



Certified with trust and solidarity?

**Attitude, benefits and challenges
of organic farmers
in participatory guarantee systems,
Cacahoatán, Mexico**

¿Certificado con confianza y solidaridad?

Actitud, beneficios y retos
de campesinos orgánicos
en Sistemas Participativos de Garantía
en Cacahoatán, Mexico

Master thesis

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1 Introduction

1.1 Theoretical background

The claim that organic agriculture is environmentally, economically and socially sustainable for small marginalised farmers is receiving broader evidence on a global scale everyday (ALTIERI 1995; MC. INTYRE et al. 2009; PRETTY and HINE 2001). However, organic reality is moving away from this original idea, giving increasingly room to conventionalisation (DARNHOFFER 2006; VOGL et al. 2005). Free market forces aggravate competition, concentration of production and transform organic value chains. As a consequence, producers and consumers lose their connection and trust in organic guarantee is almost exclusively based on rapidly narrowing legal regulations (VITTERSØ et al. 2005). This development is reflected in highly formalised third-party certification as the worldwide dominating approach and mostly only way for organic farmers to access markets. Particularly small farmers in the global South often find it impossible to gain a sustainable livelihood due to high inspection cost and bureaucratic procedures shaped by industrial countries' conditions (RAYNOLDS 2000). GONZÁLEZ and NIGH (2005) conclude that legal quality standards for inputs and outputs are dominating organic agriculture, while the process-based holistic philosophy at its core is increasingly obscured in trade relations. Moreover, ecological or income-related problems of organic guarantee are frequently in the center of public and scientific debates, but its social dimension doesn't receive sufficient attention (CUÉLLAR PADILLA 2008; DABBERT et al. 2011).

However, alternative approaches to organic certification can provide high social returns on investment for small farmers reinforcing the social dimension of organic agriculture (ZANASI et al. 2009). In this sense, the concept of the Participatory Guarantee System (PGS) goes beyond other alternatives such as group certification. PGSs have their origin in the global South. In the pioneer country Brazil they have developed from the movement of "Agroecology", a holistic approach to sustainable agriculture that comprises a stronger social dimension than most of today's prevailing forms of organic agriculture (IFOAM 2008a).

"The concept of ecological product corresponds to the organic product concept, but it contains aspects about social equity, solidarity, association, cultural valorization, autonomy of the local communities, respect to the ecosystems, among others which are not part of the technical productive aspects." (ECOVIDA 2004)

The major characteristic of a PGS is the replacement of the third party, common in globally recognised certification systems. Stakeholders interested in production and consumption of organic food are integrated to actively participate in the processes of organic certification. As a result, a group of farmers, consumers, researchers, NGO members and others are engaged in collective activities of capacity building and peer reviews at the farmsteads and production facilities of a PGS's members. PGSs generally rely on norms and standards of organic production as other systems do. Their difference lies in the adaptation of these norms to small farmers' reality, simple verification procedures, reduced bureaucracy and costs and environmental and social education for its members (IFOAM 2007; KHOSLA 2006). Thus, PGSs offer fertile ground for growing organic movements, providing access to every farmer (NELSON et al. 2010) and supporting social networks that reinforce closer relationships between producers and consumers, as claimed by VITTERSØ et al. (2005). These characteristics of PGSs lead to question what their impacts are in the reality of organic agriculture on a local scale. There's an obvious need to reveal the potential of PGSs as a tool in confronting powerful neoclassical market rules with more social approaches to organic food production and trade.

In order to address these aims, a Mexican case study provides the empirical basis for analysis. Therefore, the theoretical approach and framework for this undertaking are outlined in subchapter 1.2. A synopsis of the relevant scientific discourse on organic certification is provided in the State of the Art (Chapter 2). It starts with the origins of mainstream certification and a critical perspective, highlights characteristics, benefits and limitations of PGSs. In succession, it brings together both approaches to certification in a comparison of their central elements, strengths and weaknesses. Finally, I put organic certification into the Mexican context, outlining the development of the organic sector and certification in the country and drawing on lessons from Mexican organic associations working with a PGS. Chapters three and four build on this theoretical base, explaining and justifying the aims and methods of my research. The results are structured thematically and according to the defined dimensions of analysis in chapter five. Chapter six offers attempts of an interpretation and a comparison of central results with others, building a foundation for conclusions and perspectives in chapter seven.

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

1.2 Conceptive framework

The theoretical foundation of the thesis is embedded in an interdisciplinary approach. It allows to perceive organic certification from a sociological perspective and as a central element in political economy in aspects of power relations and different market actors.

