexibility provided by CE-SLN for farmers to take their own decisions, individually and within the farmer groups, under the umbrella of the "Common Basics".

As it is shown in the diagram above, related to the certification mechanism, in most of the farmer groups, all the farmers/processors members undertook the peer visits. However, in one farmer group, its internal organization was different although in both cases the aim was achieved. Related to the production and commercialization strategies, each farmer or each farmer group chose a specific strategy for producing and commercializing. On the other hand, it could be affirmed that individual and group decisions were separated by a blurred border due to the close interaction between farmers within their farmer groups, and the possible consequences of farmer group's decisions in each farmer's farm and commercialization strategy. The main three types of production schemes were: agroecology, biodynamic and a broader use of organic inputs. And related to the commercialization options, two main aspects were decided by farmers and/or farmer groups: the commercialization setting (local fairs or supermarkets) and strategy (crop diversification or high external quality).

On the other hand, beyond the "Common Basics", CE's technicians tried to act in an objective way about the different possible approaches in production and commercialization under the organic umbrella. They tried to act objectively and not to influence farmers/group farmers' decisions about these aspects. CE's technicians' role could be described by the following actions:

- **Controlling compliance** of farmers/processors with organic requirements and **fairness** in the **decision-making process** within the farmer groups.

- **Encouraging farmers' independency** in production, through multiplying their own seeds; promoting new potentialities for the future, such as agroforestry and "açai" (a tropical tree crop); and fostering farmers to experiment in their own farms in order to search for solutions and innovations and to learn continuously as the 'path for achieving the independency'.
- **Promoting working in groups** that implied exchange of information, knowledge, skills, techniques and know-how. Hence, spreading agroecological practices and techniques. And, on the other hand, it also involved social values and specific relationships among farmers and between farmers and technicians, which could be considered characteristic of the agroecological-social movement.
- **Transferring information to farmers and providing technical assistance** about the different production schemes, such as, the biodynamic calendar for managing crops, specific associations between crops, biodynamic (home-made) preparations and biofertilizers. Furthermore, CE's technicians were informing and updating farmers/producers about certification rules, procedures and responsibilities.

Therefore, the flexibility for farmers to choose among the different approaches about producing and commercializing was combined with a disciplining mechanism characterized by forbidden practices and consequently, a sanctioning mechanism in case of non-compliance. Since farmers did not carry out any of the forbidden actions, the rest of the possibilities were completely open for them. However, each specific farmer group could also establish their own rules that could restrict the choices of their members because all of them had to comply to the group rules as well. Hence, it could be a dilemma between the autonomy of farmer groups and the freedom of farmers to take personal decisions.

On the other hand, CE's technicians had a dual relationship with farmers/processors. CE's technicians had a rigid attitude controlling that the organic requirements were complied with and fairness was present in the decision-making process. But, at the same time, CE's technicians' maneuver consisted in respecting and, even promoting, the autonomy of farmer groups as well as the individual independency of farmers/processors related to the different possibilities about production and certification, under the broad organic definition.

Furthermore, the implementation of PGS and organic agriculture was undertaken within the context of the agroecological-social movement where all SLN's members belonged to. And these setting conditions could contribute to shape the autonomy of farmer groups, the role of CE's technicians and the type of relationship between farmers and CE's technicians. However, this study did not analyze the freedom of farmers within their farmer groups and the possible influences of the decision-making process within farmer groups in the individual decisions of farmers.

Therefore, rigidity and flexibility in certification, production and commercialization were integrated in such a way that compliance with organic requirements was guaranteed while certain degree of autonomy was also possible. For that, the common base shared by all the SLN's members and the role of the CE's technicians were key aspects. Furthermore, the agroecological-social context could also play a role.

Integration of PGS with the CE-SLN's Activities and Action Taken

Additionally to the core values of the agroecological movement that PGS had, the high level of integration of PGS in the rest of the activities carried out by SLN-CE made it impossible to separate PGS from them. Furthermore, this combination and the interconnections among all the activities was what gave more value to each activity due to the synergies created among them. This could be compared to the meaning of agroecology for Ecovida-CE in the sense that agroecology was understood as an integration of all the elements present in agro-systems and natural systems and their interrelations and synergies. Therefore, the idea of addressing issues from a holistic vision taking into account the interrelations among all the factors or elements was represented both in agroecology and the CE-SLN's activities.

Moreover, the integration among all the activities of SLN, included PGS, could be interpreted as the statement, said by Laércio Meirelles –CE's coordinator-, that 'PGS cannot be understood as an isolated activity', when put it into practice. Therefore, this showed how ideas transformed into action within CE and SLN confirming one of the distinctive features of CE-Ecovida's Project: the action taken in their different working lines.

This integration of CE-SLN's activities combined with the formative goal of CE and PGS were key aspects in the contribution of PGS to 'agroecological exchange'¹² between farmers and among farmers and CE's technicians.

Participation is Required for Verification: Specific Roles as More Influential Positions?

As it was said in chapter 3 (section 3), the process for generating credibility and guaranteeing compliance to the organic requirements became a reality through the participation of farmers, processors and technicians, who were organized in a network. Therefore, the PGS process was based on this aspect: participation of the different key stakeholders and their interconnection within the network. This was the main feature that provided the guarantee to the system: diverse stakeholders assessing the compliance to the organic requirements. This is in line with Källader's statement (2008) about PGS as a farmer-controlled certification system as it is shown bellow. However, this case study also contributes with additional specific dynamics at the SLN and farmer group level. The obligation of this participation was present:

- At Farmer Group level: there was a fixed maximum absence of farmer/processor-members to their farmer group meetings. Furthermore, the Ethic Council, the task group at farm group level, was composed exclusively by all or part of the farmer/processor-members of each farmer group.
- At Regional Nucleus level: it was required the attendance of the farmer groups' coordinators to the SLN meetings, who were the second leading actors after the SLN's coordinator. The task groups at this level, the Ethic Commission and Verification Committee, consisted entirely of farmers/processors from each farmer group.
- At Ecovida Association level: commissioners from the different states where Ecovida was located were the members of the task groups at this level.

¹² 'Agroecological exchange' includes the exchange of information, knowledge, techniques, skills, tools, information, practices and know-how.

Therefore, even though all farmers/processors participated in the social control process being the 'protagonists', there were some of them that played another role as 'controllers' during peer visits (carried out by the Ethic Council) but especially during verification visits (undertaken by the Ethic Commission and Verification Committee). Hence, this raises the question of *Could this extra-role as 'controllers' represent a higher position of power or a more influential position among SLN's farmers/processors? And what about the farmer groups' coordinators?*

Based on the data collected and related to the **peer visits**, these were normally carried out by all the members of the farmer group. Thus, this 'controller' extra-role was not considered specific for particular farmers due to the fact that it was undertaken by most of the SLN's farmers. Moreover, peer visits were understood by farmers as something quotidian that neither involved extra time, nor responsibilities nor power, based on the data collected.

However, **verification visits** were considered by farmers/processors as a much more formal activity than peer visits, which implied also extra responsibility and time for the farmers-controllers. It could be said that the task of farmers-controllers was perceived by farmers/processors as an obligation and extra-work due to choosing PGS instead of TPC because it implied losing a day of work in their farms. Therefore, it had negative consequences from the viewpoint of farmers/processors as individuals, although it was accepted as part of belonging to the SLN-PGS group. Nevertheless, perhaps for some farmers the fact of belonging to the Ethic Commission and Verification Committee could also mean a higher position in a hierarchical power relationship, although this specific aspect was outside the scope of this study.

With regard to the **coordinators within the farmer groups**, this position was occupied by rotation of different farmers. This position involved higher responsibilities and more voluntary dedication to SLN and PGS what could also implied a higher powerful position compared to the rest of the farmer-members. However, what was noticeable and relevant was the presence of different leaders within the farmer groups besides the coordinators. Within a group there could be different types of leaders, such as, the affective leader, leader for commercialization, general leader, etc. Even sometimes, the coordinator also played a 'second' role as another type of leader, for instance, the commercialization leader. However, although this study only analyzed the general dynamic within the SLN and not the particular dynamics within each farmer group, it could be suggested that the 'strongest' leaders within farmer groups were in most cases connected to commercialization issues.

On the other hand, a relevant insight about the **influential positions** of some farmers was related to their **professional trajectory in agroecology**. It means that the higher recognition of some farmers by peer-farmers and CE's technicians came from their skills, knowledge, wisdom, and interest or curiosity/capacity for experimenting new practices or having new ideas about agroecological farming in their own farms.

Therefore, participation of farmers/processors and CE's technicians in the PGS process was a condition for the SLN's members. And this participation derived in specific tasks or responsibilities for farmers/processors, such as becoming 'controllers' in the peer visits and verification visits or farmer groups' coordinator or leader. However, the relationship between these roles and a possible influential position was unclear.

