



University of  
Natural Resources and  
Life Sciences, Vienna



Department for  
Sustainable Agriculture Systems

Division of Organic Farming  
WG Knowledge Systems  
and Innovation

# **The performance of Participatory Guarantee Systems in organic farming in the South of Brazil**

## **Case study: “Ecovida Agroecology”- network in Vale do Cai, Rio Grande do Sul**

### **Master Thesis**

Author:

Claudia Hofstadler

Matriculation number: 0640456

Master's Programme: Organic Farming (H066 458)

Supervisor:

Ao.Univ.Prof. DI Dr.nat.techn. Christian R. Vogl  
(BOKU, Vienna, Austria)

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*"Everyone has the right to know what they are eating ..... we do very little alone, but together, in-cooperation, we can build something stronger and broader" ECOVIDA(May, 2008)*

## Used abbreviations

AAO	Organic Agriculture Association
ABA	Brazilian Association of Agroecology
ABIO	Association of the organic producers of the State Rio de Janeiro
ANA	National Articulation of Agroecology
ANC	Association of natural Agriculture in Campinas, Sao Paulo
BOKU	University of Natural Resources and Life Sciences
DAC	Development Assistance Committee
EMATER	Brazilian Institute for technical Assistance and extension
EMBRAPA	Brazilian Agricultural Research Corporation
EU	European Union
FAO	Food and Agriculture Organisation
GDP	Gross domestic product
GPV	Gross Production Value
GTZ	Organization for Development of the German government
GVA	Gross Value Added
IBD	Biodynamic Institute for Rural development
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
MAPA	Ministry of Agriculture
MWU	Mann- Whitney-U- test
OAG	organic agriculture group
OECD	Organisation for Economic Co- operation and Development
PCN	Ecovida Association of Participatory Certification
PGS	Participatory Guarantee Systems
WHO	World Health Organisation

If not evident from the text, personified expressions in this thesis refer to all genders.

# 1. Introduction

Organic farming has proved to provide livelihood and monetary income for farmers in developing countries (EGELYNG et al. 2010) and it is beneficial for biodiversity, counteracts to climate change and it improves food security, especially for smallholders<sup>1</sup> (IFOAM , 2011).

Recently the organic agro-food system has transformed into a globalized system of formally regulated trade, which links socially and spatially distant sites of production and consumption. The international organic trade comprises a South-North trade of a growing number of organic producers in Latin American countries, which export their major articles to the Northern markets. This causes an increasing social and spatial distance and two key contradictions have developed: On the one hand there are mainstream market conventions, which are characterised by efficiency, standardisation and price competition. On the other hand there are alternative movement conventions, which are linked to personal relationships of trust, ecological diversity and social justice (RAYNOLDS, 2004).

Smallholders do have an essential role in food production, sustainable rural economies, and preservation of natural resources, as they are multifunctional. The dominating structure of agriculture in developing countries is a confirmation of less than two hectares. The food production is primarily for families' need, but it also generates jobs, so that it catalyses growth of rural businesses. As today over fifty percent of the world's population is living in cities, agriculture with proximity to city increases food availability for urban population. But smallholders often face limited access to resources, like education, capital, land and public services and a lack of efficient information systems, training and technical assistance. Seventy five percent of the world's poor live in rural areas and the support for small farmers is still insufficient, because the international aid for development is often invested in large-scale agricultural development (BERTONCELLO and BELLON, 2008).

However, the Brazilian legislation construction does represent the current sectors' reality. It is between international rules for exportation necessities and national regulations linked to local realities with alternatives for small scale organic farmers (BERTONCELLO and BELLON, 2008) as it allows the certification within a Participatory Guarantee System.

The development of PGS started at an international workshop in Brazil because of the creation of barriers to the organic market access of small scale farmers, who are often not certified, because they can't afford the normally used third party certification (MEIRELLES and REBELATTO DOS SANTOS, 2008).

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<sup>1</sup> The terms small scale organic farmers or family farmers do have the same meaning as smallholder in this context (IFOAM, 2011). In Brazil the concept of family agriculture is defined by the law 11.326, of the 24th of July 2009, which is delimiting the total area to a maximum of four "control modules", of which the size is fixed by the Municipalities (IPD, 2010).

Furthermore PGS as social networks for organic stakeholders are described as innovations (KROMA, 2006) with the aim to support small scale organic farmers especially in developing countries, where producers often face limited access to resources, like education, capital, land and public services and a lack of efficient information systems, training and technical assistance (BERTONCELLO and BELLON, 2008).

Originally organic Agriculture was considered as helping tool for developing countries in achieving independence from developed countries. But actually the global organic market is moving away from its' initial principles and towards a regulated market where worldwide standards set in a top-down process by politics and these standards are defining what organic farming is (RAYNOLDS, 2004; VOGL et al. 2005). However PGS designed as bottom-up process seek to empower the organic movement (MEIRELLES and REBELATTO DOS SANTOS, 2008) but the question is whether this alternative approach of certification in a social network is a helping tool to bring back the lost social principles to the Brazilian organic movement. Therefore the ancestry of the members of the PGS- initiative in the South of Brazil is analysed, additionally the kind of information exchange preferred by the members in a social network concerning agroecological knowledge is explored and finally the perceptions of the members of the PGS-initiative concerning the certification in a PGS and organic Agriculture are assessed.

Those aims are addressed by empirical research and analysis of the case study Nucleo "Vale do Cai" of the "Ecovida Agroecology"- network in an approach that combines quantitative and qualitative research. Therefore a scientific discourse is provided in the Chapter Literature review where theoretic background on Organic Agriculture in general and in Latin America is provided. In addition this chapter explains the functioning of certification and quality assurance systems in organic farming and furthermore it outlines the specifics of Organic Agriculture and PGS in Brazil, with an explanation of the importance of local agroecological knowledge in Brazil. Chapter three is based on the theoretical review and explores the problem statement and research questions and Chapter four outlines my hypotheses and research objectives. Chapter five provides a description of my study area and research partners and explores my approaches of data collection, data storage and analysis with subsequently my personal approach and my challenges faced.

The following Chapter Results is structured thematically due to the hypotheses and the analysis and the comparison to other research findings is outlined in Chapter seven. Finally Chapter eight contains my personal interpretation of conclusion and perspectives.

## 2. Literature Review

### 2.1. Organic Agriculture

#### 2.1.1. Definition of organic Agriculture

Organic production is much more than only producing without chemical inputs. It is a productive system that guarantees health for producers and consumers, that respects the environment (IPD, 2010) and it has the efficient use of on-farm and local resources as central element (VOGL, et al. 2005). It represents a holistic approach that addresses complexity and integrates a long term perspective. The IFOAM<sup>2</sup>, the umbrella association of the worldwide organic movement, delimitates organic Agriculture as both a philosophy of life and a production method (MILESTAD and DARNHOFER, 2003), with is defined as follows:

*“It is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved”* (IFOAM, 2009a).

The four principles of IFOAM (2009b) express the vision of improving agriculture globally. They correspond to interaction of people with their environment, the relations among each other and the availability of resources for further generations. One is the principle of health, which includes all individuals, communities, organisms and the whole ecosystem. Health concerns physical, mental, social and ecological well-being. Organic agriculture contributes to preventive health care and the avoidance of input, which can cause harmful health effects. The principle of ecology refers to all actions of organic farming, which should be based on natural processes, managed in closed cycles and cause ecological balance. This includes management adapted to local conditions, the improvement of environmental quality, conservation of resources and support of biodiversity. The fairness principle concerns the development of respectful and equitable relationships on all levels and among all parties involved in organic agriculture, thus involving the system of production, distribution and trade. This also includes the support of food sovereignty and reduction of poverty. The fourth principle of care refers to the protection of health and well-being of current and further generations and

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<sup>2</sup> IFOAM was founded in 1972 by countries located in the North. Today the movement includes individual and institutional members from more than 100 countries. The expansion has dominated in the countries of the global South, which represent the majority today. The aims of IFOAM are key market oriented functions, like establishing international organic standards (RAYNOLDS, 2004).



the environment. Organic farming should not cause jeopardising, neither through new technologies, nor through traditional methods of practice in organic farming, but equivalent to responsibility and precaution within management. Organic agriculture should produce valid solutions in alliance with scientific and traditional knowledge and decisions should be made through transparent and participatory processes.

Organic farming is based on traditional sustainable agriculture, farmers' innovations and the results of scientific research. The practices are embedded in local cultures and especially in developing countries organic agriculture is based on local farmers' knowledge and experience. Agroecology is an example for a term used instead of organic to express the sustainable manner of traditional practices of small farmers, who are often not certified (VOGL, et al. 2005).

### **2.1.2. Global organic market**

The statistical information of organic agriculture shows the growth of organic farming worldwide. In the year 2009 the global organic agricultural land accounted already 37.2 million hectares, including in-conversion areas. This is 0.9 percent of the world's total agricultural land. Compared to a previous survey the organic land increased by six percent, with the strongest expansion in Europe. The amount of organic producers worldwide increased about 31 percent, with most organic farmers being found in India. The main organic land use is through grassland, followed by arable land, whereof permanent crops capture six percent. That is an augmentation of almost half a million hectares. Important crops related to land size, are coffee, followed by olives, and cocoa, furthermore nuts and grapes. Despite the current financial crisis the global sale of organic products expanded, although a bit slower, by roughly five percent, presenting 54.9 billion US dollars (WILLER and KILCHER, 2009).

The global organic market is characterized by a distinction in North and South. Major parts of consumption of certified organic products happen in the global North and West, while the certified organic production increases in the countries of the South and the East (EGELYNG et al. 2010). The rising importance of standards and traceability requirements in restricting access to international markets shows the influence of international and national policies in regulating world trade (RAYNOLDS, 2004).

### **2.1.3. Organic Agriculture in Latin America**

More than one-third of the world's organic agricultural land is located in countries listed by the DAC, which contains the recipients for "Official Development Assistance". That pertains to most Latin American countries, Asia and Africa. In Latin America and Caribbean countries the agricultural organic land increased from about 1.4 percent of the total agricultural land area 2008 until 2009. But organic agricultural production is not increasing equally in all Latin American countries. Organic is distinct from other sustainability standards, as it is a holistic production management system and it is practised and promoted by private and public organisations. Furthermore it is the only standard defined by public regulations. However, these standards compete for market shares with other sustainability standards

like “Rainforest Alliance”, “UTZ Certified” or “Fair Trade”. Despite the constant growth of organic markets, especially in tropical regions there is a stronger growth of new market entrance, which leads to confusion and can damage the organic market. Currently alliances have already been formed between brands to withstand competition. The organic sector has accepted double or triple certification. This is the case for 15 percent of organic and Fair Trade cocoa and 50 percent of Fair trade coffee is also organic (WILLER and KILCHER, 2009). But two inspections can imply double costs and more bureaucracy for the certified farmers (FONSECA et al. 2008). Further there are premium labels, like “Nespresso”, which promise food safety qualities to the consumer instead of using organic standards. And there is a confusion of consumers through the use of claims similar to organic, like “natural”, which is not protected by law (WILLER and KILCHER, 2009).

However, most organic products from Latin American countries are sold on the European, North American or Japanese markets, especially goods that cannot be produced in these regions and off-season products. The development of robust local markets for sustainable organic production is still a big challenge in Latin America. Most of the organic food sales in domestic markets occur in major cities. Most Latin American countries do have an organic legislation only Costa Rica and Argentina do have the “Third Country status” in the European Union (WILLER and KILCHER, 2009), which means that these countries are listed in the Annex III of the EC 1235/2008 and the imported organic products of these recognised countries provide equal guarantees to domestic organic products, because they have been produced in accordance with production rules equivalent to those of the EU Regulation (AXMANN, 2011).

In most OECD countries the organic regulations are tripped by a concern for domestic market, while in most developing countries they have mainly been applied for exports only (RUNDGREN, 2007). Organic policies in Latin America are based on simple ministerial agreements. But it is important to develop an organic policy that includes technical rules, educational programmes, financial funds and rural advisory. Just passing a law is not enough (ESCOBAR, 2012).

The largest portion of the exported organic products are produced or collected by groups of smallholders (WILLER and KILCHER, 2009). Millions of small farmers worldwide practice organic farming without being certified. This is often called “organic by default”, which means, that the farmers don’t use any synthetic inputs, in other words low external input farming. These farmers often use traditional practises that are promoted in organic farming (VOGL et al. 2005). But there is also a rising importance of mainstream retailers reinforcing the position of big producers in Latin America, who can supply the Northern organic markets with large amounts of standardized goods (RAYNOLDS, 2004).

## **Certification<sup>3</sup> in organic Agriculture**

Since the 1980s governments worldwide started to establish regulations for the organic market to protect the consumers from misleading claims and producers from unfair competition. The first regulations contained basic production standards and rules for certification, which have been enhanced. Currently there exist two international standards for organic agriculture: The Codex Alimentarius Organic Guidelines<sup>4</sup> and the IFOAM Basic Standards<sup>5</sup> (RUNDGEN, 2007).

The number of countries with organic standards and regulations is increasing annually (WILLER and KILCHER, 2009) and there are established various standards, because there are many different possibilities of regulations, e.g. Mandatory rules, voluntary public programs or private sector standards, which can be used for export, for domestic markets, or both (RUNDGEN, 2007).

The different options of regulation recognized by IFOAM are following: Primarily there is the option of no regulation at all. Thereby the salesmen themselves should determine the marketing of fraudulent products, which can cause the loss of consumers due to a lack of confidence. Furthermore there is the possibility of a general consumer protection regulation, which constitutes the simplest level of regulation. These rules comprehend that any product marked as organic must have been produced according to an organic standard, which could have been formulated by national standards organisations or by the Ministry of Agriculture. A further option is the voluntary domestic organic regulation. It can be based on local conditions, different standards and mechanisms and applied for domestic markets, like general consumer protection regulations. That means export markets, which are unregulated or have less demanding import rules, can be accessed. The possibility of a voluntary organic export regulation refers to norms, that are normally based on the standards of import markets and domestic regulations are not considered. So the recognition by the importing country is only

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<sup>3</sup> The procedure by which a third party gives written assurance that a clearly identified process has been methodically assessed, such that adequate confidence is provided that specified products conform to specified requirements (IFOAM, 2006).

<sup>4</sup> Also called food code, that are food standards, guidelines and codes of practice for organic production, processing, labelling and marketing for food and it is administrated by the FAO and the WHO (RUNDGEN, 2007). This standard is relevant if it bears upon, relates to or is pertinent to the situation (KUNG, 2010).

<sup>5</sup> The IFOAM Basic Standards for Organic Production and Processing are part of the IFOAM norms, which are the basis for IFOAM's Organic Guarantee System. These standards implement additional purposes, like serving as guidelines for private and governmental agencies that set their own regional or other specialized standards for direct use in certification (IFOAM, 2006).

limited to the conformity assessment system. This is easier to implement than comparing all standards and the certified products can also be sold at local markets. A disadvantage of this regulation system can be that, which are less well adapted to local conditions standards have to be complied. Mandatory organic export regulations are similar with the main difference, that exports to unregulated markets are restricted. In opposition there are mandatory domestic regulations, which are detailed rules governing all sales and marketing of organic products. This option provides the strongest legal protection. A further differentiation for regulation is the possibility of private or government's certification. The advantages of private certification are competition and service orientation. In governmental certification systems mainly stability is given and they are accepted as independent (RUNDGREN, 2007).