The conceptive framework should provide a holistic perspective of agroecological systems, including all human and environmental elements. Hence, the concept of organic agriculture, institutionalised by IFOAM, builds the basis for research. Its principles of health, ecology, fairness and care are considered as the roots from which organic agriculture grows and develops (LUTTIKHOLT 2007). Similar concepts, norms and the reflection of a holistic perception of agriculture's role in ecosystems are found in many forms of farmer and indigenous land management. On the other hand, critics perceive an erosion of those visions of ecological and community relations embedded in sustainable agriculture due to increasingly tighter certification frameworks and dynamics of concentration in global organic trade (GÓMEZ TOVAR et al. 2005). Hence, in my research I differentiate commitment to organic agriculture by farmers' attitudes reflecting their values within a continuum from holistic agroecological motives to rather economic motives.

I understand the principle of ecology by the concept of agroecology (ALTIERI 1995) taking it as the normative approach to land management in my research. Moreover, I perceive my theoretical framework as embedded in the concept of food sovereignty, defined by the farmers organisation Via Campesina in 1996, as follows:

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.” (MCINTYRE et al. 2009)

In order to capture all sociologically relevant aspects of sustainable agriculture, attitudes of farmers towards organic agriculture are analysed in the dimensions of ecology, economy, health and social capital. In my analysis of farmers' perceptions of organic certification I put special emphasis on the social dimension, since it is what differentiates the concept of PGSs from external certification (Table 1).

Table 1: Key principles and normative aims of PGSs (adapted from IFOAM 2007; KHOSLA 2006; NELSON et al. 2009)

Key principle of PGSs	Normative aims of PGSs
Shared vision	<ul style="list-style-type: none"> • Belief in and active realisation of holistic philosophy of organic agriculture • Agreement upon core principles guiding the system's social focus on organic agriculture
Participatory	<ul style="list-style-type: none"> • Grassroots organisation with intense involvement of farmers, consumers and other interested stakeholders of the organic community (researchers, NGOs...) • Credibility of production quality relies on mutual application of rules for organic production
Transparency	<ul style="list-style-type: none"> • Every member is fully aware of decision processes and of how guarantee mechanisms work • Methodological guidelines are clearly communicated and information sources accessible to all interested parties (except commercially sensitive information)
Trust and integrity	<ul style="list-style-type: none"> • Social and cultural control is ensured by trust among members • Organic integrity and its measuring is central to the certification process
Learning process	<ul style="list-style-type: none"> • Construction of knowledge nets among all PGS actors • Permanent process of learning supports capacity development
Horizontality	<ul style="list-style-type: none"> • Power sharing guarantees democratic verification of the organic quality • Every member has the same responsibility and capacity

The approach to investigating the social dimension is based on the theory of social capital (GROOTAERT et al. 2003; WOOLCOCK 1998). Social capital is integral part of the Sustainable Livelihood Approach (BINDER and SCHÖLL 2010; CARNEY 2000; SCOONES 1998), which is important for the analysis of organic certification systems and their impact on livelihoods of Mexican smallholders.

The critical perspective on organic certification and the comparison of common third-party systems to the young approach of participatory certification roots in the discourse on differentiation and conventionalisation of organic agriculture (DARNHOFER 2006, FREYER 2006). My analysis of the two selected case studies is adjusted to the Mexican context of organic agriculture and based on the concept of GÓMEZ TOVAR et al. (2005) who place organic farmers in a spectrum from movement to market-orientation within dual economy patterns in organic agriculture.

1.3 Personal approach

My personal motivation for investigating participatory organic certification is rooted in my interest for sustainable agriculture and food systems from a relational perspective. I believe, the key to change disbalances between actors in local and global food webs often lies within power structures. In the case of organic certification, I am convinced that the small organic farmers in our world are the key actors for the necessary re(orientation) towards socially just, culturally diverse and environmentally friendly food production and trade. Hence, my intention is to give voice to some of them as my research partners and communicate their perceptions in my personal and academic networks.

The focus on agricultural policy and sociology with aspects of development policy and poverty in my master studies built an important basis to work on the selected topic. In an intensive course on organic food production chains I concentrated on organic certification. For my work with Mexican farmers I gained methodological knowledge and anthropological perspectives on research in Latin American countries in an intensive program. Together with lessons learned from interdisciplinary project work and seminar theses related to organic agriculture and rural development I could build my research on a vital basis of know-how and experience. Finally, my passion for Latin American cultures and the Spanish language as well as my interest in people-centered approaches were necessary soft skills for conducting my thesis.