5.1.2 PGS and Exchange of Knowledge, Skills, Techniques and Know-how

The second sub-research question that this thesis addresses is: *How do Centro Ecológico and Solidarity Littoral Nucleus, based on the PGS certification scheme, encourage exchange of knowledge, skills, techniques and know-how about agroecological farming among the SLN's farmer-members?*

Willingness to Learn

The **willingness to learn** (about agroecology-agroecological techniques) did not come from PGS but mainly from the Ecovida-CE-SLN's work, although it could also derive from farmers' personal behavior. In any case, the willingness to learn is considered the first and fundamental step for farmers to increase their agroecological knowledge.

Ecovida and CE's technicians with the distinguished support of some specific farmers within the SLN were the ones to instill the willingness to learn among all the SLN's farmers. On the other hand, the willingness to learn was something that was probably 'infected' from technicians/farmers to other farmers. Therefore, when the willingness to learn was in the surrounding atmosphere, it is considered that all the farmers included in this atmosphere were contributing to spread the willingness to learn to the 'new' farmers of SLN. However, the answer to the question '*Where does the willingness to learn come from?*' does not have a clear answer in this study because it is outside of its scope.

Analyzing how the willingness was impacted and spread, it could be affirmed that there were five driving factors. It was not considered that PGS *per se* provided the willingness to learn but the people carrying out PGS, through: their enthusiasm for agroecology, being an example of continuous trainee, showing the results from learning, showing agroecology as an attractive challenge to achieve and learning as the method to do it, encouraging to improve farming, congratulating and recognizing farmers' successes and effort, among others.

Furthermore, CE's technicians stated continuously that each farmer had to understand and design his/her own specific agroecological processes that occurred within his/her farm. Each farm was a different agrosystem in which the farmer had to adapt the farm's management to the farm itself and to himself/herself. And the only way to achieve it was experimenting, exchanging and, therefore, learning. Hence, experimenting, exchanging and learning became an indispensable requirement for becoming an organic farmer.

Moreover, the CE's technicians' way of transferring information and knowledge to farmers was characterized by a combination of theory and practice in a very visual and pragmatic way. Fundamental basis were transmitted in such a way that became 'tangible' in the daily natural processes. It could be affirmed that theory was transferred to the daily events and things that farmers already were familiar with. Furthermore, the practical part was completely adapted to farmers' contexts, challenges and resources, thus, applicable to SLN's farmers.

Another very pragmatic or individualistic reason for the willingness to learn consisted in that people who had more information, knowledge and skills achieved better results in their production because they had fewer problems and a more balanced system as well as less work.

And the last factor was that farmers were reproducing the same scheme that they had experienced in their beginning as organic farmers. It means that when they started farming organically, they were 'new' farmers and it was other 'old' farmers who transferred them their knowledge, information and wisdom. 'New' farmers learnt from 'old' farmers. Therefore, when former 'new' farmers became 'old' farmers they felt the responsibility of passing on their 'legacy' to the current 'new' farmers in order to 'feed' the agroecology and agroecological movement, and continuing with the cycle. On the other hand, 'old' farmers also felt grateful of receiving visits, showing their farm and results and receiving acknowledgements and recognition by other farmers and technicians.

Although it was stated that PGS did not impact directly the willingness to learn, **PGS provided activities and 'tools'** that besides the certification purposes also contributed highly to the learning process. It means that PGS certification system included **activities**, such as, farmer/producer group meetings, peer visits and verification visits, and nucleus meetings that provided opportunities for farmers to gather and learn from each other. Additionally, other activities related to PGS, namely In-Between-PGS activities explained in chapter 4, such as technical visits carried out by the CE's technicians and informal encountering also contributed to spread the willingness to learn among the SLN's members. Moreover, during these activities farmers were either the only actors involved or the key actors. Therefore, there was a direct contact farmer-to-farmer, talking and sharing their ideas, doubts and experiences. And during the situations in which CE's technicians participated with farmers, the CE's technicians' role was very specific. They allowed farmers to lead the activities and only took part when there was a conflicting or controversial situation, or farmers asked CE's technicians directly or it was necessary to make a clarification. Hence, the presence of the CE's technicians did not reduce either the protagonism or leadership of farmers.

On the other hand, the **'tools'** used in PGS, it means, farmers' farms and pledges, were very appropriate for the exchange of knowledge, skills and techniques, among others, and for a participatory learning process. Related to farmers' fields, PGS promoted visiting farmers' fields and encouraged the use of the field as a 'classroom' during these visits, and to have the farmers' farms around themselves during the farmer group meetings. Moreover, farmers' pledges were present in all the activities along the PGS process, as it was shown in the results, but mainly during the farmer group meetings, peer visits and basic course of organic agriculture.

Therefore, the willingness to learn was essential and although PGS *per se* did not contribute directly to encourage the willingness to learn, it provided learning activities and tools that contributed to the exchange of techniques, skills, knowledge and know-how and learning among SLN's farmers.

Participation: Collective Responsibility and Mutual Support. And Training People as PGS's Focus

As it was discussed before, participation was one the required characteristics for PGS (IFOAM, 2008). Even the word 'participation' was part of PGS's name, showing the distinction of this feature. On the other hand, the philosophy of the participation of the stakeholders involves the idea of a collective responsibility (Sacchi, Zanasi & Canavari, 2010?). And, additionally, the cooperation among the PGS's members could also lead to mutual support (Herberg, 2007). On

the other hand, PGS has a strong focus on training the stakeholders involved in the supply chain (Herberg, 2007). Therefore, all these aspects: **participation, collective responsibility and mutual support**, combined with the **PGS's focus on training stakeholders** could contribute to the exchange of knowledge, tools, practices,... and a participatory learning process.

The fieldwork results pointed out that the PGS-staging by SLN-CE included the **participation** of different stakeholders (farmers, processors and technicians) along the process, as it was discussed in the previous section. Moreover, it was found some insights that showed a strong **collective responsibility** about the certification process and the improvement of agroecological farming and **mutual support**.

Collective responsibility about the **certification process** was present since all the key stakeholders who participated in the PGS were responsible for his/her actions but also for the other actors' actions with different levels of responsibility. And there were different mechanisms for controlling the compliance of farmers/processors with the requirements. This was described in depth previously in the section "*PGS-staging: the combination of a disciplining mechanism and the freedom for individual/group choices*".

With regard to the **improvement of agroecological farming**, a **collective responsibility** was shown, for instance, through comments, attitudes and actions of the farmers and CE's technicians during the PGS activities and others. And the willingness to improve agroecological farming was reflected in different ways, such as the high attendance to courses, workshops and other learning events, the active participation of farmers during the activities previously mentioned, the interest shown, the practice of the new 'learnings' in the farmers' own fields, the exchange of farmers' results and farmers' pride of showing their farms and the progress achieved.

Mutual support, in different aspects, among farmers and also from CE's technicians was highly patent. For instance, this was reflected in the constant sharing of information, ideas, advices and work, help given by some farmers to others in farming and processing issues, personal favors and the manner of thinking in a collective way.

However, *could it also be that the collective responsibility and mutual support come partly from the agroecological-social movement?* This is another question that has not been researched yet and that is outside of the scope of this thesis.

In this case study the PGS-staging carried out by SLN-CE also had a distinguished **formative aspect**. This was emphasized by both CE's technicians and farmers. For example, during all the activities related to PGS there was room for exchanging knowledge, ideas, techniques, etc. It could be affirmed that the idea of 'what can I learn today?' was always in farmers' and technicians' minds.

Nevertheless, it could not be affirmed that collective responsibility, mutual support and the formative aspects came only from PGS *per se* because all the activities organized by CE-SLN presented a formative feature. Nevertheless, it could be affirmed that the ideology of Ecovida-CE's Project, and the specific implementation of PGS carried out by CE-SLN were the main driving factors that resulted in the strong focus on training that PGS had.

PGS as a Space for Exchange and Learning Process

Sacchi et al. (2010?) describe PGS as a **common space** to share and **exchange knowledge, experience and know-how** in order to look for solutions among all the members of the group along a continuous process of learning together.

The different activities carried out by CE-SLN, related either directly or indirectly to PGS, it means both the In-PGS and In-Between-PGS activities described in chapter 4, became a **common space** to share and exchange since they gathered farmers or farmer(s) and technician(s). This was the positive outcome due to the combination of the following aspects discussed previously in this chapter: the values shared, willingness to learn, collective responsibility, mutual support and the formative aspect involved in all the activities. Additionally, the methodology used during the activities, was highly related to the farmer-to-farmer methodology and is explained in this section, also played a key role. Among the spaces for exchange, activities related to farmer groups acquired a relevant meaning. Farmers groups were like 'agroecological families' and their meetings and other activities carried out together were the main space for exchanging and supporting. Moreover, the closest relationships and highest confidence among farmers/processors were frequently within the 'agroecological families'.