The EU, Japan and USA have the most detailed standards for organic production (RUNDGREN, 2007) and civil society has not been involved in the development of certification (EGELYNG et al. 2010). These standards stipulate that all producers have to be certified by approved or accredited certification bodies<sup>6</sup> and also import approvals for organic products are based on mandatory government regulations. The easiest way for foreign producers to get access to these markets is by implementing a similar system in their country or an equivalence agreement (RUNDGEN, 2007). This agreement implies that organic products can be imported in a country, if the production rules match to the standards of the importing country (VOGL et al. 2005). But negotiation of equivalence is very time-consuming and resource demanding, so the main way is by certification by an accredited<sup>7</sup> organisation, which has got acceptance in those markets (RUNDGEN, 2007).

In the last years there was an increase in certification bodies. In 2009 the augmentation of accredited certification bodies rose from 489 up to the total number of 532. Most certification bodies are in the EU, USA and Japan that means in developed countries but they offer their services in developing countries, too. So there appears to be a certified operator in nearly all countries of the world (WILLER AND KILCHER, 2009). For exports the regulations of the importing country need to be met, which often means additional requirements for foreign producers, because the additional rules are often not considered to local conditions (VOGL et al. 2005).

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<sup>6</sup>A certifications body is somebody that conducts certification, as distinct from standard-setting and inspection (IFOAM, 2006).

<sup>7</sup> Accreditation means the verification of the competence of certification bodies active in the field of organic and sustainable agriculture. These certification bodies are supervised by several government agencies and private organisations to insure integrity (IOAS, 2011).

## **2.2. Quality assurance systems in organic Agriculture**

In organic farming different types of quality assurance systems are used. The first party assessment is the process of farmers signing an affidavit and thus adopting the quality assurance. The second party assessment includes a marketing organisation that approves the scheme with its reputation and supports the development project (FONSECA, 2004).

Furthermore there is the third party certification within a group, which is an exception to the regulation ISO guide 53 (IFOAM, 2003) and a tool to assist producers to comply with organic markets requirements (RUNDGREN, 2007). This system allows producers, who are excluded from the organic sector because they can't afford the costs for the annual inspection of the third party certification body, to organize themselves in groups. The group certification can be managed differently, but customarily a central body is responsible for marketing and the groups' compliance to applicable standards. The individual production is certified within the group and all activities are registered. There is a presence of an internal control system (ICS), which is operated by a responsible central body, or an external body. All members are listed and the files are available for all participants and inspected once a year (IFOAM, 2003). In most countries group certification is not formally recognized, but it has global acceptance (RUNDGREN, 2007).

The currently wide spread and normally used third party certification has big disadvantages due to high costs and the inflexibility in the certification process. This creates barriers to the certification of smallholders (FONSECA, et al. 2008). The certification scheme represents a powerful form of network governance, which is rooted in social and legal institutions. Third party certification enforces uniform practises across organic networks and the exclusion of small-scale farmers encourages the concentration of organic production and price premiums in the hands of large corporate producers (RAYNOLDS, 2004). Therefore Participatory certification systems have been developed to adjust these drawbacks.

The Participatory Guarantee Systems have been discussed on a global level since April 2004. It started at a workshop in Torres, Rio Grande do Sul, in Brazil, where the already existing initiatives of alternative certification were analyzed and their common ground was described. The result was a PGS- concept document of the principles and goals of this guarantee system (MEIRELLES and REBELATTO DOS SANTOS, 2008). Participatory certification is defined as a process for creating credibility through commitment and participation of all stakeholders interested in organic production and it is based on an assurance by a network of people and organisations involved in the production, distribution and consumption, use of the product or service with co-responsibility to guarantee the quality system (FONSECA, 2004). PGS are often specifically designed for small producers within its regulatory system. It is not only a quality assurance system but also linked to alternative markets and tries to educate consumers in organic methods (RUNDGREN, 2007). There are lots of similarities to group certification, but the main difference is that in the PGS the producers are certified as individuals, and the certificate belongs to the individual and not to the whole group (FONSECA, 2004).

The application of PGS in the different countries show that there is no one- fit- all system for organic certification. The recognition of quality and integrity of organic certification is a long and ongoing improving process, which needs to be developed in accordance with the main users, the farmers and consumers. But all PGS have basic principles in common, which are: the creation of trust through transparency and social control, participation of all actors involved in the norm setting and certification process and minimization of bureaucracy, with additional positive effects of cutting down costs and saving time. Moreover PGS emphasise the importance of the construction of knowledge and learning processes, through involvement of farmers, consultants and consumers. These systems refer to a horizontal share of power, which means the same level of responsibility and capacity for all participants (MEIRELLES and REBELATTO DOS SANTOS, 2008).

### **2.3. Organic Agriculture in Brazil**

In 2009 more than 280 000 producers managed 8.6 million hectares of organic agricultural land in Latin America. The leading countries are Argentina with 4.4 million hectares, followed by Brazil with 1.8 Million hectares, both being large countries. In Latin America most production is for export, but Brazil has the largest market for organic food and drink in the region (WILLER and KILCHER, 2009). Brazil currently faces an organic market growth of 30 to 50 percent per year (BERTONCELLO and BELLON, 2008).

In the year 2010 organic production in Brazil accounted only 1.5% of the national area, but in global consideration Brazil ranked fourth place in regard to the area of certified organic production with 1.8 million hectares. And it would be second if the not certified production, which is 89.5% were added. The average size of Brazilian organic production units is 35 hectares per producer and the principal activity of organic production in Brazil is horticulture with the cultivation of manioc, corn, beans and café dominating and cattle keeping being the leader in term of organic animal production (IPD, 2010).

The first private standards were established in the eighties, but soon after Brazil's initiation into organic exports to Europe in 1988, the Brazilian authority got pressure to implement an organic legislation through the new European Council Regulation EC No. 2092/91 (EGELYNG et al. 2010). The Brazilian organic legislation is the result of a participative and bottom-up process. The Normative Instruction No. 7 of 1999 was replaced by general principles in 2003, because of the need of harmonization, standardisation and organisation (BERTONCELLO and BELLON, 2008). Finally in 2003 the law No. 10,831 for organic food and farming was passed (EGELYNG et al. 2010). So Brazil is one of the youngest countries in Latin America that implemented laws and regulations, but it was achieved through a long and participatory process (WILLER and KILCHER, 2009). The standards and regulations are based on international standards and references, but with adaptations on local conditions (FONSECA et al. 2008).

In the 90's the first national certifying institutions, the "Instituto Biodinamico de Desenvolvimento Rural" (IBD) and the "Assosiacao de Agricultura Organica" (AAO) were founded, and they are supervised by the National Institute of organic products (URIARTT et al. 2009). Organic agriculture in

Brazil includes big enterprises, but 80 percent of the organic projects have been developed by family farmers (FONSECA et al. 2008).

In 1999 the normative instruction No. 7 of the MAPA, which defined the organic production system and determined that an organic product commercialised needs to be certified was introduced. This led to a main disagreement of the Brazilian organic movement in the obligation and the mandatory method of certification. Some groups argued for the need of legislation for support and promotion of organic products and on the other hand some stakeholders perceived that the organic certification could be voluntary through the direct relationship between consumers and producers.

In 2002 the normative instruction No. 6, was implemented, proposing the accreditation criteria for certifying companies. This caused disagreement and confusion in the organic sector. As a result the OAG was founded, with the goal of constructing a legal basis on the principle of consensus and support of small initiatives of organic production. One of the group's main activities was to organize local and regional workshops with the aim of constructing the participatory certification network in Brazil. Furthermore the OAG aimed to construct an organic law that reflects the reality and is adequate to Brazilian organic agriculture.

Actually the principles of supporting small initiatives are enforced by law 10,831 implemented in 2007, which is different from legislations in other countries, because there is no certification needed for direct trade with small farmers under social control and second it allows development of different certification systems, while certification is not voluntary (MEIRELLES and REBELATTO DOS SANTOS, 2008).

This law recognizes PGS on the same level as third party certification, and PGS initiatives can obtain accreditation from the MAPA. Since 2010 all organic products sold in Brazilian supermarkets or restaurants, must have a national organic seal. According to the implementation rule No 19, on the 28 of May 2009, the process of accreditation implies an application at the PGS- "Head office" and an audit by "COARGE", a department of the MAPA, which is responsible for organic agriculture promotion and accreditation for third party certification and PGS in Brazil. By now there are three participatory organisations accredited: the "Associação de Agricultura Natural de Campinas" (ANC), the "Rede Ecológica de Agroecologia" and the "Associação de Agricultores Biológicos do Estado do Rio de Janeiro" (ABIO) (WILLER and KILCHER, 2009).

## **2.4. PGS in Brazil**

The "Ecovida Agroecology"- network is the first and biggest network for participatory certification in the south and southeast of Brazil. It is an informal network without legal representation and was officially created by organizations working on alternatives on the negative effects of conventional farming created in November 1998. But many groups of the network have already existed before the formal recognition of the network in 1998.

The structure and management of the "Ecovida"- network operates decentralised by the formation of regional "Núcleos", by the amalgamation of network members of a geographical region. The Núcleos

have the informal response of exchange of information, credibility and products (MEIRELLES and REBELATTO DOS SANTOS, 2008). They have the autonomy not to allow the utilization of products allowed in other Nucleos. Each regional Nucleo consists of several groups, associations or cooperatives of members registered in the “Ecovida”- network. All these groups have an “ethical committee”, which is a group of people that are responsible for the accomplishment of the standards. The committee must be composed of at least three persons and it should rotate between the group components to occupy this position (ECOVIDA, 2004).

At the moment the network encompasses 25 regional “Nucleos”, with 200 groups of organic producers, 20 NGOs and 10 consumer cooperatives involved (ECOVIDA, 2012).

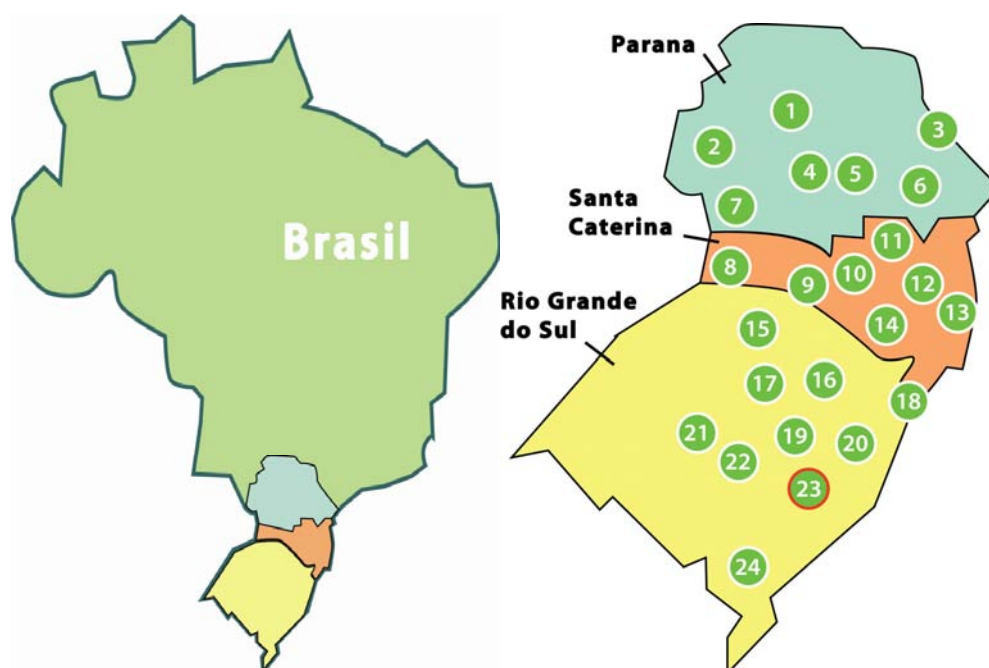


Figure 1: Map of Brazil with the location of the Nucleos of the “Ecovida Agroecology”- network in the South and Southeast of Brazil (adapted from BELLÉ, s.a).

From the beginning of the foundation of the “Ecovida Agroecology”- network the development of credibility has been central. This happens through formal and informal relations between producers and consumers and grassroots organisations. This guarantee process has several built-in mechanisms to check the compliance with the norms so there is no third party inspection necessary. The PCN is responsible for the legal concerns, especially for the formalization and organisation of the participatory processes of the regional Nucleos. Furthermore the PCN is officially responsible for the guarantee process. The annual monitoring by the “ethical council” is functioning in terms of evaluating a conversion plan of the farm considered. To check the compliance with the rules there are several built- in mechanisms, like participation of farmers, proximity of consumers, technical assistance from consultancy organisations and internal and external control. The certification is recognised among other Nucleos of the network, which causes circulation of information and increasing credibility.



Further a non- certified organisation can participate, but no one can be certified without being a member of the network (MEIRELLES and REBELATTO DOS SANTOS, 2008).

The process of certification is linked to the creation of credibility which is developed from the responsibility of the household (Figure 2). It is legitimised socially in the different organisational instances where a family participates.

The production unit is the first level of certification through the ethical commission of the group, to which the producer belongs. The group is associated to a Nucleo, where it has co-responsibility and where it is backed up by the “ethical council”. The products of a Nucleo are supported by other Nucleos, which have the same production norms (MEIRELLES and REBELATTO DOS SANTOS, 2008).

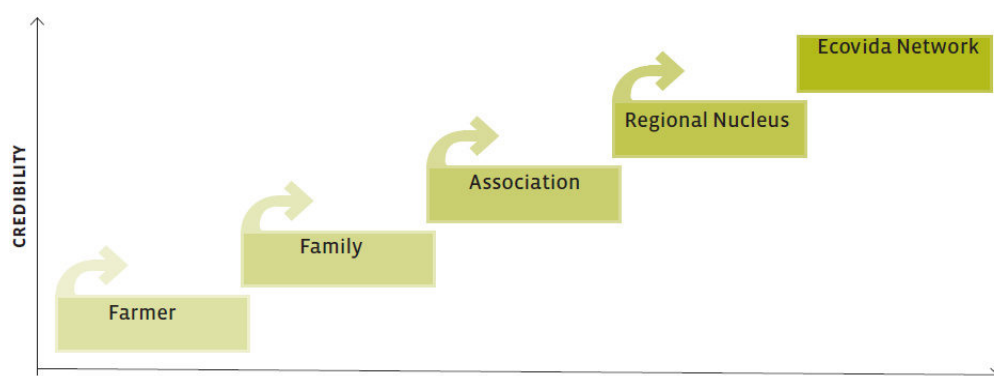


Figure 2: Development of credibility in a cumulative way in the “Ecovida Agroecology”- network through several built- in mechanisms, displayed by arrows on the different organizational instances of the PGS (MEIRELLES and REBELATTO DOS SANTOS, 2008)

The “Ecovida Agroecology”- network has published a booklet, which was developed at the meetings held by the groups, containing the common criteria for the organization and functioning of the network as well as the general norms for production and certification. The quality sign of the network (Figure 3) can be put on products and utilised on stalls of markets, on the farm, processing operation, but only if the criteria of 100% ecological are fulfilled. Otherwise the label can only be used on the specific ecological product. In case of misconduct concerning the organic norms following sanctions are carried out:

The certificate and the use of the label cease immediately. Then modification of procedures of production or processing has to be carried out according to the report of the “ethical committee”. But the certificate can be regained by requesting to the regional Nucleo and proving the compliance with the norms through changes. Recurring incidents are evaluated by the regional ethical council, which was developed at the meetings held by the groups (MEIRELLES and REBELATTO DOS SANTOS, 2008).