2 State of the Art

2.1 Organic certification and a critique to it

2.1.1 Development of organic certification

In order to trace back the development of organic certification and understand its implications, it is necessary to first go back to the origin of organic agriculture. VOGL et al. (2005) define three pillars as its basis: traditional sustainable agriculture, farmers' innovations and results of scientific research. Around the world there is a large diversity of organic farming movements, all shaped by local natural conditions, cultures and ethical values. In 2009 the highest numbers of organic producers have been found in Asia (40% of total number), Africa (28%) and Latin America (16%; WILLER and KILCHER 2011). These numbers clearly demonstrate that the majority of organic farmers live in the South. Many of them live in poverty and started to manage their land organically in the absence of any private standards and legal norms (VILDOZO and VOGL 2006). In this light, the official numbers of organic producers in each country only reflect those who are participating in the market. MILLSTONE and LANG (2008) estimate that statistics obscure about 80% of unregistered farmers managing their land organically or in similar traditionally sustainable forms. PARROT et al. (2006) more carefully suppose that “...*certified organic production is only the tip of an iceberg of far more widespread and culturally embedded farming practices that rely upon ecological principles and knowledge.*”

As the organic movement grew, farmers organised themselves and started to democratically define *organic agriculture*. In the 1970s European pioneers developed first private standards in order to be able to guarantee the authenticity of their organic products in trade. For the control of compliance they conducted peer-review processes with broad stakeholder participation. In 1972 cooperation efforts of organic organisations in South Africa, the USA and Europe led to the birth of IFOAM (International Federation of Organic Agriculture Movements) as a platform for exchange (LUTTIKHOLT 2007). IFOAM had a strong role in the institutionalisation of the first organic standards on an international level in 1980 (Box 1) and started to provide important endorsement to the young organic movement (GONZÁLEZ und NIGH 2005, VILDOZO and VOGL 2006, VOGL et al. 2005). On this common basis for organic agricultural standards associations of farmers defined their norms for production, storage, processing, labelling, transport and trade, inspection and certification (VILDOZO AND VOGL 2006). Today basic standards and norms by IFOAM represent the current state of organic

production and processing and provide a framework for standard-setting organisations worldwide (WILLER and KILCHER 2009).

Box 1: Selection of general principles of organic agriculture institutionalised by IFOAM (adapted from VILDOZO and VOGL 2006)

- Efficient use of primary material and closed nutrient cycles
 - Efficient use of energy and reduced non-renewable energy
 - Maintain and improve resilience of the agroecological system with practices that enhance agrobiodiversity and genetic diversity
 - Management of livestock with practices that respect the necessities and characteristics of different animal species
 - Utilisation of natural ingredients in processing of organic food
 - Creation of socially just environment with secure and healthy working conditions as well as fair remuneration for everyone involved
-

As in industrialised countries the organic market grew rapidly, organic guarantee systems started to professionalise. Economic motives and the challenge of controlling increasing commodity flows gave incentives for more independent and credible certification systems. The German association Naturland as well as OCIA (Organic Crop Improvement Association) in the USA were the first to develop from a farmer-owned organisation to third-party-certifiers. Today the so called external certification or certification by a third party is the most preferred system in the organic sector (GONZÁLEZ and NIGH 2005, LAMPKIN et al. 2001).

The first legal frameworks on organic standards in the 1990s and the establishment of accredited certification systems represented an important reaction to the growing market of organics. Increasing commodity flows, various food scandals as well as consumer claims for food safety raised voices for a reliable and independent Quality Assurance System (QAS) in the organic sector (GONZÁLEZ and NIGH 2005). Governmental regulations on organic agriculture aim to protect consumers' justified expectations against fraud and regulate (inter)national trade and certification. The European Union enforced the first regulation (Council regulation 2092/91) in 1991 and the USA (US Organic Food Production Act 1990) in 2000 (VOGL et al. 2005). For facilitation of international trade of organic goods and to ensure consumer protection on global scale, a harmonisation of the guidelines for organically produced food has been added to the Codex Alimentarius by the WHO (World Health Organisation) and FAO (Food and Agriculture Organisation). Guidelines for plant production and animal production have been implemented in 1999 and 2001 and are in line with the IFOAM basic standards (WILLER and KILCHER 2009).

In 2007, 80 countries have either passed legal frameworks for organic agriculture and trade or have been working on them. WILLER and KILCHER (2009) estimate, that about 40% of the world's countries haven't implemented organic legislation yet. 468 public, non-governmental or private organisations offer organic certification. Most of the certification bodies are located in Europe (37% of the total number), Asia (31%) and North America (18%), while many African and some Asian countries don't count with any certifier but rely on foreign services (WILLER and KILCHER 2009).