On the other hand, the **exchange ('troca')** acquired a broader meaning within the SLN, due to the fact that besides knowledge, experience and know-how, the exchange among farmers and between farmers and CE's technicians covered other fields, such as exchange of ideas, failures, doubts, worries, works at the farm, seeds, personal issues, etc. And this exchange beyond agroecological knowledge, experience and know-how made farmers-technicians be and feel closer to each other. This was because part of the other issues exchanged mentioned above (ideas, failures, doubts, worries and personal issues) were more related to feelings, hence, more connected to 'human' issues.

And this exchange, at the end, means the exchange of farmers' and CE's technicians' lives because agroecology meant, for them, the life style that they chose. Therefore, talking about agroecology meant talking about one of the most important issues in their lives. Additionally, they also exchanged other personal issues.

All this exchange occurred during the different activities carried out by CE-SLN, both In-PGS and In-Between-PGS, as well as during the Out-PGS activities, as it was described in chapter 4, what diverted to a **Participatory Learning Process**.

This participatory learning process aimed at improving agroecological practices in the SLN's region because the issues discussed were connected to the specific challenges that SLN's farmers faced. And the solutions were researched taking into account the resources available in the region and affordable for smallholders, and also attempting to use internal-farming system's resources as much as possible. Therefore, the improvement of agroecology was locally focused, due to the issues addressed and the resources used.

It is relevant to highlight that this participatory learning process that occurred within the PGS context had several common features with the **farmer-to-farmer (peasant-to-peasant or campesino-a-campesino, CaC) methodology**. In PGS there was a learning objective through the exchange between farmers and also technicians and the solutions or innovations achieved

were based on the local context. And the CaC methodology is based on the wisdom, creativity and knowledge shared among farmers and aimed at learning (Rosset *et al.*, 2011 & Holt-Giménez, 2001) which generates locally-based alternatives (Holt-Giménez, 2006 and Holt-Giménez, 2001).

The common features between PGS's formative aspect and CaC methodology were: farmers were the pillar and were organized in farmer groups, farmers were the leading actors in promoting innovations but accompanied by technicians and, the educational tools and learning activities were very similar being the farmers' pledges the most relevant one.

And referring to the **actors** involved, this **participatory learning process** was led mainly by SLN's farmers and CE's technicians. One example of this is the knowledge and experiences exchanged between farmers and technicians during field visits, courses or workshops, included in the In-Between-PGS activities. Nevertheless, other actors also contributed highly to the participatory learning process. For example, other organizations that did not work with Ecovida-CE, such as EMATER/RS or Rural Union of Workers, or even farmers' father and some agrarian programs transmitted through the television were also a source of information, knowledge and experience that was introduced and shared with the rest of SLN's members. Thus, this shows that the SLN-Ecovida was an open and permeable system that received information, techniques, and knowledge from outside contributing to fill the SLN-Ecovida 'Knowledge Pool' as it was represented in figure 13 in chapter 4.

Therefore, the PGS undertaken by SLC-CE is in line with Herberg (2007) and Sacchi, Zanasi & Canavari (2010?) who state that PGS is a mutual learning process in which solutions are looked for by the group-members through the exchange of knowledge, know-how and experiences. However, in the case study consumers almost did not participate in this learning process although according to Sacchi, Zanasi & Canavari (2010?) consumers may also accompany along the learning process. Hence, PGS besides achieving the goal of guaranteeing the quality requirements for consumers and, therefore, the organic label that distinguishes PGS products in the market, fostered the collective learning about agroecological practices at farm level.

Teaching Others and Multiplying Effect

The participatory learning process discussed above could be summarized as 'teaching others' - agroecological practices- and 'multiplying effect' of the solutions discovered, which were interconnected. This is represented in the following diagrams (figs. 20 and 21).

This phenomenon started with the experimentation of a technique or the introduction of a product by a farmer with the objective of solving a problem-challenge for him/her. After some time observing the evolution or results of the new technique/product, he/she started to comment it with other farmers and CE's technicians during courses, visits, meetings, etc. in order to understand the factors and relationships influencing it. After that, the farmer made a modification in the experiment and started again observing. Therefore, the cycle started again until the farmer achieved to adapt a specific agroecological practice to his/her farm and shared it within SLN. It consisted of a process of rights and wrongs. Moreover, this new 'knowledge' could be transmitted to other farmers who did not belong to SLN, within the Ecovida Agroecological Network or even outside.

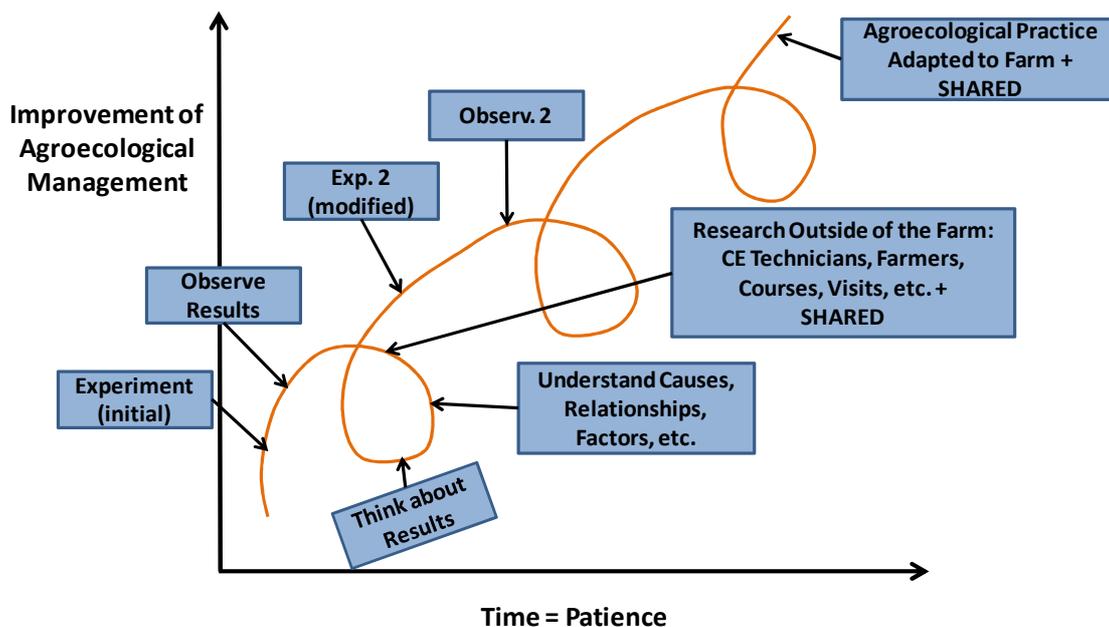


Figure 20. Phenomenon of Teaching Others within SLN and Ecovida

Source: Self-designed based on fieldwork data.

The exchange of these individual agroecological practices between farmers contributed to improve agroecology within the farmer members of SLN and Ecovida and also outside. Therefore, even though the experimentation-observation activity was an individual process, it became a participative process with a positive impact in the whole Network due to the fact of belonging to SLN and Ecovida.

Moreover, as it is shown in the following diagram (fig. 21), the transmission of the practice/experience of the first farmer to other farmers during his/her process of experimenting encouraged other farmers to start testing in their own fields. And that was when the multiplier effect occurred. The result was that the agroecological practices were improved in the SLN-Ecovida farms, and even outside. For this process, an investment of time, that means being patience, was essential.

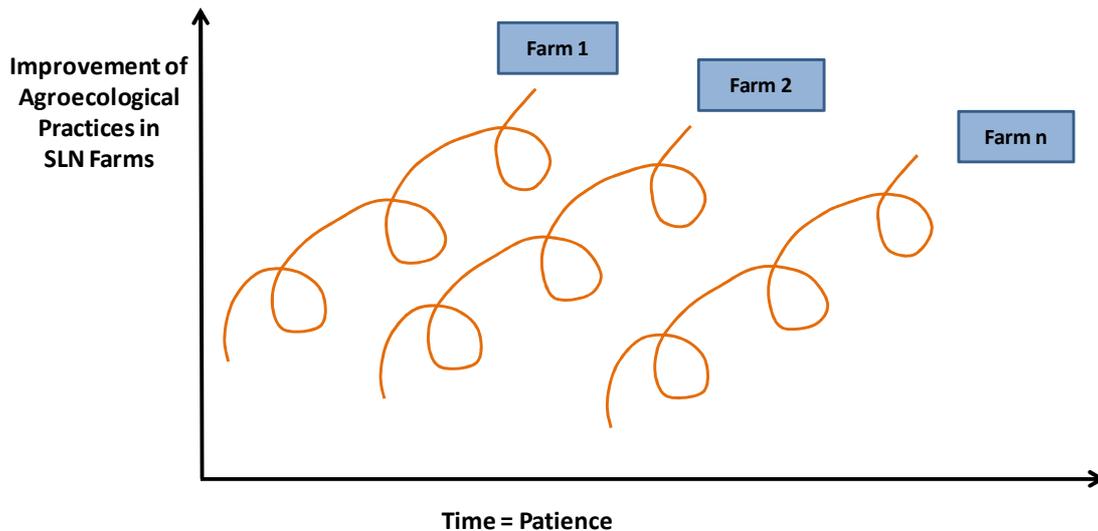


Figure 21. Phenomenon of Multiplier Effect within SLN and Ecovida

Source: Self-designed based on fieldwork data.