Figure 3: Official label of the "Ecovida Agroecology"- network (BELLÉ, s.a.)

## 2.5. Local agroecological knowledge in Brazil

The term “Agroecology” is currently used with different meanings within different cultures around the globe. The three major uses of the term are as science, movement or agricultural practice. In Latin America the term Agroecology was established in the 1980s as a practice to support local farmers and improve their farming practices as an alternative to the high input agriculture. In Brazil the foundation of Agroecology was not laid in science, but in different types of movements, all based on traditional agricultural practices, which emerged in the 1970s. The movement grew from concerns about environmental deterioration and small farmers’ social exclusion from agricultural modernisation. Agroecology was formally acknowledged in Brazil with the implementation of the organic law in December 2003, whereas it is recognized under the umbrella of organic farming. The law implemented the political dimension of Agroecology as important to support small farmers and foster rural communities together with certification through participatory guarantee systems. This movement led to the foundation of the “Ecovida Agroecology”- network (Chapter 5) in 1998, with the intention to break with third party certification systems and formal markets towards to local markets approaches through a partnership with consumers (BELLON et al. 2009). The network empathize the concept of Agroecology, which refers to the ethical paradigm respect for environment and local culture, solidarity and local knowledge as fundamental for sustainable farming (MEIRELLES and REBELATTO DOS SANTOS, 2008).

Today the concept of Agroecology is institutionalized in Brazil and the idea is promoted by the ANA, which was founded in 2002 as a space for convergence of movements, networks and organisations from civil society. Furthermore Brazilian technical assistance and rural extension public policy, like the EMATER of Rio Grande do Sul, the ABA and the EMBRAPA promote the implementation of agroecological principles through participatory and on-farm approaches (BELLON et al., 2009).

According to the definition of Fikret Berkes the term local knowledge or traditional knowledge is the knowledge of a specific group of a population on a specific place, where it is typical and unique. This includes experiences, also called learning in practice, the interpretation of these experiences to

empirical knowledge, and the transmission and application of this knowledge. Those levels are reciprocal and all the knowledge is coded in language (BERKES 1993).

The Western colonisation and the introduction of Western-based educational curricula and formal schooling in third world countries had a massive impact on the local knowledge, as it is often devalued as inferior. RUDDLE (2000) refers to the rational bases of local knowledge, like adaptations to risk, based on generations of empirical experience and arranged to principles that are radically different from those prevailing in Western scientific circles. But local knowledge can be understood as a system of power in community-based resource management especially where scientific knowledge is relatively poor. So acquiring, using and transmitting such knowledge is extremely relevant in developing communities, because it organises the rural poor. Formal education has only little use for local resource management (RUDDLE, 2000).

Actually, organic networks emerge as innovations supporting the development of a local ecological knowledge system, which is a result of a dynamic process in which ecological knowledge, farmer experience and conventional agricultural knowledge interact in guiding farmer innovation with the focus on social change. She identifies a direct correlation between the adoption of organic practices and the development of networking activities and describes differences in the learning of conventional and organic farmers, whereby conventional producers are passive recipients of knowledge, while organic producers are forced to become experimenters in their farming, because there is a lack of a systematic knowledge on organic practices (KROMA, 2006). Also RUDDLE (2000) refers to the importance of local knowledge in resource management as it includes empirical and practical components and it can provide an important information base especially where conventionally used data is scarce. Because of the knowledge transmission and the socialisation of children over several generations, local knowledge shapes society and culture and society shapes knowledge. The institutionalisation of the concept "Agroecology" in Brazil conducts role playing by individuals, which is subject to compliance and sanctions (RUDDLE, 2000) (Chapter 2.5).

### **3. Problem statement and research questions**

Organic farming was and is being developed by farmers, scientists and people concerned in a bottom up process but since there is a big public interest in this farming method, it is moving away from its original principles. Actually worldwide standards have become the primary source of defining what organic farming is (VOGL et al. 2005). Brazil is the pioneering country in terms of the alternative approach of certification in organic agriculture, called PGS. This system is specially designed to support small scale organic farmers, who are excluded of the organic market, through disadvantages of the globally common used third party certification.

Despite the success in terms of growing numbers of PGS-initiatives mainly in developing countries, where smallholders often face limited access to resources, like education, capital, land and public services and a lack of efficient information systems, training and technical assistance (BERTONCELLO

and BELLON, 2008). Also BELLÉ (s.a.) reports in his presentation about the challenges of the “Ecovida Agroecology”- network, which are the lack of technical assistance, problems of farmers concerning the bureaucratic part of certification and the adaptation of organic norms. A further challenge mentioned in the report of the case study of the “Ecovida Agroecology”- network by MEIRELLES and REBELATTO DOS SANTOS (2008) is a lack of financial resources that leads to difficulties in economic support for the work of NGOs in the leading process of the PGS and in the organisation of the regional Nucleos on grassroots level and furthermore in the increasing of the number of organic producers, as there is no financial support by the Brazilian government for farmers during the conversion period of their production systems.

There are similar challenges faced by PGS-initiatives in other developing countries. HOCHREITER (2011) reports in her comparative study about participatory and externally certified farmers in Mexico, that the farmers in a PGS perceive major challenges of organic certification in the economic as well as social area, whereby the most frequently responded parameters concerning challenges are a lack of resources for investment, a lack of trust and time, and furthermore high workloads and the avoidance of the use of agrochemicals.

To multiply the amount of organic farmers, local agroecological knowledge has a big relevance, because the transition from a conventional to an organic production system entails a risky shift. The farmers must change their management practice, which requires access to skills, knowledge and information platforms different from conventional agricultural knowledge (KROMA, 2006).

However BINDER and SCHÖLL (2009) argue, that educational programs for farmers often have no or only little effects, because technicians are telling the farmers what to do, but they are not teaching them anything. But there is a new perspective of social learning, which is an interactive process of learning and action grounded in participatory processes. In the centre of social learning are groups with interaction of individuals who take each other as equal participants in learning (KROMA, 2006).

I developed my research questions due to the promotion of the respect for environment and local culture, solidarity and local knowledge as fundamental for sustainable farming inside the “Ecovida Agroecology”- network (MEIRELLES and REBELATTO DOS SANTOS, 2008) and the networks’ aim of increasing the understanding of all participants as helping tool to multiply the number of agroecological initiatives (ECOVIDA, 2004). My focus lies on the members participating in a PGS-initiative in the South of Brazil and the exchange of local agroecological knowledge in an organic farmers’ network as important tool to increase the organic production in Brazil. Furthermore my interest lies in the members’ perceptions related to organic certification and organic Agriculture, because knowledge does not necessarily lead to a behaviour change of producers concerning the transition to organic production. There are also perceptions, especially risk perceptions, which can act as deterrent to action of change (KROMA, 2006).

RQ1. What are the actors in the Participatory Guarantee System in organic certification in theory and practice?

RQ2. What are the relational ties of the actors of the PGS in theory and in practice?

RQ3. What are the formal and informal institutions providing local agroecological knowledge for the actors of a PGS in theory and practice?

RQ4. Which internal elements of the PGS are seen by the actors as strength and which as weakness?

RQ5. Which external elements of the PGS are seen by the actors as an opportunity and which as a threat?

## **4. Hypotheses and research objectives**

Based on theoretical considerations that the members of a PGS have the same ancestry, which is Brazilian, because PGS promise to stimulate local development, which is adapted to local social cultures (ECOVIDA, 2004; MEIRELLES and REBELATTO DOS SANTOS, 2008) I assumed that there are mainly local actors with a Brazilian Nationality involved in a PGS initiative in Brazil.

H1: In a PGS in the south of Brazil are more members with Brazilian ancestors participating than members with Non-Brazilian ancestors.

Experiences in “Agroecology” in Brazil are based on the organisation of farmers in groups and on the creation of networks with the aim to change the present situation and to stimulate the application of new ethics. Due to the fact that networks are not institutionalised it is possible to disseminate practices and knowledge and to exchange different experiences and increase the self-organisation of local farmers’ initiatives. Furthermore networks can help to improve the political and legal context of farmers’ initiatives (URIARTT et al. 2009). KROMA (2006) describes organic farmers’ networks as social innovation for learning and knowledge diffusion, because these networks evolved into a process of sharing knowledge and validating organic experiences of farmers. Thus she concludes in her study, that the interviewed farmers perceive that university research is largely irrelevant to their knowledge interests. Furthermore she describes public extension as a linear transfer of science-based agricultural knowledge generated through expertise to farming communities (KROMA, 2006). Due to these findings I came to my second hypothesis that the organic producers inside a PGS find it more important to learn new things concerning organic Agriculture through informal conversations with colleagues than through formal learning opportunities served by extension services.

H2: Informal information exchange in between the members of a PGS is a more important learning source concerning local agroecological knowledge for the members of a PGS than formal information exchange with extension services.

Knowledge does not necessarily lead to behaviour change, but there are also perceptions, which are the sensory experiences of the individuals’ world. Perceptions can vary a lot on individuals, who have the same reality and they are influencing the individuals’ behaviour (KROMA, 2006). Also BINDER and SCHÖLL (2009) argue that the way of how farmers perceive their livelihood can result in the

circumstance that farmers with the same assets have a different view on them. So perceptions of farmers can act as deterrent to the action of converting to organic Agriculture (KROMA, 2006).

That is why my focus is set on the influence of the kind of farmers' organisation on the perceptions of the members of the Nucleo Vale do Cai concerning the principles, the strengths and weaknesses of certification in the PGS. The members of the Nucleo "Vale do Cai" are organised in two different kinds of organisations, namely associations and cooperatives. The main difference in between these organisations is the juridical structure. That means cooperatives enable the farmers in accordance with the Brazilian law, to sell their products to registered economic agents, like intermediaries (BLANC and KLEDAL, 2012). Furthermore associations and cooperatives differ in their amount of associates registered. Due to MARKELOVA et al. (2009) I came to the assumption that associations as they have fewer members than cooperatives, are easier to organize.

H3: The members affiliated to an association evaluate the principles of a PGS as higher inside their organisation, than the members affiliated to a cooperative.

H4: The members affiliated to an association perceive the strengths of a PGS more positively than the members affiliated to a cooperative.

H5: The members affiliated to an association perceive the weaknesses of a PGS more negatively than the members affiliated to a cooperative.

I developed my hypothesis concerning the members' duration of organic experience and their perceptions concerning the opportunities and threats of organic Agriculture, because of the article of KROMA (2006), in which she empathizes the importance of practical experience and local agroecological knowledge for the learning processes of organic farmers. The term of organic experience was translated to the local common speech appropriately with the term production without chemical inputs.

H6: The members with more experience in organic production have a more positive perception of the opportunities of organic Agriculture than the members with less experience in organic production.

H7: The members with less experience in organic production have a more negative perception of the threats of organic Agriculture than the members with more experience in organic production.

There is an actual discussion about organic Agriculture as helping tool to achieve independence of developing countries from developed countries. Because there is an adjustment of the process of developing, implementing and setting organic standards to policy in a top-down process, and no longer by involved NGOs. This has left the organic movements worldwide with little power (VOGL et al. 2005). But the PGS designed as bottom-up process seek to empower the organic movement (MEIRELLES and REBELATTO DOS SANTOS, 2008). So the objectives that shall be achieved within this thesis are:

- To find out whether there are only local actors or also Non-Brazilian actors involved in a PGS

- To investigate the kind of information exchange preferred by the members concerning local agroecological knowledge in a social network.
- To assess the influence of the kind of farmers' organisation on the perceptions of the members of a PGS-initiative concerning the certification in a PGS and
- To measure the influence of the duration of experience in organic production on the members' perceptions concerning organic Agriculture.

Due to the big relevance of PGS for bringing back the lost social principle to the globalized organic market and the lack of attention in science and public, this study should provide empirical knowledge about the interaction in the local agroecological learning process of the actors of a PGS initiative in the South of Brazil and the actors' perceptions concerning certification in a PGS and organic Agriculture. As there is no one-for-all system for PGS, organic stakeholders, especially actors of agricultural consultancy services, in similar situations can profit from the results of this survey.

## 5. Methods

### 5.1. Study area- Rio Grande do Sul, Vale do Cai

The southern state of Brazil called Rio Grande do Sul borders the countries Uruguay and Argentina and the Atlantic ocean in the East. The state has a big diversity in its relief and vegetation, with three characteristic regions. The "Pampas" located in the South has an altitude of about 500m above sea level and a typical vegetation, which is resistant to water shortage. The "Planalto Serrano" in the Northeast has the highest altitude, which is 1,400 m. The third region is "Lagunar" on the coast is characterised by lagoons of salt water. The predominant climate is subtropical with a mean temperature of less than 20°C (INFOESCOLA, 2008).

The absolute population of Rio Grande do Sul was 10.695,532 habitants in the year 2010, which ranks it on the fifth place of all states of Brazil. But the state has been characterised by emigration of the population in recent years. The demographic density is very heterogenic and accounted for 38 habitants/ km<sup>2</sup> in 2010. The most populated urban areas are Porto Alegre and Caxias do Sul, but there are also regions in the South with less than 15 habitants/ km<sup>2</sup>, where big operations are dominant and the urban centres are relatively isolated. In the North and Northeast the density of the population accounts for the mean of the state and small operations are predominate (ATLAS, 2009).

Rio Grande do Sul has the fourth biggest economy of Brazil concerning the size of the GDP, which reached R\$ 202.9 trillion in the year 2009. This corresponds to 6.6% of the national GDP, whereas Sao Paulo has the biggest economy, with 33.9% of the national GDP. The most important sectors of the economy of Rio Grande do Sul are services, which accounted for 61.2% of the GDP of the state in 2008. The sector processing industry accounted for 27.2% of the states GDP, where as mechanics and food products were distinguished. In 2008 the sector agriculture accounted for 11.2% of the structure of the GVA with a big participation of the sector agro-industry that recovered from years of

bad harvest (ATLAS, 2009). Plant production (Table 1) is the most important kind of production, which accounted for 61.34% of the GPV of the agricultural sector in the year 2009 followed by animal production with 33.98% (ATLAS, 2009)

Table 1: Permanent and temporal crops and the appropriate cultivated area in hectares in Rio Grande do Sul in the year 2011

Permanent crops	Area in ha	Temporal crops	Area in ha
Grapes	49,198	Soya	4.075,389
Mate herbs	30,840	Rice	1.169,849
Oranges	27,688	Corn	1.100,309
Apples	17,124	Wheat	932,390
Peaches	14,679	Tobacco	223,867
Mandarins	12,918	Oat	97,384
Bananas	12,217	Beans	89,422
Kaki	2,249	Manioc	80,342
Figs	1,780	Barley	34,014
Lemons	1,600	Sugar cane	32,694

adapted from (SIDRA, 2012)

Organic production plays an important role in the South of Brazil. In comparison to other states in Brazil, in 2006 the state Rio Grande do Sul had the smallest area of organic production with 11% of the total national area but in opposition it has the biggest distribution of organic area established with 28 hectares. In terms of numbers of organic producers established and certified Paraná was the leading state in 2010 with 909 followed by Rio Grande do Sul with 662, but the number of not certified organic production in Brazil is still higher than the certified one. In Rio Grande do Sul in 2006 cattle keeping accounted for 60% of the organic production of the state. The most important organic crop was corn followed by manioc (IPD, 2010).