2.1.2 Definition and institutionalisation of organic certification

“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 2005)

In comparison to the above definition of organic certification by IFOAM, ALBERSMEIER et al. (2009) use the following definition: *“Certification is defined as the voluntary assessment and approval by an accredited party on an accredited standard”*. It emphasises the importance of a neutral character and official confirmation of third parties and thus clearly refers to the dominant system of external certification in the organic sector. However, there are different approaches to certification which can be classified in four systems (Figure 1). The criteria of who is responsible for standard creation and verification characterise their differences. First-party certification represents the early stages of organic trade and refers to pioneers who defined first organic quality criteria and conducted peer-reviews in their associations. Second-party certification appears when the organisation marketing the product sets and controls the standards (FONSECA 2004). Therefore, GONZÁLEZ and NIGH (2005) give the example of Starbucks's criteria for buyer preferences, which are an element of the company's corporate identity and marketing. Both described systems are relevant on local scales and in informal trade relations, not only in organic agriculture. In the case of third-party certification, the most common system, individual farmers can obtain certification from an external certification body. In order to reduce cost, group certification has become a widespread alternative, particularly in developing countries (FONSECA 2004). Examples for a fourth party system are the International Standards Organisation (ISO) or IFOAM's efforts on harmonisation of standards (GONZÁLEZ and NIGH 2005). Finally, participatory certification, also known as Participatory Guarantee Systems (PGSs), is a young alternative form of organic certification based on co-responsibility of a social network's members, including farmers, consumers, NGOs, researchers or other committed stakeholders (FONSECA 2004; 2.2 Participatory Guarantee Systems – an approach to empowerment).

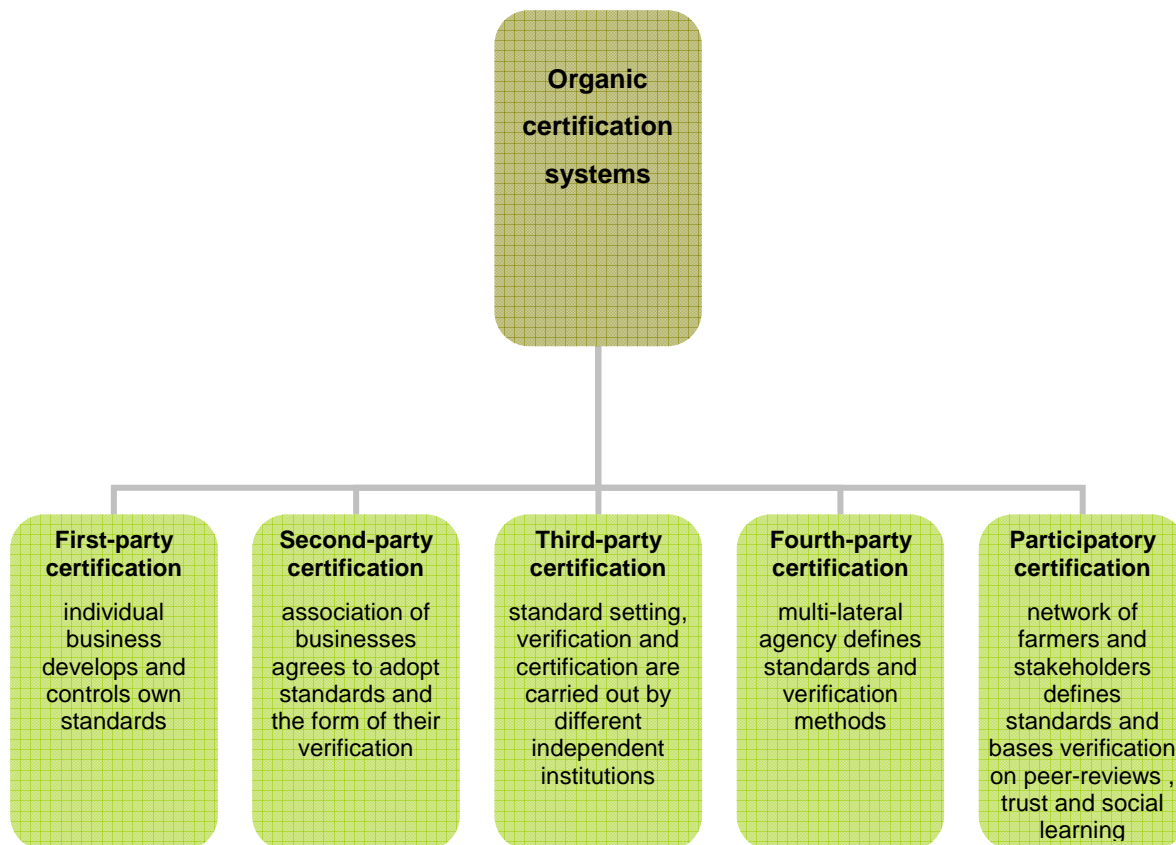


Figure 1: Classification of organic certification systems (adapted from FONSECA 2004 and GONZÁLEZ and NIGH 2005)