Banana Fruit Crop Quality

As it was explained in chapter 2, the main crop in the North Littoral area was the banana which was the most extended and the main source of income for the agroecological farmers belonging to the SLN, in general terms. Local people, farmers and technicians, described banana crop as an 'easy' crop to grow. This means that the overall opinion among farmers and technicians was that it was not difficult to grow banana organically. Therefore, it was not necessary to have deep knowledge about agroecology to cultivate it.

Moreover, it was also said that one characteristic of this crop was that farmers had the choice to decide how much they wanted to work. It means that farmers could decide how much time and effort they wanted to dedicate to grow organic banana. If they took the option of working harder and investing more time, effort and knowledge, the crop yield was higher. However, if farmers decided to spend less time, effort and knowledge they were also able to harvest banana but with lower yield and worst external appearance. This characteristic-option did not happen with other crops that demanded specific practices at specific moments and the consequence of not carrying out these practices at the right moments, was not being able to harvest anything or almost anything. Hence, banana could be considered as a crop for 'lazy' farmers. The flexibility of this 'lazy-farmers' crop could be consider as an advantage because it allowed farmers to balance their efforts and crop yields depending on the commercialization opportunities. However, it could also have a negative effect on the learning process because if banana crop did not demand a deep level of knowledge, skills or know-how, this could restrain the learning process among farmers because 'they did not need to learn more'. Only when the demand of organic banana from consumers was higher than the current production without improving the agroecological techniques, knowledge, practices, techniques and skills exchange could be driven in order to increase the banana yield. Therefore, this leads us to think that also commercialization had a role to play in the participatory learning process.

On the other hand, the previous reflection is also related to the on-going discussion within the SLN about the **quality of the banana fruit**, which was also connected with the participatory learning process within SLN. Among the SLN's farmers there were two opposite views about the banana fruit quality and its meaning. On the one hand, some farmers (*'proponents'*) considered that the banana quality should be improved in order to achieve higher size and more homogenous color. And even though these demands came from the organic consumers who bought in supermarkets, 'proponents' called 'lazy-farmers' to the ones who did not take care of the external quality of the banana fruit. However, the consumers who bought in the organic fairs did not care about the external characteristics of the organic food. On the other hand, others farmers (*'opponents'*) thought that the organic banana fruit just for being organic had good enough quality and the appearance of the banana fruit was not important. Hence, it was not necessary to improve the appearance parameters. Actually, some 'opponents' defended that the demands about the appearance of the banana were derived from the conventional and mainstream markets that transferred their standards to the organic products.

Therefore, the first group (*'proponents'*), the 'pro-improving banana appearance farmers', were encouraging to improve agroecological practices mainly through the use of organic inputs for achieving higher size and more homogeneous color in the banana fruit. Thus, they were stimulating a higher use of organic inputs, more effort, and more exchange of knowledge, skills and techniques among farmers focused on achieving these specific organic goals.

And, according to the second group (*'opponents'*), the 'opponents-improving banana appearance farmers': there was not necessary to use organic inputs for improving the banana appearance parameters. Therefore, it was not any stimulus either to test these organic inputs or to exchange knowledge, ideas and experiences aimed at improving the external characteristics of the banana fruit.

It is important to remark that there were also intermediate perspectives about the external quality of the banana. The two perspective discussed above represented the most extremes points of view.

Hence, other two factors, external to PGS and CE-Ecovidia, influenced the learning exchange: the amount of organic sales and the commercialization setting (supermarkets vs. organic fairs).

This debate about the external quality of banana fruit and the pre-conceived standards of quality by consumers were also related to the differences between agroecological (understood as the integration of agro-systems within natural systems and their interrelationships) and organic (understood as the substitution of chemical inputs for organic inputs).

Increase of Organic Product Sales in Brazil: Positive or Risky?

Another important remark is related to the rapid increase of organic products sales in Brazil, mainly in the South. A consequence of this was the interest shown by some conventional farmers for organic agriculture because of the commercialization opportunities and, therefore, it was an increase of organic farmer families in the SLN.

On the one hand, this had a positive effect on agroecology and PGS because as more farmers were involved in agroecology and PGS as higher strength was given to the agroecological movement, a higher recognition to PGS worldwide and a richer participatory learning process. Nevertheless, if these 'new' organic farmers did not either contribute to the social cohesion within the farmer groups or participate in the 'agroecological exchange'¹³, it could have negative consequences. One possibility that could occur is that the 'new' organic farmers could 'contaminate' with their attitude to other farmers, farmer groups and the SLN, in general. Hence, this could have a negative effect on the agroecological movement, PGS and participatory learning process.

However, it could also happen that these 'new' farmers who, perhaps, did not share their farming practices at the beginning could experiment later a 'mental' transition to the agroecological vision including social values and participative learning. In this case, they would contribute to increase the SLN-Ecovida 'knowledge pool'. This second situation could be achieved by including initiatives aimed at strengthening the social cohesion and 'exchange culture' within each farmer group and SLN.

Farmers with a Long Trajectory in the SLN: the Decrease of 'Agroecological Exchange'

As it was shown in chapter 4, there was a decreasing interest about 'agroecological exchange'¹⁴ among the SLN's farmers who had a long trajectory within the SLN. These farmers considered that they did not need it so much because they already achieved the level of knowledge that they needed.

This could mean that they really did not need to know more, or that they were 'tired' of participating in the participatory learning process. Therefore, this raises the question: *Is it 'true' that 'old' farmers achieved the maximum limit of knowledge that they needed? Or did 'old' farmers lose partly their spirit of exchanging and learning? Or could it be that the effort required for meeting, gathering, visiting to each other, etc. did not compensate them because 'old' farmers were in another phase? In this case, would it be better to focus on the 'new' farmers? Or would it be more appropriate to encourage 'old' farmers for transmitting their knowledge to the 'new' ones?*

Perhaps, what occurred in SNL was something similar to what Holt-Giménez (2006) explained in his book about *campesino-a-campesino*. He states that farmers who are for a long time within farmer groups, namely farmer promoter teams, at a specific moment they leave the group, stop travelling and attending workshops, and spend more time in their farms giving 'space' for other farmers to support the learning process.

Even though it was not exactly the same situation because the SLN's 'old' farmers still belonged to their farmer groups and they did not have any intention of stopping this, there were some similarities. For instance, 'old' farmers reduced very much their attendance to the learning activities, such as workshops, courses or visits. And also in both cases, their need to

¹³ Agroecological exchange' includes the exchange of information, knowledge, techniques, skills, tools, information, practices and know-how.

¹⁴ Agroecological exchange' includes the exchange of information, knowledge, techniques, skills, tools, information, practices and know-how.

learn was lower than at the beginning because their level of knowledge was higher and they preferred a more relaxed life in their farms. Furthermore, in both cases, they 'let' other 'new' farmers use their 'place'. It was a cycle, with a high participation at the beginning and progressively lower participation. And since the 'old' farmers' participation started to decrease, 'new' farmers started participation in the learning activities.

Another difference between PGS in SLN and campesino-a-campesino is that farmer groups in SLN were not only spaces for learning but also the base for commercialization and certification. However, farmer groups in CaC only have a learning goal.

Therefore, as in the agricultural sector, 'new' generations of organic farmers are needed for keeping alive the 'agroecological exchange'⁴.

5.2 THEORETICAL DISCUSSION

5.2.1 Paradox Between Prescription and Learning at Farm Level

This thesis addresses the "*paradox between prescription and learning at farm level*", defined by Vellema & Jansen (2007), due to the implementation of quality assurance systems. This means whether the worldwide spread quality assurance systems push towards the implementation of standardized technologies and practices along the supply chain rather than promoting the search of tailored solutions to specific challenges and contexts. This thesis contributes to answer this paradox through the case study of the PGS system carried out by Solidarity Littoral Nucleus (SLN), one of the Regional Nucleus of the Ecovida Agroecological Network and where the Centro Ecológico NGO (CE) worked, in Rio Grande do Sul, Brazil.