The structure of the operations varies in the different regions, but the majority of the operations of the state are small structured. In the year 2006 85.8% of the established production units of the state had less than 50 hectares and cultivated 24.4% of the agricultural land. While the operations with more than 500 ha accounted for 1.83% of all agricultural production units of the state, but cultivated 49.1% of the total agricultural land (ATLAS, 2009).

The “Vale do Cai”, which means the valley of the river “Cai”, is located in the Northeast of Rio Grande do Sul in the region “Planalto Serrano”. The soil of the valley is characterised by inundations of the river Cai (BERTAZZO, 2009) and was taking account of an area of 1854 km<sup>2</sup> in 2011. In this year the total population of the Vale do Cai was in 170,659 habitants, which resulted in an demographic density



of 92 habitants/ km<sup>2</sup> (FEE, 2013). This region is the main citrus production area of Rio Grande do Sul and this fruits are typically produced on small farms, in areas between five and ten hectares (IBGE, 2010). The Vale do Cai has been greatly influenced by European immigrants, with the nationalities Germans and Italians most representative in the colonization process. At the beginning of the 19<sup>th</sup> century the Brazilian government sold cheap land to populate the south of Brazil, which motivated many European agriculturists to emigrate. The settlement was characterized by the distribution of small lots of rural operations. The main German immigration happened from 1824 to 1829, when 5,000 German arrived in Rio Grande do Sul and founded the cities “Montenegro”, “São Sebastião do Cai”, “Pareci”, “Pareci Novo”, “Harmonia” and “Bom Princípio”. The first emigrating Italian families came in the year 1875 and two of the cities amongst others grounded in the area of the “Vale do Cai” are “Caxias do Sul” and “Bento Gonçalves” (IBGE, 2010). Today the area around the river “Cai” is divided in 19 Municipalities (Figure 4).

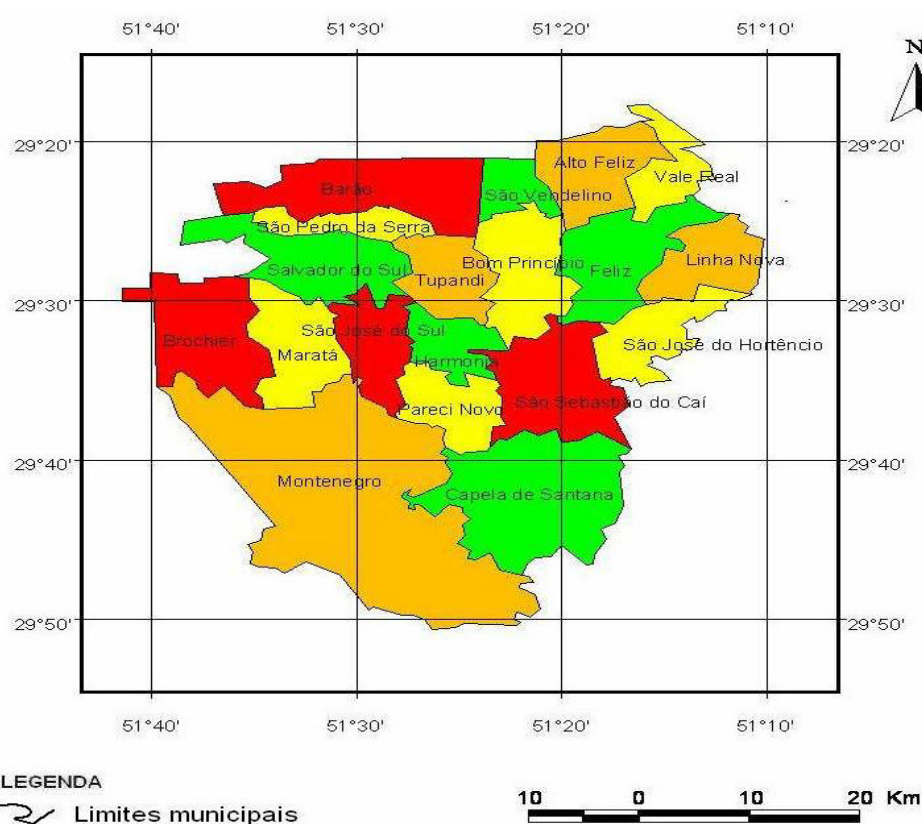


Figure 4: Map of municipalities of the “Vale do Cai”, Rio Grande do Sul (BERTAZZO, 2009)

## **5.2. Research partners**

### **5.2.1. Farmers' organisations of the Nucleo "Vale do Cai"**

Because of personal limitations for field research as a student I chose one Nucleo of the "Ecovida Agroecology"- network, whereas my sampling frame was a list of the registered members. The subpopulation consists of five farmers' organisations, which are organised as associations or cooperatives, but I only interviewed members of four organisations.

The first ecological agricultural fair evolved from the Cooperative "Coolméia" in Porto Alegre, the Capital city of Rio Grande do Sul, in the year 1989. It served as model for other organic fairs in the South and Southeast of Brazil, because the products are directly sold from the producers to the consumers (DREIER, 2010). "Coolméia" always promoted the guarantee of organic quality without certification, mainly from the experience of direct relationship between producers and consumers (MEIRELLES and REBELATTO DOS SANTOS, 2008). The cooperative was closed after some internal differences and external problems, but the association "Agroecologica", which is the part of the Nucleo Vale do Cai today, was founded in the year 2006. The fair still takes place every Saturday on the street "José Bonifácio" and has a very collective character. Every second week during the fair there are meetings for the planning and evaluation of the commission, which is elected by the group of the marketers and has four representatives. This fair is divided in two parts and the second part is called "Acroiris" which is organised by the prefecture. (DREIER, 2010).

The cooperative "Ecocitrus" (Cooperativa dos Citricultores Ecológicos do Vale do Caí) was founded as an association by 15 citrus producers in the year 1994, as an alternative to conventional farming. The idea was using organic instead of chemical fertilizers. Since 1998 it is organized as a cooperative where farmers take part in the entire production chain. Today the cooperative has 110 associates, whereof 61 are farmers (ECOCITRUS, 2012). It successfully produces and sells compost from the compost plant, where local enterprises pay to bring their organic residues as well as juice and essential oils made of citrus fruits are sold in Brazil and exported internationally (BERTAZZO, 2009).

The association "Companheiros da Natureza" (Associação dos Produtores Ecologistas Companheiros da Natureza) started its activities in 1997 with five producers. The principal motive was their preoccupation with the impact of the chemical products on their operations. In 1998 the group was officially recognised as an association. Actually the group has ten members, who produce mainly organic citrus fruits. The members of the association share a building for storing and classifying their citrus fruits and a bus to transport their articles for sale to the farmers' fairs. The majority of the products are sold on farmers' fairs in cities nearby the Vale do Cai and the organisation is divided in two subgroups, which are rotationally responsible for the fairs. The fruits classified with less quality are sold as freshly pressed juice and a part of the fruits is used by one associate as primary material for his organic procession operation "Novo Cirtus" (Novo Citrus Indústria e Comércio Ltda.). The different

products like juices, jams and sweets are sold locally but also in some other states of Brazil (BERTAZZO, 2009).

The cooperative "Ecomorango" (Cooperativa de Produtores de Morango Ecológico de Bom Princípio Ltda.) was officially registered in the year 2000. At the moment it has 24 members, but not all of them are organic family farmers. Two members just continue processing the primary material of the cooperative. The main products sold are different fruits, especially strawberries, vegetables and other annual cultures in the grocery of the cooperative in "Bom Princípio" and on different local farmers' fairs (BERTAZZO, 2009).

In the year 2007 the Cooperative "Ecomorango" had some internal differences and seven associates left the cooperative to build their own association, which they called "Terra Viva". It is also part of the Nucleo "Vale do Cai" and the associates sell their products directly to the consumers in a grocery in the city Caxias do Sul and on some local farmers' fairs (BERTAZZO, 2009).

### **5.2.2. Interview partners**

I chose my interview partners by the chain referral method, snowball technique, which is effective for a small population, where the people are in contact with each other. Through informal conversations with key stakeholders I chose my partners for the interviews which were recommended by these persons (BERNARD, 2006). Furthermore I had a sampling frame for the choice of my interview partners, which was the list of all members registered in the Nucleo "Vale do Cai". This list includes 89 actors registered, where of six actors are juridical persons, more precisely agro-industries or cooperatives and 83 are physical persons, which are the representatives of the organic family farms.

My interview partners (n= 24) were 23 men and one woman, between 30 to 64 years, with an average age of 45 years. Thirteen of all interviewed actors are married, eight are in an informal cohabitation and three are single, whereas no interview partner is divorced or widowed. The average duration of education of the representatives interviewed is 10 years over a range from four to 25 years. All of the representatives have attended primary school, but two haven't completed it. One has a further technical education and eleven have completed secondary school. Five of my interview partners have attended university, but two of the interviewed actors haven't completed it.

On average there are living 4.5 persons on the operations of my interview partners and the labourer working on the production units are on average 4.7 persons whereof on average 1.7 persons are permanent labourer and 2 are partial labourer.

The size of the total area of the operations is on average 19.45 hectares, with a range from 2.5 to 50 hectares and s= 14.11, whereof the productive area is on average 11.61 hectares, with a range from 1.5 to 28 hectares and s= 11.61. Actually 19 of my interview partners have additional organic certification for their products to the certification through the "Ecovida Agroecology" - network.

The productive activities that were my interview partners' source of income in the year 2012 were 88% cultivation of fruits, 33% vegetables and 58% annual cultures, and 8% had animal production.

Moreover the reproduction of seedlings was mentioned by 4% of my partners interviewed and about 13% had organic procession of juice, jams, sweets, soja products, “Sauerkraut” and “Propolis”- products on their production unit. Further income sources, which are not organic products sold, were mentioned by nine respondents, whereof two persons had a part- time employment, which was not linked to the production on their operations. The further respondents had additional income sources like employment inside the cooperative, rural tourism, the sale of wood or conventional pig fattening.

There are various sales channels used for commercialisation of the organic products. The farmers’ fair mentioned by 88% of my respondents, 71% sell organic products as primary material to organic agro-industries, conventional intermediaries are used by 42% of my interview partners and 33% sell to institutionalised markets. Groceries of natural products and other organic intermediaries are each used by 29% and further sales channels like own grocery, grocery of the own group, baskets and bags, markets of other groups inside the “Ecovida”- network, supermarkets and organic restaurants are used by less than 20% of the persons interviewed by me.

All my interview partners belong to groups of commercialisation, whereof nine persons interviewed belong to the association “Companheiros da Natureza”, six partners are affiliated to the association “Agroecologica”, whereof all of these persons have already been members of the before existing cooperative “Coolmeia”. Five of my interview partners are associates of the cooperative “Ecocitrus” and four are members of the Cooperative “Ecomorango”.

Round 88% of my respondents have had production without the input of chemical products before the official formation of the “Ecovida Agroecology”- network in the year 1998.

### **5.3. Data collection**

In the first phase of my combination of qualitative and quantitative empirical research I collected data through literature research according to the topic certification in organic agriculture and especially on Participatory Guarantee Systems. The development of these systems in the southern parts of the global world showed me that PGS are a relatively new topic in Europe but actually in debate. This I observed at my attendance of the “Global Organic Market Access”- Conference in Nürnberg, Germany. Based on literature review, mainly “PGS”- publications about case studies in Brazil and other Latin American countries, I contained my research questions and I defined the variables to measure with their indicators by values.

According to the books about social science of the authors BERNARD (2006) and MAYRING (2002) I did the preparation for the second phase, the field research in the South of Brazil. It started at the 8<sup>th</sup> meeting of the “Ecovida Agroecology”- network in Florianopolis. There I got to know my key informants of the cooperative “Ecocitrus” for getting in contact with my research partners, more precisely the members registered in the Nucleo “Vale do Cair” of the “Ecovida Agroecology”- network.

The local data I collected by attending presentations and content analysis of local information sources, like protocols, documents and concepts, working papers and workshop material of the “Ecovida Agroecology”- network and further scientific publications about this network and other PGS in Brazil.

Furthermore information I gained through informal conversations firstly with researchers, students, and with registered family farmers and staff members of the local farmers’ organisations. Through the informal conversations and the visitation of the production units concerned I got a basic understanding of the local conditions and specifics of organic Agriculture in Rio Grande do Sul.

In the explorative phase of my field research I furthermore applied the research instruments non-participant observation during farm stays and direct participant observation, more precisely continuous monitoring of group meetings and peer reviews. This method delivered me local knowledge about the actors of the PGS initiative in the Nucleo “Vale do Cai”. My direct observation strategy was blatant and reactive, that means people knew that I was watching them (BERNARD 2006). Further participant observation I carried out at the place of commercialisation combined with informal conversations, which gave me a deeper understanding of how the Nucleo was funded and actually works.

Before field research I developed a draft for a questionnaire to measure the socioeconomic status of the members of the PGS in the South of Brazil, their information exchange and their perceptions. This questionnaire I used for semi-structured interviews. Primary I developed it in English and then translated it with the help of a student and staff members of one registered cooperative, into local Portuguese. The perception measurement I did according to (OPPENHEIM, 2004) by a “Likert scale”. The measurement occurred due to predetermined statements in a five- point scale, whereas one had the meaning “I agree a lot”, two meant “I mildly agree”, three denoted “unsure”, four stood for “I mildly disagree” and five expressed “I disagree a lot”.

The statements about the strengths and weaknesses of PGS I adopted from FONSECA (2004) on the proceedings of the workshop “alternative certification systems” in 2004 in Torres, where participants of the workshop were asked about the advantages and disadvantages of PGS. The statements about the opportunities and threats of organic Agriculture I defined and formulated on the base of informal conversations, with the local organic producers in Rio Grande do Sul documented in my research diary.

To test the questionnaire I carried out five pretest- interviews and then I continuously adapted the questionnaire because of misunderstandings and new insights. Finally I carried out the data collection by personal structured interviews, with 24 members of the Nucleo Vale do Cai. My final questionnaire consisted of 35 closed questions with a prepared set of possible replies and 12 open- ended questions. The interviews I carried out at the operations of my interview partners, to make them feel comfortable. Due to the impression that the interviewees felt uncomfortable when recorded, I didn’t record the interviews with a voice recorder. Because of my limited time and the difficulties to reach some of the operations I did five interviews at the place of commercialisation. The duration of my field research in Rio Grande do Sul was nine weeks.

## **5.4. Data storage and analysis**

Local information sources, like publications of local educational institutions I analysed by relevance and stored them as summaries and connecting tables as Microsoft word files. Those files I used as basis for the definition of my variables and the formulation of the statements for perception measurement.

Further local information I gained through informal conversations with organic producers and other local stakeholders involved in the “Ecovida Agroecology”- network. Those conversations I carried out during personal visits of operations, during participation at harvesting work and during participation at the farmers’ fairs. There I gained a more holistic view due to conversations with consumers of organic products and other producers outside the Nucleo “Vale do Cai”. The informal data I documented in my research diary during or shortly after the conversations.

Further notes I took in my research diary concerning the information gained through participant observations during peer reviews of the “Ecovida Agroecology”-network and participant observations of organic producers and consumers at the points of sale. Therefore I noted down all observed specifics and information that may be relevant for further research. This I also did with information gained through non- participant observation at farm walks, carried out before or after the personal interviews. Another important documentation source that I used were pictures taken with a digital camera during my stays on the different production units. The photos I stored at an external hard drive afterwards.

The quantitative data of the closed questions of my structured interviews I stored after field research as variables in a table with the software Microsoft Excel (Microsoft Office Excel 2003) and the qualitative data of the open questions I coded and assigned them to categories in the excel table after field research as well.

The primary descriptive analysis of the data I did with Microsoft excel to get a first survey of my results. Therefore I calculated the arithmetic means of metric data and the frequencies of the metric and nominally scaled data. For testing my hypothesis I did statistical analysis of the quantitative data and the categorised data of the personal interviews with the software SPSS 15.0 for Windows (SPSS Inc., Chicago, Illinois, USA), following KÄHLER (1996).

The data of open and closed questions I mainly analysed with quantitative approaches like the distribution of the frequencies of my interview partners’ answers. The data of perception measurement I conditioned in ordinal scaled statements and my interview partners had to grade them. The negatively formulated statements I converted inversely with SPSS to adjust them to a unique coding system. Then the ranking of the statements (from one to five) I transliterated with SPSS to connote the lower numbers with disagreement and the higher numbers with agreement to equalize the data according to the formulation in my hypotheses.

Due to the fact that the data of statements is not normally distributed, I used the non-parametric Mann-Whitney-U- test for testing the data measured in statements concerning the perceptions of the members of the PGS. I chose Mann- Whitney-U- test, because the only assumption for this statistical test is that the dependent variable is ordinal. My preference of the MWU-test to the Chi-square test has its reason in the fact that it doesn't need an assumption about the distribution of the dependent variable. Furthermore the Chi-square test provides less exact results and it is less suitable for the analysis of my hypothesis, because it leads to a distortion of the results, because of the not fulfilled conditions of an expected value of five or higher for each cell.

The results of MWU-test I analysed for differences in perceptions concerning certification in a PGS by comparing the ranked means between the members of associations and cooperatives. Furthermore I analysed differences in emic variables concerning the perceptions of organic Agriculture between the members, which mentioned that they had organic production before and since the year 1995 (arithmetic mean) and the members that had organic production after the year 1995. These two groups were called more and less experience in organic production.

The level of significance for statistical tests I chose  $\alpha = 0.05$ . Due to the small sample size many results didn't fulfil the conditions for testing my hypothesis with statistical significance, but the analysis of the results can be understood as a tendency, which can be the basis for further research.

So the results of this study provide more exploratory information of quantitative and qualitative data, which is discussed and compared to similar case studies and sociological publications concerning organic Agriculture in developing countries.

## **5.5. Personal approach**

In my master program „organic Agriculture“ I have learned a lot of the benefits that brought about by that farming system with regard to the farmers and all persons involved. But my focus on organic farming in developing countries showed me the problems of exclusion of small scale farmers through the commonly used third party certification. Then I heard about a possible problem solution through Participatory Guarantee Systems, which motivated me to do research in that field.

In 2004 the beginning of this alternative certification system took place in Torres, Brazil and this country also has the first and biggest participatory certification network, called “Ecovida Agroecology”-network. My working experience on industrialised dairy farms in Germany and New Zealand has caused my willingness to support small scale farmers. Furthermore my interest in Brazilian culture through “Capoeira Angola” and a two months' visit two years ago turned out as good preconditions for research in this country. But the enormous dimension of Brazil offers a big variety of culture and language differences, which brought new challenges for me. Additionally I had only got to know organic Agriculture in Brazil through literature research and now I got new impressions of the praxis of organic farming. Further debilities through my lack of knowledge about social sciences, because of my

study focus on natural sciences, I compensated with the attendance of appropriated courses and literature study.

## **5.6. Ethic aspects and challenges**

Due to I had set my focus on natural sciences during my educational path, I was confronted with various methods for designing research in social sciences. The main problem in the science of human behaviour is making the right measurement in terms of ethical legitimacy. It is discussed by philosophers whether a true science of human behaviour is really possible, but the increasing ability of human beings to cause greater environmental impacts, makes science of humanity much more important. Science has to earn its support through producing useful knowledge, at what useful can be defined diversely (BERNARD, 2006).

In my case I accessed the empirical research in Brazil, more as a student who likes to get to know new ideas and to learn from the locals, than a western researcher, who is often prejudged of using an opposed approach of educating the research partners. My motivation for research is influenced by accessing a new perspective of organic agriculture in Brazil and to give organic producers the possibility to express their perceptions, which conducts a win-win situation.

As already mentioned above, the main challenges I faced were a lack of competence in social sciences. In Brazil I had some language difficulties, because of the many different dialects and the technical terms in the agricultural sector. In cultural regards it was supportive that the South of Brazil was greatly influenced by European immigrants in its history. A further challenge during data collection was the attempt to ask respondents to grade prepared answering possibilities towards an item in the questionnaire. This didn't work out successfully probably due to cultural reasons, so I excluded this design of perception measurement from my questionnaire.

In organisational terms I had a lot of support from the "Ecovida Agroecology"- network, in the way that I didn't have problems with accommodation or limitations in access to information. I also had a lot of support in mobility. Mainly I got a ride with locals and some of the operations of my research partners could be reached by public transport. Further challenges I faced during a strike of the public transport in Florianopolis for a few days and the three months strike of the public universities caused some organisational difficulties.

## **6. Results**

### **6.1. Ancestors of the members of the Nucleo "Vale do Cai"**

The members of the Nucleo "Vale do Cai" of the "Ecovida Agroecology"- network were all born in Brazil, but their ancestors have their origins in diverse nations (Figure 5).



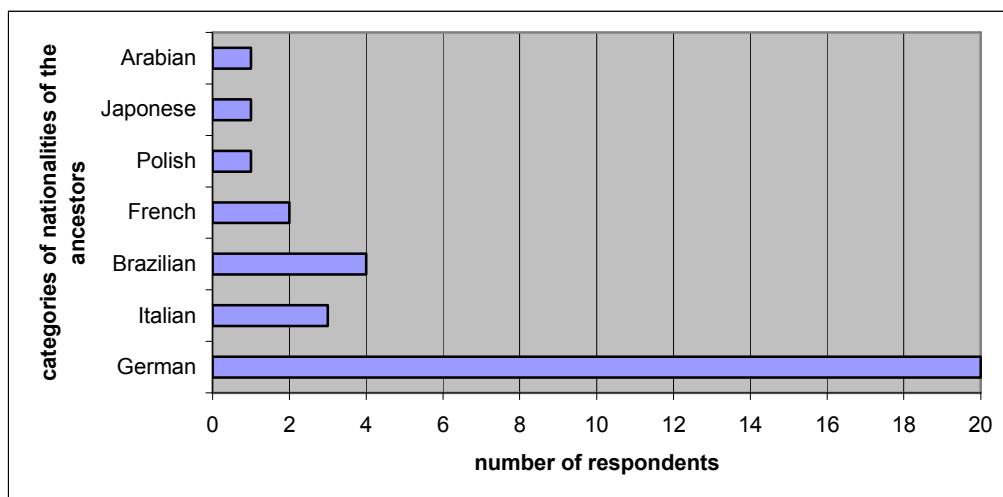


Figure 5: Distribution of the frequencies of the nationalities of the ancestors of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil (n= 24) (closed question with multiple answers)

## 6.2. Information exchange of local agroecological knowledge

The most important place to learn new things about organic Agriculture responded by the members of the Nucleo “Vale do Cai” were operations of other organic producers (Figure 6).

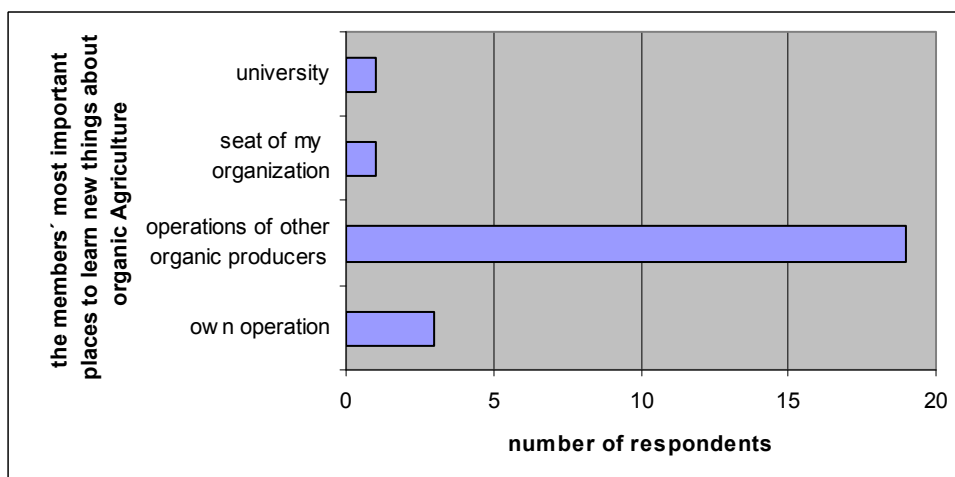


Figure 6: Frequency of the most important place for learning new things about organic agriculture responded by the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil (n=24) (closed question with multiple answers)

The most frequent reason for choosing operations of other organic producers was to see other ideas of organic cultivation (Figure 7).

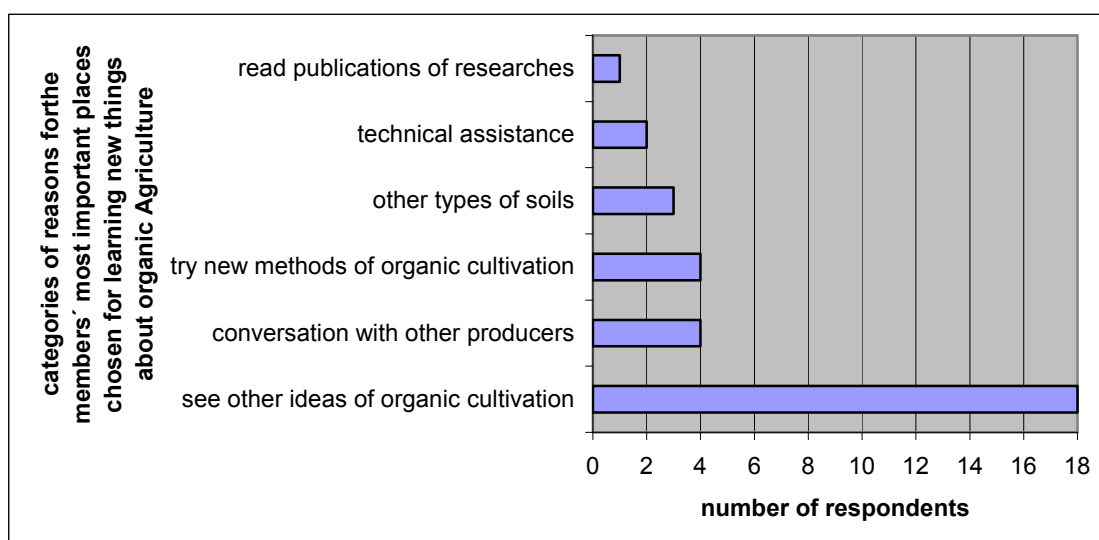


Figure 7: Frequency of categorised reasons of the choice of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil concerning the most important place for learning new things about organic Agriculture (n=24) (open question)

### 6.3. Perceptions of the members related to PGS and organic Agriculture

#### 6.3.1. Principles of a PGS

Three of five principles, namely “participation”, “shared vision” and “confidence” were evaluated as higher in associations. The principles “transparency” and “equality in decision making” were seen as higher in cooperatives.

Table 2: Means and results of the MWU-test of the principles of PGS by the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil organised in associations (n=15) and cooperatives (n=9) (grade 1 “very low” and 4 “very high”)

principles of a PGS	association mean	cooperative mean	association mean rank	cooperative mean rank	statistical test Mann-Whitney-U-Test
participation	3,27	2,89	14.0	10	U= 45, p= 0.097
shared vision	3,47	3,22	13.6	10.67	U= 51, p= 0.225
transparency	3,40	3,44	12.23	12.94	U= 63.5, p= 0.473
equality in decision making	2,93	3,22	11.77	13.72	U= 56.5, p= 0.286
confidence	3,40	3,22	13.2	11.33	U= 57, p= 0.288

### 6.3.2. Strengths of PGS

The variables “easier assess for small producers to a quality assurance system”, “low direct costs to farmers”, “raises the farmers’ reputation” and “less documentation and bureaucracy” were perceived as more positively by the members of associations. “Greater ownership and responsibility” is rated equally in both types of farmers’ organisations and the strengths “decentralised power” and “local development-base adapted to local social cultures” are evaluated as higher in cooperatives.

Table 3: Means and results of MWU- test of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil organised in associations (n=15) and cooperatives (n=9) concerning the strengths of PGS (1- “disagree a lot”, 5- “agree a lot”)

variable	association mean	cooperative mean	association mean rank	cooperative mean rank	statistical test Mann-Whitney- U-Test
stronger relationships between producers and consumers	4,33	4,22	12.47	12.56	U= 67, p= 1
easier assess for small producers to a quality assurance system	2,27	1,33	13.9	10.17	U= 46.5, p= 0,215
low direct costs to farmers	2,40	2,00	12.57	12.39	U= 66.5, p= 0.953
raises farmers’ reputation	4,47	4,56	12.57	12.39	U= 66.5, p= 0.953
greater ownership and responsibility	5,00	5,00	12.5	12.5	U= 67.5, p= 1
decentralised power	4,20	4,44	11.53	14.11	U= 53, p= 0.411
local development-base adapted to local social cultures	4,87	4,67	12.47	12.56	U= 67, p= 1
less documentation and bureaucracy	3,47	2,56	13.8	10.32	U= 48, p= 0.263

### 6.3.3. Weaknesses of PGS

The variables “requires a lot of voluntary work” and “requires more meetings to establish social control”, “difficult to develop a group with low self-esteem” and “lack of global recognition” are

perceived as more negatively by the members organised in associations. While the variables “high degree of dedication from stakeholders”, “complex social organisation” and “conflict of interests” were evaluated as more negatively by the members’ part of cooperatives.