According to Vellema & Jansen (2007), even though good agricultural standards coming from the certification systems prescribe good practices towards an improved performance of agriculture, these certification standards may also contradict its goal of encouraging a learning process. As Vellema (2004) remarked, "*standards tend to promote uniformity and to dictate standardized practices*".

Therefore, what Vellema & Jansen (2007) recommend is to avoid generic solutions and a totally top-down approach in the quality system giving space for farmers to look for solutions adapted to the socio-economic and agroecological contexts. This contrasts with the current requirements established by the mainstream quality guarantee systems that imposed universal practices.

Consequently, a hybrid structure in voluntary quality assurance system combining prescription and learning may facilitate innovation and technological improvement at the farm level being open to solutions adapted to the local context. Moreover, they argue that the development of learning and improvement can be only achieved by an iterative and flexible process whereas the different stakeholders of the supply chain are connected among them and have enough

space for improvement and are also connected to actors outside of the supply chain (Vellema & Jansen, 2007 and Vellema, 2007).

This thesis contributes to this theoretical approach presenting an empirical study about PGS, a certification system for organic food, carried out by SLN-CE within the Ecovida Agroecological Network. This study shows how PGS contributes to promote 'agroecological exchange'¹⁵ and participatory learning process. However, this contribution was mainly due to the particular PGS-staging by SLN which was shaped under the mission, vision and principles of Ecovida-CE. Moreover, the integration of PGS with the rest of the agroecological activities undertaken by CE within the SLN was an essential factor.

One of the significant characteristics of PGS was its horizontal organizational structure that connected all the main stakeholders within the supply chain. This allowed the flow of information, knowledge, techniques, skills and know-how among all the stakeholders. Furthermore, the autonomy of the farmer groups and SLN (at farmer group level and regional nucleus level) provided them with certain flexibility for adapting the generic requirements to their specific or more particular circumstances and/or preferences. Therefore, this corresponds with Vellema & Jansen (2006?) and Vellema (2007) statements about the necessity of a hybrid structure and a flexible process where all the stakeholders and also outside-actors of the supply chain were connected.

5.2.2 Organizational Scheme, Relationships and Flexibility of the PGS Process: Could it Determine the Appropriate Size of Particular PGS Initiatives?

IFOAM defines PGS as it follows: "*Participatory Guarantee Systems are locally focused quality assurance systems....*" (IFOAM, n.d.). But *what is exactly "locally" and what is the implication of "locally"?*

Probably, "locally" could be interpreted that the assurance is carried out at local level although the PGS network is larger. Therefore, PGS initiatives could be larger than the local dimension. However, it also could be understood that each PGS initiative should have a local size. Hence, PGS initiatives with a larger size should not be included in this definition.

Focusing on the first interpretation, which is much more probable due to the current PGS initiatives going on, among other reasons, the question that arises, is: *How to determine the appropriate size of a particular PGS Network?* This dilemma appears because of different aspects interfere: organizational scheme, relationships farmer-to-farmer and farmer-to-technician, and the dilemma about how to establish general rules for all the members giving space, at the same time, for the flexibility of each local context.

With regard to the organizational aspect of the PGS network for the certification procedures, there could be a minimum and maximum proper size of the PGS network considering the optimization of resources for the procedures. If the size is too small, it could happen that some

¹⁵ 'Agroecological exchange' includes the exchange of information, knowledge, techniques, skills, tools, information, practices and know-how.

resources are not used efficiently. On the other hand, large sizes also could demand a type of organizational structure that is impossible to provide.

Considering the particular type of relationships that are built among farmers and between farmers and technicians, the size of the PGS network could also impact them. A really large PGS network could lead to the anonymity which would imply the loss of confidence and personal relationships. Moreover, the decision-making process could also be affected as well as the group feeling. Nevertheless, if the number of farmers/processors is too low and they are much spread it would also complicate the organization of meetings, visits, courses and informal encountering, among others.

However, perhaps the most challenging dilemma lies in establishing organic requirements that have to be met by all the members of the PGS and at the same time to maintain the flexibility at local level. According to Sacchi, Zanasi & Canavari, (2010?) and IFOAM (2008), PGS is a flexible method that allows a continuous adaptation to the local context and circumstances maintaining the compliance with the organic standards established. But the question that arises is: *How to establish general rules for a PGS initiative giving space, at the same time, for the flexibility of each local context? And could a large PGS network affect it negatively?* This dilemma could appear because, on the one hand, if the common rules/standards are very generic in order to give space for the local adaptation the sense of group could be lost since most of the similarities disappeared. Nevertheless, if rules/standards are very 'narrow', possibilities for local adaptations could be evaporated. Therefore, flexibility could be vanished.

In fact, all these dilemmas could be also discussed for the appropriate size of regional nuclei and also of farmer groups due to the fact that the same factors could affect at these other two levels and not only to the network level.

Hence, the following question is: *What is better, smaller PGS initiatives which are connected among themselves through the agroecological movement or large PGS initiatives that strengthen the certification system?* Definitely, the first answer is that it depends... Moreover, choosing a PGS network with an intermediate size could also be the preliminary option. However, these issues should be analyzed in depth, especially due to the current growing PGS initiatives worldwide.

5.2.3 Learning Organizations

Analyzing SLN's activities from a whole and integrated perspective where PGS was integrated with the rest of the activities, we could say that SLN accompanied by the significant role of CE could be compared to a *Learning Organization* according to the definition and core elements stated by Watkins and Marsick (1993): the *Learning Organization* is "...one that learns continuously and can transform itself". Some of its elements are (Watkins & Marsick, 1993):

- Decentralizing the decision-making processes and empowering employee.
- Incorporating systems of sharing the learnt lessons from an applicable view.
- Using past daily experience as an opportunity for learning.
- Enhancing feedback and disclosure.

The continuously learning aspect of PGS within SLN was already discussed and proved previously. Referring to the learning organizations' feature about transforming themselves, it could be affirmed that since PGS has been carried out by SLN until now, there had been several adaptations related to different issues, such as, some documents' template and the verification visits.

Referring to the core elements of a learning organization defined by Watkins and Marsick (1993), it could be stated that these core elements were also elements embodied in SLN contextualizing them in the SLN's members and case study's context. For instance:

- Farmer/processor groups were autonomous for taking their own decisions like the rest of the stakeholders included in the SLN, such as, consumer cooperatives, the farmer cooperative, rural women groups, environmental education network and CE. On the other hand, CE encouraged the empowerment of each group and individual member.
- The activities related to PGS, directly or indirectly, as well as the methodology applied were very useful for exchange of techniques, knowledge, skills and know-how; and collectively learning. Some of these activities were field visits, courses, workshops, peer and verification visits, and farmer group and nucleus meetings, among others.
- The use of traditional knowledge and own experimentation was encouraged very enthusiastically by CE's technicians and some others SLN's farmers. Moreover, some lessons from past experiences were exchanged among farmers/technicians and applied.
- Exchanging (*'troca'*) in its broadest sense was also reinforced energetically. The meaning of this exchange included knowledge, information, feedback, ideas, doubts, fears, personal issues, feelings, etc. but also seeds, work, etc. On the other hand, transparency and openness were two requirements for every single SLN's member.

Senge (1990a) defines several main characteristics of the Learning Organizations. The *'Shared Vision'*, which means *"sharing an image of the future you want to realize together"* and *'Team Learning'* as the *"principle as the process of learning collectively"*. Both of them were present in the SLN and in the PGS process carried by them. The SLN's shared vision was farming under the agroecological principles including social cohesion and collective support, exchange and collective learning process.

On the other hand, Marquardt (1996) synthesizes the existing theories and refers to the Learning Organization as *"... an organization which learns powerfully and collectively and is continually transforming itself to better collect, manage and use knowledge for corporate success..."*.

According to Bierema (1999) a new approach based on accountability without control and with trust, redistribution of power, communication, teaching and learning is needed. Furthermore, critical thinking and learning have to be encouraged in a learning organization by an appropriate leadership. These characteristics were also present in the PGS staging within SLN. For instance, trust was the base for the PGS. The organizational structure for PGS and the autonomy of the farmer groups showed the redistribution of power. Critical thinking was continuously encouraged by CE's technicians and some SLN's farmers. Moreover, the

importance of learning and exchanging knowledge and learning from each other was constantly promoted.

5.2.4 Campesino-a-Campesino Methodology, Learning Loop Theory and Knowledge Circulation

The methodology applied by CE-Ecovida and, therefore embodied by the SLN's members and included in PGS, was campesino-a-campesino (CaC), also namely farmer-to-farmer or peasant-to-peasant.