Table 4: Means and results of MWU- test of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil organised in associations (n=15) and cooperatives (n=9) concerning the weaknesses of PGS (1- “disagree a lot”, 5- “agree a lot”)

variable	association mean	cooperative mean	association mean rank	cooperative mean rank	statistical test Mann-Whitney-U-Test
high degree of dedication from stakeholders	5,00	4,89	13	11.67	U= 60, p= 0.682
requires a lot of voluntary work	4,40	4,89	11.73	13.78	U= 56, p= 0.519
difficult to develop a group with low self-esteem	1,07	1,11	12.3	12.83	U= 64.5, p= 0.861
requires more meetings to establish social control	4,20	4,33	11.67	13.89	U=55, p= 0.482
complex social organisation	3,33	3,11	12.87	11.89	U= 62, p= 0.77
conflict of interests	2,20	1,67	12.77	12.06	U= 63.5, p= 0.815
lack of global recognition	1,13	1,56	11.03	14.94	U= 45.5, p= 0.194

#### 6.3.4. Opportunities of organic Agriculture

The opportunity of “environmental protection” was seen as more positively by the members with more organic experience. “Sustainability” was evaluated equally and the variables “secure sales market”, “Brazilian organic legislation”, “financial support” and “new organic markets” are seen as more positive by the members with less experience in organic production.

Table 5: Means and results of MWU- test of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil with more organic experience (n=13) and less organic experience (n=11) concerning the opportunities of organic Agriculture

variable	more experience mean	less experience mean	more experience mean rank	less experience mean rank	statistical test Mann-Whitney-U-Test
secure sales market	1,07	1,00	12.08	13	U= 66, p= 0.776
environmental protection	1,00	1,11	13	11.91	U= 65, p= 0.733
sustainability	1,00	1,00	12.5	12.5	U= 71.5, p= 1
Brazilian organic legislation	2,13	1,89	11.31	13.91	U= 56, p= 0.392
financial support	2,47	2,00	11.19	14.05	U= 54.5, p= 0.331
new organic markets	1,47	1,11	10.96	14.32	U= 51.5, p= 0.252

### 6.3.5. Threats of organic Agriculture

The threats of organic agriculture with regard to the “appearance of pests and diseases” and “genetically modified organisms” were seen as more negatively by the members with less organic experience. While the variables “toxic contamination of neighbouring areas”, “natural disasters”, “climate catastrophes” and “lack of organic seeds” were perceived as more negatively by the members with more organic experience.

Table 6: Means and results of MWU- test of the members of the “Ecovida Agroecology”- network in the Vale do Cai, Rio Grande do Sul, Brazil with more organic experience (n=13) and less organic experience (n=11) concerning the threats of organic Agriculture (1- “disagree a lot”, 5- “agree a lot”)

variable	more experience mean	less experience mean	more experience mean rank	less experience mean rank	statistical test Mann-Whitney-U-Test
toxic contamination	2,53	2,11	11.54	13.64	U= 59, p= 0,494
pests and diseases	2,13	3,11	12.73	12.23	U= 68.5, p= 0.865
natural disasters	3,53	3,67	11.65	13.5	U= 60.5, p= 0.531
climate catastrophes	4,00	4,00	11.46	13.73	U= 58, p= 0.459
lack of organic seeds	4,67	4,78	11.38	13.82	U= 57, p= 0.424
Genetically modified organisms	2,53	1,78	13.5	11.32	U= 58.5, p= 0.459

## 7. Discussion

### 7.1. Ancestors of the members of the Nucleo “Vale do Cai”

H1: In a PGS in the south of Brazil are more members with Brazilian ancestors participating than members with non-Brazilian ancestors.

This hypothesis has to be rejected. Although all my interview partners were born in Brazil, only three of 24 respondents mentioned that they have Brazilian ancestors. The absolute majority, with twenty of my interview partners have German ancestors. Further nationalities mentioned by the members of the Nucleo “Vale do Cai” interviewed were Italian, Arabian, French, Japanese and Polish. This might be explained with the history of colonisation of the State Rio Grande do Sul in the 19<sup>th</sup> century, when the Brazilian government sold cheap land to immigrants. In the Vale do Cai mainly German agriculturists settled (IBGE, 2010).

BERTAZZO, (2009) identifies the cultural composition of the region as a support for the transformation of the conventional agrarian system to organic production. He explains this phenomenon by the ancestral knowledge passed down through generations as cultural heritage of the immigrants, who did not use the modern agrochemicals. On the base of natural farming practices with observation and respect to natural cycles, knowledge was passed on to different generations which made a sustained agriculture possible.

Furthermore the idea of “Agroecology” was enhanced in this region by the agronomist Jose Lutzenberger, who also had German ancestors and who tried to influence environmentalists and farmers’ groups, often supported by NGOs and the Catholic Church, towards an alternative agriculture in the 1980s. In this time he started practising and teaching organic agriculture (BELLON et al., 2009). One of his students was called Paulo Lenhardt, who was leading supporter of the organic movement in the Vale do Cai, as he was a co-founder of the Cooperative “Ecocitrus” and the NGO “INCA”, which was involved in the foundation of the Nucleo “Vale do Cai” (informal conversation, 2012). Another important name mentioned by many members of the Cooperative “Ecocitrus” was the German Uwe Krappitz who was a co-founder of this organic farmers’ organisation within a project of the GTZ (Organization for Development of the German government) (KUSSLER, 2012, pers. comm., 09 June). Although the organic movement was technically and financially influenced by many Germans in this area I didn’t observe the setting of structures of dependence to Brazilian organic producers by the western world. But the “Ecovida Agroecology”- network empathized from its foundation on respect for local environment and local culture, solidarity and local knowledge as fundamental for sustainable farming (MEIRELLES and REBELATTO DOS SANTOS, 2008). I observed the adherence of these ethical paradigms and actually there are only local actors involved in the Nucleo “Vale do Cai”. However, the key stakeholder for certification is an employee of the Cooperative “Ecocitrus” and actually there is no local NGO involved in the organic certification process (KUSSLER, 2012, pers. comm., 09 June).

## **7.2. Information exchange of local agroecological knowledge**

H2: Informal information exchange between the members of a PGS is a more important learning source concerning local agroecological knowledge for the members of a PGS than formal information exchange with extension services.

This hypothesis can be confirmed, because the majority of the actors interviewed of the Nucleo “Vale do Cai” chose as most important place for learning new things about organic agriculture the category “operations of other organic producers”, mainly because of “seeing other ideas of organic production”.

The process of guarantee contributes to the construction of knowledge with all the actors involved in the production and consumption of the organic products and PGS intent to provide the tools and mechanisms for supporting sustainable community and organic development to enhance the livelihoods and status of producers (MEIRELLES and REBELATTO DOS SANTOS, 2008). Therefore the construction of knowledge has an importance for organic producers, and also for the development of credibility concerning the consumers (ECOVIDA, 2004). Although the “Ecovida Agroecology”- network promotes the participation of diverse actors in the process of constructing local agroecological knowledge, the members of the Nucleo “Vale do Cai” prefer information exchange with peers.

This is confirmed by KROMA (2006), where she describes organic farmers as experimenters in their farming, who see their farming networks as an interactive learning space of co-learners and teachers discussing about their individual experiences. That’s why agricultural extension needs to effectively bring farmers and researchers together in partnerships for applied, problem focused research and it requires extension approaches that facilitate critical learning and negotiation among diverse stakeholders (KROMA, 2006), like the institutional supporters of the concept of “Agroecology” in Brazil, that promote a more holistic and system approach through experiential learning strategies, like participatory and on-farm approaches (BELLON et al. 2009).

The devaluation of local knowledge in recent years through the implementation of Western-based educational curricula and formal schooling in third world countries is actually changing (RUDDLE, 2000) through the implementation of organic networks, which are institutional innovations for the development of local knowledge (KROMA, 2006). These networks can be understood as system of power in community-based resource management in developing communities, where local knowledge is extremely relevant, because it is organising the rural poor (RUDDLE, 2000).

## **7.3. Perceptions of the members related to PGS**

H3: The members of a PGS affiliated to an association evaluate the principles of a PGS as higher inside their organisation, than the members of a PGS affiliated to a cooperative.

There is no statistically significant correlation between the form of organisation of the members of the PGS and the evaluation of the principles of PGS. But the analysis of the mean ranks of the principles

shows that there is a tendency of a higher evaluation of the members organised in associations than organised in cooperatives.

Three of five principles “participation”, “shared vision” and “confidence” were evaluated as higher by the members of associations than the members of cooperatives, while “transparency” and “equality in decision making” were graded as higher by the members of cooperatives.

The idea of “participation” embodies the principle of a collective responsibility for ensuring the organic integrity of the PGS (MAY, 2008). Ideally also consumers participate actively in decision making and management and not only buying products, although consumers and producers have complementary interests. In the “Ecovida Agroecology”- network the consumers have the possibility to become members of the ethical committee, that monitors the activities of the PGS, including the inspection process (MAY, 2008). Although there is the possibility for participation of diverse actors in the PGS, I observed a very low participation of consumers and other stakeholders in all farmers’ organisations of the Nucleo “Vale do Cai”.

“Transparency” is created through the awareness of how the guarantee system works by all stakeholders. This includes the basic understanding of the standards, the norms of the organic guarantee process and how decisions are made (MAY, 2008). This implies the availability of written documents about the PGS to all interested parties (MEIRELLES, 2010). The development of transparency happens through the active participation of the producers in the decision making, at internal inspections and furthermore through information sharing (MAY, 2008).

A “shared vision” refers to the collective support of the core principles guiding production standards and the rules of how the PGS operates by all key stakeholders and stakeholders from the “Ecovida”- network empathize the importance that this vision is articulated and agreed in a participatory development process. The development of a shared vision by key stakeholders and the collectively continuation of shaping and reinforcing the vision through the PGS should result in the building of the principle “confidence” (MAY, 2008). Moreover PGS promote the principle of “horizontality”, which means equality in decision making (MEIRELLES and REBELATTO DOS SANTOS, 2008) and refers to a non-hierarchical, but democratic structure and collective responsibility (MAY, 2008).

H4: The members of a PGS affiliated to an association perceive the strengths of a PGS more positively than the members of a PGS affiliated to a cooperative.

This hypothesis can’t be confirmed statistically, because the Mann-Whitney-U-Test doesn’t provide statistically significant results. But there can be observed a tendency of a more positive perception of the members affiliated to an association than the members of a cooperative. The members of associations have higher values for four variables, one variable was rated equally and three variables were perceived as higher in cooperatives than in associations.

The variables “easier assess for small producers to a quality assurance system”, “low direct costs to farmers”, “raises the farmers’ reputation” and “less documentation and bureaucracy” show the



tendency of being perceived as more positively by members of associations than cooperatives, while the strengths “decentralised power” and “local development-base adapted to local social cultures” tend to be perceived as more negatively by the members of associations than cooperatives. “Greater ownership and responsibility” was rated equally in both types of farmers’ organisations.

Farmers’ organisations offer a way for smallholders to participate in the market more effectively, through collective action to reduce barriers in market access. Due to smallholders in a PGS affiliated to a group, they profit from collective action amongst others, in for example marketing activities. These marketing activities are mainly influenced by group characteristics, like internal cohesion of the farmers’ organisations. But small groups often have a higher internal cohesion than groups with many associates because it is easier to know and monitor other members (MARKELOVA et al. 2009). The associations of the Nucleo “Vale do Cai” have fewer members than the cooperatives of this Nucleo.

The variable “raises farmers’ reputation” also tends to be perceived as higher by members of associations than cooperatives and the variable “stronger communication and long term relationships between producers and consumers” is rated higher by the members of cooperatives than associations. BLANC and KLEDAL (2012) describe the actual organic food sector in Brazil as sector with an increased scope and density in the relationships of farmers with the cities during the last decades, where smallholders are more and more included in the consumer society. Also KROMA (2006) reports on the re-establishment of agriculture’s relationship with its rural context and communities as there arise synergistic and positive effects when the relationship between farm and surrounding rural communities is strong.

The variable “less documentation and bureaucracy” was also evaluated higher inside the associations than in cooperatives, which might be explained by the tendency of an easier organisation of associations, because they include fewer members (MARKELOVA et al. 2009). The direct involvement of the producers allows PGS programs to be less onerous in terms of paperwork and record-keeping requirements (MEIRELLES and REBELATTO DOS SANTOS, 2008). But although there is less bureaucracy, producers are busy people and often reluctant to complete paper work (MAY, 2008).

The increase of “local ownership and responsibility” in control and certification procedures would help to increase identification of the actors in organic production and decrease the risk of fraud (VOGL et al. 2005).

The strengths of “decentralised power” and “local development-base adapted to local social cultures” are perceived as more positive by the members of cooperatives than associations, which might reflect the central problem of PGS, which is a lack of material resources and human capital (HOCHREITER, 2012). From my perspective the cooperatives of the Nucleo “Vale do Cai” had more capacities than the associations.

H5: The members of a PGS affiliated to an association perceive the weaknesses of a PGS more negatively than the members of a PGS affiliated to a cooperative.

This hypothesis can't be confirmed statistically as well because there is no significant difference between the ranked means of the variables evaluated by the members organized in associations and cooperatives. But there is a tendency of four out of seven variables perceived as more negatively in associations than in cooperatives.

The weaknesses "require a lot of voluntary work" and "more meetings to establish social control", "difficult to develop a group with low self-esteem" and "lack of global recognition" were perceived as more negatively by the members organised in associations than in cooperatives. While the variables "high degree of dedication from stakeholders", "complex social organisation" and "conflict of interests" were evaluated as more negatively by the members in cooperatives than in associations.

Building up social ties and participative decision-making may be interpreted as strengths for some farmers, but may indeed be experienced as weaknesses for others. This means that a strong adherence to the ideology and values inherent in the food system is needed to enable farmers to experience their participation as positive (BLANC and KLEDAL, 2012).

The different variables "require of a lot of voluntary work", "more meetings to establish social control", "high degree of dedication from stakeholders" and "complex social organisation" are described as weaknesses (FONSECA, 2004) mainly resulting in temporal limitations for the members of the "Ecovida Agroecology"- network. But the problem described by BLANC and KLEDAL (2012) is more about the balance and 'trade off' between the huge amount of time farmers invest in coordination and exchange practices within the food system and the income the farmers receive in return.

It might be "difficult to develop a farmers' organisations with high self-esteem", but from my perspective the majority of my interview partners perceive their farmers' organisation as presentable, maybe because they have been established for some years.

The weakness "lack of global recognition" affects mainly producers that tend to sell their products abroad. In Brazil the organic export market was historically the first to drive big growth, with Europe, North America and Japan as the main markets. But actually the organic exports have been reduced, but today still 60% of the organic production is still being exported, whereof in economic terms smallholders only make up a limited part of these exports (BLANC and KLEDAL, 2012).