In line with CaC, CE enhanced that the agroecological solutions came out from farmers based on the combination of traditional knowledge and knowledge/information/skills/technology, etc. learnt from others (farmers, technicians, etc.). CE also promoted that farmers adapted all this "information" to their own fields, farming styles and resources aimed at achieving innovations and spreading them among other farmers and technicians. As Holt-Giménez (2006) states CaC is "*the most successful methodology or promoting farmer innovation and horizontal sharing and learning*". CaC is a social process in which farmers are the most active actor involved due to the fact that they are the promoters of innovation and diffusion of knowledge and solutions. As Rosset *et al.* (2011) described using Freire words, "CaC is a *Freirian* horizontal communication methodology". Hence, the purpose remains the same as the one described by Parayil (1991) who states that "*a systematic change in the knowledge (by the incorporation and adaptation of new information-knowledge) related to agriculture could be characterized as a problem-solving activity*". Hence, technological change is knowledge change.

As it was shown Ecovida-CE and SLN belonged to the **agroecological movement** which was a **social movement** based on solidarity, social cohesion, doing together and improving and sharing agroecological techniques\innovations among farmers-technicians (Valdemar Arl, 2007). Therefore, this was in line with CaC because according to Holt-Giménez (2001) CaC is a social movement based on innovation and solidarity that 'walks' through experimentation in small and local scale and sharing knowledge, creativity, experience and wisdom from one farmer to another.

Another similarity found between SLN and CaC was related to the **farmer groups** in SLN and the farmer promoter teams in CaC. It was noticeable that CE and CaC included the same type of **activities**, such as, meetings, workshops, field visits and encountering, among others.

Moreover, the '**learning tools**' used by CE-SLN were the same as the ones adopted by CaC, such as: **farms**, as the basic tool for experimenting, showing and learning, and the most important one, **farmers' pledges** about agroecological solutions applied by themselves. Farmers' pledges had a high value because these practices were successful in a farm and because farmers believed more in farmers' experiences than in technicians' explanations that came from a paper or were carried out in experimentation fields.

5.2.5 Learning Loop Theory and Learning Approaches

Some authors, such as, Argyris and Schön among others researched about the types or levels of learning which are represented in the following table (table. 12) (Coudel, 2011). Moreover,

it was researched the learning approaches that correspond to each of the ‘learning loops’. Coudel (2011) based his analysis on five learning approaches –*extension, community learning, organizational capacity building, empowerment and social learning*- on the **action-learning** and the **learning loop theories**.

Table 12. Levels of Learning

Type of learning	<i>‘Zero’-loop</i>	<i>Single-loop</i>	<i>Double-loop</i>	<i>Triple-loop</i>
Definition	Direct transfer of information without involving true appropriation by the actors.	Occurs within a group when new knowledge is acquired and transformed by a collective interaction process with the aim of improving efficiency.	New knowledge is used to gain a new perception of issues and problems, leading to a new way of solving them. Group values are changed and new routines emerge.	Learning dynamics occurs when a new collective structure emerges within a changing environment. Actors have to learn how to learn together.
Driving factors	Need for update information.	Loss of efficiency.	Difficulties in solving problems.	Need to adapt to permanent change.
Relationships between actors and their organization	Person to person.	Individuals or groups.	Stable organization.	Unstable organization (no limits to define the actors concerned).
Change in practice	Integration of new information in current routines.	Change in routines (towards improved efficiency).	Innovation to find solutions.	Creativity to find new references.
Change in values	Does not affect values.	Values do not change.	Change in internal values (of the organization).	Also affects external values (change in paradigm).

Source: Coudel, 2011.

Analyzing this case study, it could be affirmed that the participatory learning process that occurred within SLN and that was lead by CE had strong similarities to the **‘single-loop’** and the **community learning** approach. However, according to Coudel (2011) the community learning approach corresponded to the learning ‘double-loop’, but many authors demonstrate that although each learning approach is focused on a specific learning loop, diverse interrelations occurred between the different types of learning (Coudel, 2011). The different learning approaches are represented in the following figure (fig. 22) as well as their interrelations with the levels of learning.

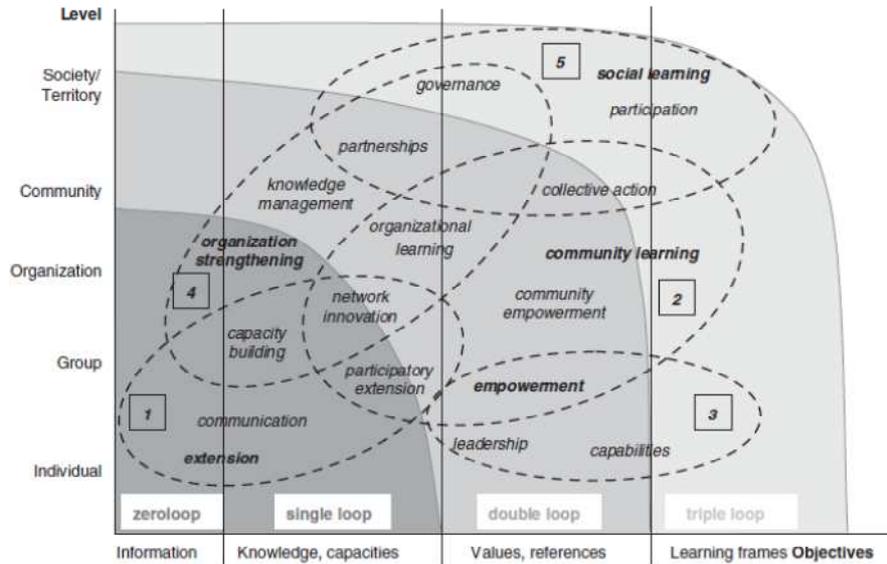


Figure 22. Situating each approach according to objective, level and type of learning
 Source: Coudel, 2011.

Along the participatory learning process within the SNL new ‘knowledge’¹⁶ was acquired, sometimes from inside and others from outside; and this ‘knowledge’ was also transformed and adapted to the local context through a collective process. Additionally, the SLN learning processes included both individual (experimentation-observation) and group learning activities (meetings, workshops, visits, etc.). And SLN values were maintained along their trajectory, as well as CE and Ecovida’s values. Therefore, it is in line with the ‘**single-loop**’ described by Coudell (2011).

On the other hand, the **community learning approach** is based on the concept of community as a group of people sharing common interests, goals or values. Moreover, this approach is highly suitable for complex systems, such as, organic agriculture. Additionally, this approach involves the idea of collective learning and means that the process of learning together through exchanges in order to find innovative and adapted solutions to the context. Besides knowledge exchange, a special relation is built between the community learning’s members. This exchange of knowledge may be aimed at a problem-solving process and based on farmers’ experience and experiments. The community learning approach gives more importance to how knowledge is exchanged than to the knowledge itself. For this reason, trust and values are considered key elements for facilitating exchange and appropriation of knowledge (Coudel, 2011). Hence, the connection between this approach and the participatory learning process that occurred in SLN is very close. However, it is important to remark that the meaning of knowledge exchanged among SLN’s members included not only the codified knowledge but also skills, tools, techniques and know-how.

¹⁶ It includes information, codified-knowledge, techniques, skills, tools, information, practices and know-how.

5.2.6 Farmer Field Schools and Knowledge Circulation

There is a close connection between the work undertaken by CE and the SLN's farmer-members and the Farmer Field Schools (FFS).

David & Asamoah (2011) describe FFS as a group-based learning approach widely used for training farmers on different topics. FFS's principles are: farmer-centred, group-based discovery learning led by facilitators, learning is more important rather than the technology or knowledge transmitted, and self-help and system approach. FFS also includes exchanging of previous experience through group discussions (Duveskog *et al.*, 2011). By working in small groups and observing directly in the field, farmers are able to come up with their own conclusions improving their technical knowledge and decision-making capacity. Moreover, the idea is that farmers are able to apply the knowledge to the changing situations that they will face in the future. On the other hand, group interaction is stimulated by group dynamics exercises conducted by the facilitator which leads towards achieving active participation, group dialogue and critical reflection (David & Asamoah, 2011; Duveskog *et al.*, 2011).

In spite of the similarities between SLN and FFS, such as, farmers as the 'protagonist' of the process, group work, and exchanging through active participation in order to solve problems, etc. there is an important difference. Whereas in FFS the training is strongly structured around facilitators (Jansen & Vellema, 2011), CE's technicians promoted that farmers had a high level of autonomy in the learning process encouraging them to learn by themselves, mainly through trial and error and exchanging with peers.

Moreover, FFS's goal is to stimulate social and human capital. David & Asamoah (2011) defined **social capital** as "*the networks, associations, institutions, rules and procedures as well as the attitudes, norms of behavior, shared values and reciprocity and trust that enable people to engage in mutually beneficial collective action*". And **human capital** is defined as "*health, physical capability, skills and knowledge that enable the successful pursuit of livelihood strategies*." Therefore, FFS may contribute to farmer-to-farmer spread of knowledge, capabilities and skills as well as improving the relationships among group members.

Besides the similarities between CE-SLN and FFS, such as, the organization in small groups, observation, knowledge, exchange, and discussions, active participation of farmers and critical reflection; the stimulation of the social and human capital in PGS is remarkable. **Social capital** defined for FFS that involved organization in networks, values, trust and collective action, was a distinctive characteristic of CE-SLN. Moreover, **human capital** stimulated by FFS was also enhanced passionately by CE's technicians and some SLN's farmers.

As Arora (2012) states a "*basic condition for achieving collective learning is knowledge circulation*". He researched about the necessity of **knowledge circulation** between farmers and technology's designers in order to develop technology more adapted to farmers' needs. He argues that tacit knowledge, the non-codified knowledge's component, requires face-to-face interaction. Furthermore, knowledge circulation leads to learning by interacting and therefore to innovation (Arora, 2012).

In local innovation systems, these knowledge interactions and, therefore, the knowledge circuit may be composed of knowledge exchanges between farmers, interactions between farmers and other agricultural actors or between other outsiders of the farm (Arora, 2012).

A relevant remark about the learning processes, methodologies and theories that were already mentioned in different occasions in this section refers to the ‘what’ is transferred in the learning process. Knowledge, in the sense of codified knowledge is neither the only nor the most important aspect to learn. Other aspects, such as, skills, tools and techniques are essential for learning at agroecological level. The ‘knowing-how’, which refers to skills which are difficult to transmit through words, is also essential for the practice. This is an element introduced in the ‘technology-in-use’ -the way technology is performed by a specific person shaped by the material and social circumstances- and, in fact, the way to learn the ‘knowing-how’ is by doing (Jansen & Vellema, 2011). This ‘knowing-how’ could be connected to the tactic knowledge that Arora (2012) describes as the non-codified component of the knowledge in his approach about knowledge circulation. On the other hand, David & Asamoah (2011) also refer to physical capability and skills beside knowledge when describing one of the FFS’s goals about stimulating the human capital aim at learning agriculture at farm level.

5.3 FINAL REMARKS

Among the multiple issues discussed in this chapter, the main remarks are summarized in this section. The following table (table. 13) shows these main issues and the research section of this study that corresponds to them:

Table 13. Main Remarks about PGS-staging within SLN

Thesis’ Research Section	Main Remarks
Context	- Social values and "Exchange" (in its broad sense) - Hybrid organizational structure
PGS-Certification System	- Rigidity-Flexibility, Autonomy of farmer groups and Role of CE’s technicians
Learning Process	- Campesino-a-campesino (CaC) methodology - Willingness to learn - External factors to PGS and SLN: commercialization

Source: Self-designed.

Social values, transmitted and embodied by SLN’s members, and **exchange (*troca*)** among SLN’s members beyond agroecological issues, were the principal aspects that shaped the **non-material context** of this case study.

The PGS-staging as a certification system was strongly characterized by its **hybrid organizational structure** in the sense that it combined top-down and bottom-up processes within a **horizontal structure in a network**. Furthermore, the PGS process **integrated** the **rigidity** about the compliance to the organic rules with the **flexibility** for performing the controlling system and choosing among different approaches in production and commercialization. This hybrid structure and the duality of the process were possible due to the **autonomy of farmer groups**. Additionally, it was also shaped by the **double relationship**

between CE's technicians and farmers, in which CE's technicians were controlling the process but also promoting farmers' autonomy to take their own decisions.

CaC methodology and the **willingness to learn** were two key elements for achieving the **participatory learning process** within the SLN and PGS certification system.

Moreover, the influence of **external factors to PGS** and **SLN**, such as, commercialization strategies and market niche, was also relevant in the **learning process**.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

This study has explored the integration of rules, procedures and requirements of the Participatory Guarantee System (PGS), an organic certification system, with a solving-process of the problems that smallholder farmers faced about organic production. This search of solutions, within the Solidarity Littoral Nucleus (SLN), a Brazilian PGS group accompanied by the Centro Ecológico NGO (CE), was mainly based on the farmers' own experimentation and the 'agroecological exchange'. This 'agroecological exchange' involved the exchange of information, knowledge, techniques, skills and know-how about agroecology at farm level among SLN's farmers and between SLN's farmers and CE's technicians.

The different type of activities related to PGS, the methodology applied and particular "activities-staging" as well as the actors involved and their respective roles within the CE-SLN had a relevant influence on the participatory learning process along the PGS. Additionally, the membership of SLN and CE to the Ecovida Agroecological Network, in the South of Brazil, and the agroecological-social movement together with the holistic identity of the Ecovida-CE-SLN Project were also determinant factors. They involved social values, commitment and willingness to improve organic agriculture and exchange beyond agroecology.

Moreover, all these aspects were influenced by a context of an increasing organic market and therefore, organic farmers; and the different opinions from farmers about how the banana fruit quality –external appearance-, should be taking into account that banana is the most important crop in the area.

Under the 'knowledge gap' about the dilemma between standardizing a certification process and giving flexibility in order to encourage innovation and tailored solutions to local context, this study sought to answer the following research question:

How does Centro Ecológico-Ecovida, through PGS certification and other activities, influence changes in the agroecological farming practices of Solidarity Littoral Nucleus' farmers?

6.1 EMPIRICAL FINDINGS

PGS within the CE-SLN group and the participatory learning process that occurred along it could be compared to the construction of a house which represented the entire CE-SLN network. The foundations of the house were the CE-SLN's membership to the agroecological-social movement. And the components of these foundations were social values, mutual support, collective responsibility and willingness to improve agroecology and share a life style. These foundations were also the spirit of the common Project of CE-SLN. And the essential tools to build up the house, which were supported on these foundations, were:

- Horizontal and hybrid organizational structure.
- Rigidity-flexibility, autonomy of farmer groups and dual role of CE's technicians.

- The formative and participative character of PGS and its gathering activities-moments.
- Integration of PGS with the rest of the activities carried out by CE-SLN.
- Campesino-a-campesino (farmer-to-farmer) methodology.

These tools were used by the builders, who were the farmers and processors of the SLN group. In close collaboration with the CE's technicians, who represented the working guides, were building up the house together. These working guides, the CE's technicians, were essential to guarantee that the construction was stable, solid, durable and well-constructed.

Moreover, during the construction the builders, who were grouped (farmer groups), took decisions all together, in groups and individually; debated arising issues and shared ideas, knowledge and know-how but also worries, difficulties and doubts. Therefore, the CE-SLN's common Project became a space for participation and exchange among builders (farmers/processors) and between builders and guides (CE's technicians). However, during the construction, decision-making capacity was also developed and autonomy also was given to builders. Moreover, guides developed skills for being strict about the regulation aspects of the construction (organic requirements) but flexible about different strategies carried out by builders for solving problems (specific performance in the certification procedures and production/commercialization issues). Consequently, builders or builder groups, sometimes, adopted different solutions although they faced the same type of problems. The result was a variety of styles within the house under a same style (organic agriculture/agroecology).

Therefore, PGS consists of a hybrid structure organized in a network in which the key stakeholders of the supply chain and technicians participate and are connected among themselves. This hybrid structure is a combination of bottom-up, top-down and horizontal processes aimed at the organic certification along the different organization levels. It means the existence of a flow of the verification information (bottom-up), a verification and credibility flow (top-down) and horizontal relationships between all the members. Moreover, PGS combines the flexibility of adapting different certification processes, within farmer groups and regional nuclei, with the rigidity of compliance with the common organic requirements. Therefore, PGS involves an individual and a collective commitment to agroecology, to the organic requirements and to the group.

Besides, one of the distinguishing aspects of SLN-CE is the 'agroecological exchange' among their members: farmers and technicians, in different directions. This 'agroecological exchange' includes codified knowledge, skills, techniques, discussions, doubts, rights and wrongs; but also feelings, fears and personal issues, among others. And it is practiced during PGS activities but also during other activities organized mainly by CE and Ecovida. All this participative learning process is aimed at solving the daily challenges that farmers face about organic farming in which the farmers' willingness to learn is essential.

On the other hand, the belonging of SLN-CE to the Ecovida Agroecological Network and organic movement could influence the type of relationships among members beyond organic agriculture, group-feeling, willingness to learn and commitment to agroecology, which impact on both, the 'PGS-staging' as a certification system and the SLN-CE as a participative learning community.