Although the inclusion of diverse actors in the certification process tends to cause "conflicts of interests" inside the farmers organisations, many interview partners didn't perceive the discussions inside their groups as a weakness because of different interests. Also Ron Khosla a stakeholder from the "Ecovida Agroecology"- network mentioned *"One big strength is that we didn't give up on trying to include as many people as possible in the discussion..."* (MAY, 2008).

#### **7.4. Perceptions of the members related to organic Agriculture**

H6: The members of a PGS with more experience in organic production have a more positive perception of the opportunities of organic Agriculture than the members of a PGS with less experience in organic production.

This hypothesis has to be rejected because there is no statistically significant difference between the ranked means of the members with organic production before and after the year 1995. Furthermore there is an opposite tendency of the members with less organic experience having a more positive perception about the opportunities of organic Agriculture than the members with more organic experience.

The opportunity of “environmental protection” was seen as more positively by the members with more organic experience than the ones with less organic experience. The variable sustainability was evaluated equally in both groups. The opportunities “secure sales market”, “Brazilian organic legislation”, “financial support” and “new organic markets” were seen as more positively by the members with less experience than the members with more experience in organic production.

The variables “environmental protection” and “sustainability” may be a result of reliability generated by a wide process that begins within the conscience of each producer not to destroy the nature and the philosophy to spread the idea of “Agroecology” to neighbours and friends which is referred to in the Training Manual of the “Ecovida Agroecology”- network (ECOVIDA, 2004).

In the Brazilian “Ecovida Agroecology”- network a strong motivation for the development of a PGS, rooted in the idea of social justice for the rural poor by providing access to markets (MAY, 2008), and to reduce dependencies on intermediate agents. Because in Brazil basic food has always been at a low price so far that’s why producers face difficulties in achieving an equitable price (BERTONCELLO and BELLON, 2008). Also BLANC and KLEDAL (2012) report from the potential of organic farming to provide smallholders with access to markets with higher profitability.

The Brazilian organic legislation tries to support small scale organic producers (BERTONCELLO and BELLON, 2008) as a strong civil society in Brazil has drawn a legislation beyond a simple matter of trade and business standards and rather far into a development mechanism seeing organic agriculture as an integrated part of sustainable future for rural and urban people (FONSECA et al. 2008).

Further political support for small scale organic farmers arose from the aiming of the development of Agroecology by public policies. It has only been a recent phenomenon in the southern region of Brazil. The first specific programmes were promoted by the federal and state governments in the support of transition to Agroecology and to strengthen family– run farming appeared in the last few years. Examples of these programmes are “PANPA”, which aimed at improving fair and exhibition infrastructure, publication of dissemination material, market surveys and research work or the programme “Rio Grande Ecológico” through which training courses and property restructurings were organised (URIARTT et al. 2009). A further political support program “Zero Hunger” is a food purchase program, which is not specifically orientated to organics, but has invested lot of money in organic production from 2003 on. For the program Municipal and State agencies purchase products from smallholders with a 30% premium above a reference price set on the basis of local and regional market prices and distribute them to institutional entities, like schools and hospitals (BLANC and KLEDAL, 2012).

Although there are no specific subsidies for organic producers in the conversion period (BLANC and KLEDAL, 2012) my interview partners seem to be satisfied with the financial support in organic production. Although organic producers faced structural barriers to access credit (BLANC and KLEDAL, 2012) as many of my interview partners reported to me, but actually the offer of financial support programs is rising (KUSSLER, 2012, pers. comm., 09 June).

One further opportunity of organic Agriculture is the emerging of “new markets for organic products”. In the “New Industrialized Countries of the South”, like Brazil, an important expansion of the organic domestic market happened recently. Growing contingents of smallholders are joining the organic production (BLANC and KLEDAL, 2012).

H7: The members of a PGS with less experience in organic production have a more negative perception about the threats of organic Agriculture than the members of a PGS with more experience in organic production.

This hypothesis has to be rejected as well, because there is no statistically significant difference between ranked means of the members with organic production before and after the year 1995. Further there is a tendency of a more negative perception of the threats of organic Agriculture by the members with more organic experience than the members with less organic experience.

The threats of organic agriculture with regard to the appearance of “pests and diseases” and “genetically modified organisms” were seen as more negatively, while “toxic contamination of neighbouring areas”, “natural disasters”, “climate catastrophes” and “lack of organic seeds” were perceived as more positively by the members with less organic experience than the members with more organic experience.

Due to KROMA, (2006) especially perceptions of risk are deterrent to action. However the threats of organic Agriculture defined by local organic producers all concern environmental issues affecting organic production. This might reflect the findings of PANNEERSELVAM et al. (2011), who found out in his study on the perception of organic producers in India, that the farmers were more concerned about production barriers than market or institutional barriers.

The opposite tendency of my assumptions might be explained by the fact that not only the duration of experience in organic production, but many diverse variables influencing an individuals’ perception PANNEERSELVAM et al. (2011) and the environmental issues affecting organic production can differ a lot among the location of the operations and farm specific factors, like the kind of production.

However the members of the Nucleo “Vale do Cai” are actually confronted with the variable “temperature extremes”. During my field research in the “Vale do Cai” the producers of citrus fruits, suffered from for this region extraordinarily low temperatures, which made the mature citrus fruits fall down from the trees, shortly before the harvest. The losses of this years’ citrus harvest accounted up to 60% for some producers, which lead to a proclamation of the state of emergency of the citrus producers of the “Vale do Cai” (BUTTENBENDER, 2012 pers. comm., 19 of June).

The threat “lack of organic seeds” is concordant with the findings of HOCHREITER (2012, p. 125) in Mexico. My interview partners reported that they have to buy organic seeds and seedlings from neighbouring countries which often don’t have the expected quality (SCHMITZ, 2012 pers. comm. 14 of June).

Apart from the small sample size, the contrary results of the perception measurement concerning organic agriculture may not be influenced as expected by the duration of experience in organic production, because of the fact that many of my interview partners produced “organic by default” before they were certified. According to the findings of IFAD (2002) smallholders find the shift to organic production relatively easy, because they only have to introduce marginal improvements to the technologies they already apply.

## **8. Conclusion and perspectives**

The Nucleo “Vale do Cai” of the “Ecovida Agroecology”- network is influenced by many Europeans, especially by Germans, but this can be explained by the history of colonisation of Rio Grande do Sul and the participation of Germans in the implementation process of this network in Brazil. From my point of view these stakeholders of the organic movement in the South of Brazil pursue the aim of empowerment of the locals rather than the development of dependencies of rural Brazilians to the global West. This philosophy of giving priority to local organizations and initiatives, through the valorisation of the particularities and local capacities is also written down in the Training Manual (ECOVIDA, 2004).

Although the importance of participation of diverse actors and the implementation of learning processes in the PGS is promoted by the “Ecovida Agroecology”- network, I observed the implementation of these principles as challenging. The principle “participation” might be perceived as positively by many of my interview partners, but in the Nucleo “Vale do Cai” I observed a very low participation of consumers in the certification process. This might reflect the consumers’ priority of convenient consumption of products, with a label that gives them the certainty that it is produced according to defined standards (IFAD, 2002) rather than active involvement.

This low participation of diverse actors is also mentioned in the findings of other studies about PGS (MAY 2008; MEIRELLES and REBELATTO DOS SANTOS, 2008; HOCHREITER, 2012). The implementation of democratic and participatory structures seems to be challenging in Rio Grande do Sul as well, although this region has a long tradition of participation of civil society in politics (FONSECA, 2004).

Concerning the learning processes for organic producers I didn’t observe the involvement of institutional extension services for the members of the Nucleo “Vale do Cai” during my field research although there is the need of grassroots organisations, governments and research institutions in the support of small scale farmers (PANNEERSELVAM et al. 2011). Additionally I observed the absence of a supporting NGO in the Nucleo “Vale do Cai”, although NGOs have played the most influential role

when organic Agriculture in Latin America started. They promoted these models of production and supported small farmers' organisations in the adoption of organic methods of production and in selling organic products (IFAD, 2002). The termination of the NGOs' involvement in the Nucleo "Vale do Cai" was caused by internal conflicts. Although the cooperative "Ecocitrus" has developed more according to the law of growth of the modern system of economy than in direction of preventing the traditional principles of the organic movement, this cooperative provides the main capacities for organic research and educational processes for the producers in the Nucleo "Vale do Cai". Furthermore this cooperative has staff to coordinate the certification of this Nucleo.

However my interview partners responded that for them the most important learning source concerning organic Agriculture is by informal exchange with peers at the operations of other organic producers. This confirms the findings of RUDDLE (2000) that local knowledge has big practical value, as it is usually unwritten. Therefore I support his suggestion that educational institutions should offer courses on local knowledge, especially because this knowledge is eroded in the current time.

The perception measurement of the members of the Nucleo "Vale do Cai" didn't result in statistically significant correlation for the variables "kind of farmers' organisation" or the variable "duration of organic experience", but tendencies can be observed. However my interview partners' variance of perceptions concerning certification in a PGS and organic Agriculture may reflect that there are diverse variables influencing the individuals' perceptions.

From my point of view the idea of social learning in a network has a great potential for the transmission of knowledge with practical relevance for the producers and the potential of acquiring conventional producers to shift towards organic Agriculture. Due to the way of how farmers perceive their livelihood is amongst others influenced by individual cognition, which is shaped by the social context (BINDER and SCHÖLL, 2009). This has to be considered by the local and global authorities that are responsible for the design of the framework of organic certification, to keep up these farming systems as beneficial for scale organic farmers.

## 9. Abstract

Globally, organic Agriculture is characterised by the increasing certified organic production in the countries of the South and East. The small structured farms that dominate the organic production in these regions are often excluded from the organic market, because of e.g. the high costs of the normally used third party certification. To improve their organic market access Participatory Guarantee Systems (PGS) were developed in Brazil. Thus Brazil became a pioneering country in terms of equal recognition of these two certification systems.

The aims of this thesis are to find out whether there are only local actors or also Non-Brazilian actors involved in the PGS. Furthermore the most important information source concerning local agroecological knowledge and the perceptions of the members of the PGS concerning the principles, strengths and weaknesses of certification in a PGS, as well as the opportunities and threats of organic Agriculture should be explored. My research methods used are participant observation and personal structured interviews with 24 representatives of organic operations of the “Ecovida Agroecology”-network in the “Vale do Cai”, Rio Grande do Sul, Brazil from June to August 2012.

The results show an influence of German decedents in the Nucleo “Vale do Cai”. The informal information exchange of local agroecological knowledge between peers is the most important learning source concerning knowledge about organic agriculture for the members of this PGS. The results don’t show statistically significant correlation between the variables “kind of farmers’ organisation” and “perceptions about certification in a PGS” and also for the “duration of organic experience” of the interview partners and “the perceptions concerning organic agriculture”. This might reflect the influence of additional variables on the individuals’ perceptions, which weren’t investigated. However certification and social learning in a network has a great potential for the improvement of the principle of fairness in organic Agriculture.

## 10. Resumo

A agricultura orgânica global está caracterizado pelo um aumento de produção orgânica certificada nos países do Sul e do Leste. Mas as pequenas propriedades estruturadas, nos quais são predominantes nessas regiões, são frequentemente excluídos do mercado orgânico global, por causa entre outras dos altos custos de certificação por auditoria. Para diminuir essas barreiras os Sistemas Participativos de Garantia (SPG) foram desenvolvidos no Brasil. Esse país é o pioneiro no que respeita o reconhecimento desse sistema de certificação.

Os objetivos da pesquisa nessa tese, são de descobrir se os SPG(s) tem só pessoas locais envolvidos. Além disso, a fonte de informação mais importante do saber agroecológico local para os membros de SPG e as percepções desses sócios no que respeita os princípios, das forças, as fraquezas dos SPG(s) são explorados, assim como as percepções das oportunidades e dos obstáculos da agricultura orgânica. Os métodos de pesquisa usados são entrevistas estruturadas com 24 representantes das propriedades orgânicas familiares da “Rede Ecovida de Agroecologia” do “Vale do Cai”, Rio Grande do Sul, Brasil, no período de Junho a Agosto 2012.

Os resultados mostram a influencia da descendência Alemã no núcleo “Vale do Cai”. O o canal das informações de saber agroecológico local entre iguais e o fonte de informação mais importante pela produção orgânica para os sócios desse SPG. Os resultados da mediação dos percepções dos sócios não ilustram distinções estatísticas significantes entre as variáveis “forma de organização dos produtores” e “as percepções no que respeita a certificação em SPG(s)”, assim como as variáveis “tempo da experiência na produção organica” e “as percepções no que respeita da agricultura organica”. Isso refleti a influência das variáveis diversas nas percepções dos indivíduos, que não foram explorados. Então a certificação e o aprendizado social numa rede tem muita potência para a avançamento do princípio da lealdade na agricultura organica.



## 11. Zusammenfassung

Der globale Biolandbau zeigt derzeit eine steigende Anzahl von biologisch wirtschaftenden Betrieben und eine Zunahme der Bio- Flächen in den Ländern des Südens und des Ostens. Die klein strukturierten Betriebe, die in diesen Regionen dominierend sind, sind unter anderem wegen der hohen Kosten der Zertifizierung durch Dritte vom Zugang zum Bio-Markt ausgeschlossen. Um ihren Zugang zum Bio-Markt zu verbessern wurden in Brasilien „Partizipative Garantiesysteme“ (PGS) entwickelt. Dieses Land ist ein Pionier, was die rechtliche Anerkennung dieses Zertifizierungssystems betrifft.

Die Ziele dieser Masterarbeit sind es herauszufinden, ob in einem PGS nur lokale Akteure involviert sind. Es sollen die wichtigste Quelle von lokalem agrarökologischem Wissen in einem PGS, sowie die Wahrnehmungen der PGS- Mitglieder betreffend der Prinzipien, Stärken und Schwächen der Zertifizierung in einem PGS identifiziert werden. Weiters sollen die Chancen und Hindernisse des Biolandbaus aus der Sicht der Mitglieder charakterisiert werden. Meine verwendeten Forschungsmethoden sind teilnehmende Beobachtung und persönliche strukturierte Interviews mit 24 Repräsentanten vom „Ecovida Agroecology“- Netzwerk in „Vale do Cai“, Rio Grande do Sul, Brasilien, die im Zeitraum von Juni bis August 2012 durchgeführt wurden.

Die Ergebnisse zeigen den Einfluss von Mitgliedern Deutscher Herkunft im Nucleo „Vale do Cai“. Der informelle Austausch von lokalem agrarökologischem Wissen zwischen den Produzenten ist die wichtigste Informationsquelle für Wissen über Biolandbau für die PGS- Mitglieder. Die Ergebnisse zeigen keine statistisch signifikanten Zusammenhänge zwischen den Variablen „Art der Organisation der Produzenten“ und „Wahrnehmung der Zertifizierung in einem PGS“ und ebenso nicht für die „Dauer der Erfahrung in Bioproduktion“ der Befragten und den „Wahrnehmungen betreffend Biolandbau“. Dies reflektiert den Einfluss von zusätzlichen Variablen auf die Wahrnehmungen von Individuen, die jedoch nicht untersucht wurden. Die Zertifizierung und soziales Lernen in einem sozialen Netzwerk haben großes Potential für die Verbesserung des Prinzips Fairness im Biolandbau.

## 12. Indexes

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## 15. Appendix- Questionnaire

Questionnaire: Organic Participatory Guarantee Systems      DATE\_\_\_\_\_

1. Registered member of the Nucleo Vale do Cai

1.1 Name \_\_\_\_\_ Code \_\_\_\_\_

2. Location of the operation:

2.1 Municipality \_\_\_\_\_

2.2. Locality \_\_\_\_\_

3.1 Name of the group participating in the Ecovida Network:

\_\_\_\_\_

4. Type of group:

4.2 ☐ association

4.3 ☐ cooperative

5. Which is your position in your group? (Please tick the appropriate box)

5.1 ☐ president

5.2 ☐ directorate

5.3 ☐ treasurer

5.4 ☐ secretary (ATA)

5.5 ☐ supervisory board

5.6 ☐ educational board

5.7 ☐ other \_\_\_\_\_

6. Which is your position in the “Nucleo Vale do Cair”? (more possibilities)

6.1 ☐ representative of the family

6.2 ☐ etical commission

7. Production unit certified by the Ecovida network:

7.1 ☐ operation

7.2 ☐ organic processor

Production:

8. Which productive activities of your operation are your sources of income?

8.1 ☐ production of vegetables

8.2 ☐ production of fruits

8.3 ☐ animal production: \_\_\_\_\_

8.4 ☐ processing: \_\_\_\_\_

8.5 ☐ annual culture

8.6 ☐ other: \_\_\_\_\_

9. Do you have further income sources on your operation, which are not organic products sold?

9.1 ☐ Yes

9.2 ☐ No

10. If Yes: Which are the further income sources?

10.1 ☐ employment inside the cooperative

10.3 ☐ rural tourism

10.2 ☐ full time employment outside the cooperative

10.4 ☐ part time employment outside the cooperative

10.5 ☐ other \_\_\_\_\_

Certification:

11. Production without the input of chemical products: since year \_\_\_\_\_

12. Registered member your group: since year \_\_\_\_\_

13. Does your production unit have other organic control mechanisms (organic certificates) at the moment?

13.1 ☐ Yes

13.2. ☐ No

14. If Yes: Which other organic control mechanisms (organic certificates) does your production unit have? (Please tick the appropriate box)

14.1 ☐ Direct sell (OCS) since \_\_\_\_\_ (year)

Certification by 14.2 ☐ IBD since \_\_\_\_\_

14.3 ☐ Ecocert since \_\_\_\_\_

14.4 ☐ other \_\_\_\_\_ since \_\_\_\_\_

15. Why does your production unit have further organic control mechanisms than the Certification by the Ecovida network?

16. Which organic control mechanism do you prefer?

16.1 ☐ PGS - Rede Ecovida

16.2 ☐ direct sell (OCS)

16.3 ☐ Third party certification

16.4 ☐ Are the same thing

17. Why do you prefer this one?

Work: Relational ties:

18. Which permanent labour do you employ on your production unit this year?

1 ☐ husband/wife

9 ☐ daughters \_\_\_\_ (number)

17 ☐ sons \_\_\_\_

2 ☐ mother

10 ☐ father

18 ☐ sisters \_\_\_\_

3 ☐ stepmother

11 ☐ stepfather

19 ☐ brothers \_\_\_\_

4 ☐ mother in law

12 ☐ father in law

20 ☐ daughter in law

5 ☐ brother in law

13 ☐ sister in law

21 ☐ son in law

6 ☐ aunts \_\_\_\_ 1

4 ☐ uncles \_\_\_\_

22 ☐ cousin female \_\_\_\_

7 ☐ nieces \_\_\_\_

15 ☐ nephews \_\_\_\_

23 ☐ cousin male \_\_\_\_

8 ☐ granddaughter \_\_\_\_

16 ☐ grandson \_\_\_\_

24 ☐ neighbours female \_\_\_\_

25 ☐ neighbours male

26 ☐ employees \_\_\_\_

27 ☐ household help \_\_\_\_

28 ☐ operators \_\_\_\_

29 ☐ partners \_\_\_\_

30 ☐ others \_\_\_\_\_



19. Which partial labour do you employ on your production unit this year?

- |   |  |   |
|---|--|---|
| 1 <input type="checkbox"/> husband/wife                     | 9 <input type="checkbox"/> daughters____(number)   | 17 <input type="checkbox"/> sons ____             |
| 2 <input type="checkbox"/> mother                           | 10 <input type="checkbox"/> father                 | 18 <input type="checkbox"/> sisters ____          |
| 3 <input type="checkbox"/> stepmother                       | 11 <input type="checkbox"/> stepfather             | 19 <input type="checkbox"/> brothers____          |
| 4 <input type="checkbox"/> mother in lay                    | 12 <input type="checkbox"/> father in law          | 20 <input type="checkbox"/> daughter in law       |
| 5 <input type="checkbox"/> brother in law                   | 13 <input type="checkbox"/> sister in law          | 21 <input type="checkbox"/> son in law            |
| 6 <input type="checkbox"/> aunts ____                       | 14 <input type="checkbox"/> uncles ____            | 22 <input type="checkbox"/> cousin female ____    |
| 7 <input type="checkbox"/> nieces____                       | 15 <input type="checkbox"/> nephews ____           | 23 <input type="checkbox"/> cousin male ____      |
| 8 <input type="checkbox"/> granddaughter ____               | 16 <input type="checkbox"/> grandson ____          | 24 <input type="checkbox"/> neighbours female____ |
| 25 <input type="checkbox"/> neighbours male                 | 27 <input type="checkbox"/> household help ____    | 28 <input type="checkbox"/> operators____         |
| 29 <input type="checkbox"/> partners ____                   | 30 <input type="checkbox"/> others _____           |   |
| 31 <input type="checkbox"/> neighbours exchange of services | 32 <input type="checkbox"/> employees of Ecocitrus | 33 <input type="checkbox"/> other employees       |

#### Commercialisation

20. Which sales channels do you use at the moment?

- |   |  |
|---|--|
| 20.1 <input type="checkbox"/> farmers' fair of the own group                            | 20.2 <input type="checkbox"/> grocery of the own group                             |
| 20.3 <input type="checkbox"/> grocery of natural products                               | 20.4 <input type="checkbox"/> own grocery  |
| 20.5 <input type="checkbox"/> institutionalised markets (nurseries, hospitals, schools) | 20.6 <input type="checkbox"/> primary material for organic processors              |
| 20.7 <input type="checkbox"/> baskets or bags   | 20.8 <input type="checkbox"/> export   |
| 20.9 <input type="checkbox"/> organic intermediaries                                    | 20.10 <input type="checkbox"/> conventional intermediaries                         |
| 20.11 <input type="checkbox"/> markets of other groups inside the Nucleo Vale do Cai    | 20.12 <input type="checkbox"/> markets of other Nucleos inside the Ecovida network |
| 20.13 <input type="checkbox"/> markets of other Cooperatives                            | 20.14 <input type="checkbox"/> supermarkets  |
| 20.15 <input type="checkbox"/> other: _____   |  |

21. In the case of: Organic processing on the production unit:

- 21.1 name of the organic company: \_\_\_\_\_
- 21.2 procession:
- |  |   |
|--|---|
| 21.2.1 <input type="checkbox"/> juices       | 21.2.2 <input type="checkbox"/> jams                |
| 21.2.3 <input type="checkbox"/> pies         | 21.2.4 <input type="checkbox"/> organic fertilizers |
| 21.2.5 <input type="checkbox"/> others _____ |   |

22. Do you sell your products directly?

- 22.1 ☐ Yes I sell my products on a farmers market
- 22.2 ☐ Yes I sell my products in my own grocery
- 22.3 ☐ Yes I sell my products in the grocery of my cooperative
- 22.4 ☐ No

23. Do you sell your products by your own?

23.1 ☐ Yes (I or somebody of my production unit sells my products)

23.2 ☐ No another associate sells my products

23.3 ☐ No an employee sells my products

24. On which markets do you sell your products, on which days and how many persons do sell them?

	Which markets	Day(s)	Number of persons
1	Feira menino Deus (POA)		
2	Feira da Tristeza (POA)		
3	Feira do Arcoiris (POA)		
4	Feira Ecologicas de Canoas Locality 1: FAE: AV. Inconfidencia Locality 2: Rua Vitor Rizebel		
5	Casa do Produtor Rural (Montenegro)		
6	Feira Ecologica de Caxias do Sul		
7	Feira Ecologica de Bento Goncalves		
8	Feira Bonifacio (Ass. Agroecologica) (POA)		
9	Other		

Tradition:

25. Do you produce additional food on your production unit, which is only for own consumption?

25.1 ☐ Yes

25.2 ☐ No

25.4 ☐ Yes, and I buy regularly products

25.3 ☐ No, but I buy most of the products

on the organic market

on the organic market

26. If Yes: Which activities do you have at the moment?

26.1 ☐ plant production

26.2 ☐ animal production

26.3 ☐ processions

27. What is the most important reason for these activities (concerning the supply with food)?

28. Do you have traditions of the colonial time preserved on your production unit (agricultural practices,...)?

28.1 ☐ Yes

28.2 ☐ No

29. If yes: Which traditions?

30. Are there norms defined inside the Ecovida network that are difficult to comply with or with which you don't agree?

30.1 ☐ Yes

30.2 ☐ No

31. If Yes: Which are these norms?

#### Principles

32. Grade a number from 1 to 4 to the following statements about the elements of PGS:

What do you think...

1- Very high 2- high 3- low 4- very low

1. The participation of the associates of my group at the meetings is ...

☐ 1 ☐ 2 ☐ 3 ☐ 4

2. The associates of my group do have the same vision of organic production

☐ 1 ☐ 2 ☐ 3 ☐ 4

3. The transparency at the operations of the associates of my group is...

☐ 1 ☐ 2 ☐ 3 ☐ 4

4. Equality in the decision making in my group is ...

☐ 1 ☐ 2 ☐ 3 ☐ 4

5. The confidence in between the associates of my group...

☐ 1 ☐ 2 ☐ 3 ☐ 4

#### Transfer of Information

33. Which place is most important for you to learn new things about organic Agriculture? (Choose one)

33.1 ☐ my operation

33.3 ☐ seat of my association/ cooperative

33.2 ☐ operations of

33.4 ☐ university

other organic producers

34. Why this place?

#### Perceptions:

35. Which of the following statements concerning strengths and weaknesses of PGS do reflect your perception? (Please tick the appropriate box)

Would you say you

1 agree a lot, 2 mildly agree, 3 unsure, 4 mildly disagree, 5 disagree a lot?

1. I would describe the consumers of my products as friends

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2. Without cooperation I wouldn't be able to enter the organic market

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

3. As single producer I wouldn't afford the costs for organic certification	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. It needs a lot of voluntary work to build up good working association/ cooperative	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. The consumers of my products don't show any interest in my work as a farmer	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. I do my work conscientious to protect the nature	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. Our group is presentable for other organic associations/ cooperatives	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. If I had the possibility to work in an other profession than farmer I would immediately switch	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. It is hard to find an appointment for our group meetings that suits for all members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. It would be great if our group has less meetings	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11. My interests are not satisfactorily represented in the Ecovida network	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
12. The constant discussions inside my group because of different interests are a weakness.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
13. If somebody of my group doesn't comply with the organic norms I talk about that.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
14. The farm visits of the Ecovida network are a good exchange of ideas to resolve the problems of my operation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
15. I need help to manage the bureaucratic work concerning documentation controlled at the farm visits of the Ecovida network	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

36. Which of the following statements concerning opportunities and threats of PGS do reflect your perception? (Please tick the appropriate box)

Would you say you      1 agree a lot, 2 mildly agree, 3 unsure, 4 mildly disagree, 5 disagree a lot.

- |   |                            |                            |                            |                            |                            |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1. With my group I have the certainty to sell my products as organic and receive an adequate price              | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 2. If I wouldn't be dependent to sell my products in a group, I would escape immediately                        | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 3. It is important that further generations have a life with resources not destroyed                            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 4. As a small scale organic farmer I'm supported by the Brazilian organic legislation                           | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 5. As a small scale organic farmer, I have access to sufficient financial support programs                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 6. The organic market is growing at the moment, that's why I have the possibility to sell more organic products | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 7. I would prefer to sell my products in the region of production than exporting them                           | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 8. I have problems with contaminations of pulverisation of the neighbouring areas                               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 9. I have sufficient biological control mechanisms for keeping away pests and diseases of my production         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 10. The risk of losing my harvest because of natural disasters is high  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 11. Temperature extremes that destroy my plants are risks that I have to calculate with                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 12. It is difficult to receive qualitative organic seeds and seedlings  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 13. Genetic modified cultures of the neighbouring areas are a risk for the organic production of my operation   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Socioeconomic status: individual/ production unit**

37. Age in years: \_\_\_\_

38. Sex:            1 ☐ male            30.2 ☐ female

39. Civil status:

1 ☐ married    2 ☐ divorced    3 ☐ single

4 ☐ informal    5 ☐ widowed

cohabitation

40. How many persons live at your production unit? \_\_\_\_

41. Production area

1. total

2. productive

1.1 in possession: \_\_\_\_ hectares

2.1 in possession: \_\_\_\_ hectares

1.2 leased: \_\_\_\_ hectares

2.2 leased: \_\_\_\_ hectares

42. Do you have non organic

☐ Yes \_\_\_\_ hectares

production on your operation?

☐ No

43. Level of education: Which of the following education terms have you attended and completed?

1 ☐ primary school

3 ☐ technical education

2 ☐ secondary school

4 ☐ university

44. How many years of education do you have in total? \_\_\_\_ years

45. Religion:

1 ☐ roman Catholicism

2 ☐ protestant

3 ☐ other religion \_\_\_\_\_

4 ☐ no religion

46. Origin of your family:

1 ☐ German

2 ☐ Italian

3 ☐ Brazilian

4 ☐ Other \_\_\_\_\_

47. Are there further members of your family registered in the Ecovida Network?

1 ☐ husband/wife

9 ☐ daughters\_\_\_\_(number)

17 ☐ sons \_\_\_\_

2 ☐ mother

10 ☐ father

18 ☐ sisters \_\_\_\_

3 ☐ stepmother

11 ☐ stepfather

19 ☐ brothers \_\_\_\_

4 ☐ mother in law

12 ☐ father in law

20 ☐ daughter in law

5 ☐ brother in law

13 ☐ sister in law

21 ☐ son in law

6 ☐ aunts \_\_\_\_

14 ☐ uncles \_\_\_\_

22 ☐ cousin female \_\_\_\_

7 ☐ nieces \_\_\_\_

15 ☐ nephews \_\_\_\_

23 ☐ cousin male \_\_\_\_

8 ☐ granddaughter \_\_\_\_

16 ☐ grandson \_\_\_\_

24 ☐ neighbours \_\_\_\_

Names: \_\_\_\_\_