Another interesting remark is the connection of the market to both aspects: certification and learning agroecology. On the one hand, certification is a requirement from the market to guarantee the use of organic farming practices to consumers. And, on the other hand, certain consumers demand certain quality characteristics, such as, a specific external appearance of banana fruit, which impacts on the learning goals of farmers.

Hence, it could be affirmed that CE, through their work, Ecovida, the organic movement and PGS, contributed to improve SLN's farmers' agroecological practices. This improvement was the result of participative work, with particular characteristics –values, relationships, commitment, structure and methodology- of SLN's farmers/processors but also CE's technicians and Ecovida Agroecological Network. However, other factors, such as, consumers' demands also influenced the participative learning process.

6.2 THEORETICAL IMPLICATIONS

PGS is characterized by its **horizontality**, related to its organizational structure and also the type of relationships among stakeholders, and the **participation** of the main stakeholders of the supply chain (IFOAM, 2008). Both elements avoid hierarchical structures and contribute to guarantee that **decision-making processes** are shared between PGS stakeholders and along the PGS certification process. Consequently, this encourages **responsibility** in the territory, **individual and collective**: individual responsibility in the sense that each individual stakeholder is the first responsible for his/her actions; and collective responsibility because each PGS's member has a certain level of responsibility about his/her 'peers' behavior' regarding farming within the territory. Hence, stakeholders, and especially farmers, instead of acting as mere actors who have to comply with certain rules as in Third-Party Certification (TPC), are **part of the certification system**, they participate in the certification system and they are also responsible. They are 'controllers' and also 'controlled'. Whilst, as several authors state, such as, Scialabba, 2005; IFOAM, 2006/2008; Torremocha, 2010; van Elzakker & Eyhorn, 2010 and Herberg, 2007, in TPC the role of 'controllers' is carried out by external inspectors, namely certification body. Hence, farmers are controlled by external controllers and farmers do not have responsibility for other farmers or stakeholders.

Additionally, PGS implies '**gathering activities**' along the certification process as part of the routine of stakeholders; it means activities that gather farmers, processors and technicians which is an essential component for exchange. Besides these gathering activities, exchange is possible due to the PGS's formative goal besides the organic certificate. And it also has a **formative goal** besides the organic certification. Therefore, PGS, unlike TPC, involves a collective process that gives 'space' for different issues apart from certification, whereas TPC only has a goal (Khosla, 2006): achieving the certification individually without possibilities for contacting other peer-farmers, stakeholders or technicians. Hence, in TPC complying with the TPC requirements becomes achieving the "*ceiling for maintaining organic quality*" argued by DeLind (2000) instead of being the 'floor' that should be in the organic certification systems.

Therefore, it could be said that PGS provides the 'structure' for exchange of practices and experiences in form of knowledge, techniques, advices, skills, know-how, etc. among farmers and technicians. The use of this 'structure' for exchanging agroecological practices, mainly based on farmers' pledges, as one of the tools used by the campesino-a-campesino (CaC) methodology, as Holt-Giménez (2006) describes about CaC, is a key aspect of the participative learning process. However, in order that PGS could achieve its learning goal the essential condition of the **willingness to learn** has to be present, as an additional factor to the reviewed literature. Therefore, PGS-members have to share a **common vision about improving agroecological practices** in a collective way and transfer their ideas and experiences among themselves as IFOAM (2008) states. This continuous learning process in group that has a 'Shared Vision' and constitutes a 'Team Learning' including among their '*principles the process of learning collectively*' represents a '**Learning Organization**' as described by Senge (1990a). It could be said, as a complementary aspect to the existing literature about PGS and learning agroecology, that another condition is to understand and **integrate PGS within the production, processing, commercialization and technical assistance as a unique process.**

This common vision about enhancing agroecological practices also has to be aim at solving the daily problems that farmers face about production issues, searching for solutions adapted to their context and availability and affordable resources. Therefore, PGS performed in a certain way could be in line with the statement developed by Vellema & Jansen, (2007) and Vellema (2007) about the quality guarantee systems and innovation and technological improvement at the farm level. These authors affirm that only hybrid structures in voluntary quality assurance system with an iterative and flexible process in which the stakeholders of the supply chain are connected facilitate innovation and tailored solutions to the local context.

Hence, a PGS group could be described as a **community learning** as Coudel (2011) described as one of the five approaches of the "*Learning Loop Theory*". This means a group of people who share common goals, interests and values with a special relationship and are involved in a process of searching and exchanging innovative solutions adapted to their context. And these common values, commitment to agroecology, special relationships and group feeling could be also influenced by the organic movement.

In short, PGS is a certification process in which the organic certificate is achieved but in addition to this, PGS also has a formative goal, thus, it could be much more, a participative learning process. This formative goal is achieved, partly, due to the gathering activities and common values and goals involved. In order that these gathering activities contribute to the goal of formation and solving daily farmers' problems, the willingness to learn has to be 'grown'. And for growing this willingness to learn and certain values and relationships derived from them, the belonging to organic movement could contribute positively. Moreover, PGS has to be understood and integrated within the rest of the activities included in the supply chain, this is, production, processing, commercialization and technical assistance in which external actors of the supply chain, assistance technicians could play an important role.

6.3 RECOMMENDATIONS FOR FURTHER RESEARCH

The PGS certification system will likely continue increasing its presence and legal recognition worldwide both in absolute, and in comparative terms with respect to other organic certification systems, due to its on-going expansion both in number of initiatives and in different locations.

Moreover, it is expected that alternative training approaches in agriculture, such as campesino-a-campesino, will scale out (implementation in more places and by many farmers) and scale up (supported by institutions\policies) worldwide, especially among smallholders.

On the other hand, due to the theoretical and empirical 'knowledge gap' about PGS and learning processes at farm level, further researches should be carried out in order to better understand both processes and their connections as well as the driving aspects for achieving learning along the PGS process. Moreover, these insights could also contribute to other quality certification systems in the supply chains.

Specifically, it would be interesting to analyze whether (and how) the belonging or commitment to the agroecological-social movement by farmers and technicians and, therefore, its social values and philosophy, influences the learning process along the PGS certification. This will contribute to understand the specific factors and effects that influence this solving-problem process about agroecological practices in which farmers are the promoters.

Furthermore, comparing the learning process among the different farmer groups that belong to the PGS group would be highly valuable in order to achieve deeper insights about the contributing factors to the learning process, such as, the specific relationships between farmers and processors within the group, the level of dynamism of the group, the roles of farmers/processors within the group, etc. Additionally, studying these factors in combination with the role of the technicians who provide agricultural assistance will contribute extremely to the learning processes within the PGS certification and the campesino-a-campesino methodology.

Moreover, from a more pragmatic perspective, researches focus on the systematization of specific agroecological knowledge, techniques and practices should be carried out in order to compile the wisdom generated and accumulated by farmers and technicians in order to share it with other farmers/technicians located in other territories.

On the other hand, related to methodological issues, it would be very interesting to combine qualitative and quantitative studies as well as to include statistical analysis in order to investigate the effect of the driving factors and 'tangible' results in the management of the farms focusing on a specific challenge for farmers, such as, a particular disease or pest.

In summary, PGS could represent an alternative for organic smallholders that not only gives access to the organic market, but also provides with exchanging and learning possibilities aim at generating and spreading innovative, feasible and adapted solutions at farm level. Thus, finding the balance between requirements and flexibility for exchange and learning among its members.

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APPENDIX. PHOTOS



Picture 1. The 'Basic Course of Organic Agriculture': first insights about PGS for the 'new' farmers of the Solidarity Littoral Nucleus.



Picture 2. During a Meeting of the Farmer Group "Rio Bonito", around a table and sharing chimarrão (a traditional drink). A moment for everything: reflecting about the past and thinking and taking decisions about the future meanwhile farmers share chimarrão.



Picture 3. During the first Peer Visit to a ‘new’ farmer within in the Farmer Group “Morro Azul”: a moment for knowing better each other besides controlling the farming practices.



Picture 4. Nucleus Meeting: a good opportunity for transmitting information from a seminar of Ecovida to the rest of the SLN’s farmers.



Picture 5. A Workshop organized by Centro Ecológico for the Farmer Group “Acert” about the Good Practices about the Banana: from the harvest until the organic fair.



Picture 6. Exchanging agroecological practices between Romildo, a SLN’s farmer, with other farmers ‘Outside’ of the Solidarity Littoral Nucleus.



Picture 7. Exchange during a Technical Visit of Nelson Bellé, a CE's technician, to João, an organic banana farmer.



Picture 8. Fraternization Encountering organized by the farmer Renato for the SLN's farmers and CE's technicians.