Institutionalised organic third-party certification is characterised by the following central principles:

- Institutional separation of extension services and inspection/certification
- Four-eyes principle: personal separation of inspection of operations and certification within certification body
- Emphasis of process instead of product oriented inspection from primary production to product marketing (IFOAM 2005b)

These principles are laid down in IFOAM's basic norms, the international ISO norm EN 45011 and in most legal frameworks as the European Union's regulation 2092/91 which still serves as a model for many nations developing organic laws (IFOAM 2005b, VOGL et al. 2003). The third principle of process quality in organic agriculture replaces the common term of product quality. Organic products are characterised by legally clearly specified environmentally friendly production processes, while classical chemical and physical parameters are rather representing complements for the assessment of organic production (VOGL et al. 2003).

Organic third-party certification is known to be the most complex QAS in the agricultural and food economy. Compared to other QAS in the food sector, it is unique in its approach to include the whole value chain from farmers to processors, retailers and consumers.

However, the first governmental regulations in the EU and USA focussed on production at the farm level. Standards for the stages in the supply chain after the farm gate still lack development, although today's value creation by industrial processing and retail is by far greater than in primary production (ALBERSMEIER et al. 2009, DARNHOFER and VOGL 2003).

Organic certification bodies need to proof supervision by a responsible national legal authority in order to be internationally recognised. Accreditation with IFOAM is not compulsory, but can facilitate equivalency of certification bodies with the reference to IFOAM's internationally recognised organic standards and norms. In July 2011 government regulations of twelve countries or confederations of states (eg. the EU, USA) and 24 private standards of certifiers have been accredited with IFOAM. Many others have applied and still find themselves within the process of accreditation (IFOAM 2011d).

To date, various countries with organic regulations have set requirements for organic certification beyond basic standards and norms. Hence, exporting countries' certification bodies often need to run multiple accreditations to establish trade relations with other nations. In order to support international equivalency of standards, IFOAM runs an accreditation program in cooperation with the International Organic Accreditation Service (IOAS) and is negotiating with governments and accreditation authorities for a common basis (IFOAM 2005b, WILLER and KILCHER 2009). These harmonisation efforts address competition among certification bodies and support the provision of the same rights to all market participants in the organic value chain (DARNHOFER and VOGL 2003, GONZÁLEZ and NIGH 2005). In April 2011 the IFOAM World Board has approved the results of the COROS (Common Objectives and Requirements of Organic Standards) project which aims at an international reference for bi- and multi-lateral equivalence assessments of organic standards. The IFOAM basic standards are in a continuous development process based on broad stakeholder participation. At the time of research for this thesis, standards and norms versions of 2005 have been under revision. IFOAM's communicated its aim to replace existing "standards for standards", the guidelines for members, by the creation of an internationally and directly applicable IFOAM standard (IFOAM 2011d).

2.1.3 Limitations of external organic certification

Since external, or so called third-party certification, is the most widespread and institutionalised QAS in the organic sector, it is also most debated – in public as in science. Today many critics perceive legal standards and norms to be at the heart of organic agriculture and permitted inputs and practices at the center of debate. In contrast, at its origins the organic movement has been led by holistic principles and an integral agroecological value concept behind the skill of active and innovative organic land management. Its early pioneers, mostly in European and North American countries, meant to oppose negative environmental, social and economical consequences of conventional and increasingly industrial agriculture. Their efforts are well illustrated by then rising contra-movements to the *Green Revolution* from the 1940s to the 1970s (VOGL et al. 2005).

However, today many proponents of the conventionalisation theory observe organic agriculture replicating social, technical and economic characteristics of conventional agriculture (DARNHOFER 2006). The expansion of the movement from local farmers markets to the industrial food sector is often associated with a loss of the organic paradigm. Since the advent of organic legislation with detailed standards and norms, many observe an increasing development of organic agriculture towards “recipe farming” (GONZÁLEZ and NIGH 2005, VOGL et al. 2005). ALLEN and KOVACH (2000) perceive a reduction of a holistic productive philosophy to an input-substitution. GÓMEZ TOVAR et al. (2005) distinguish two modes of organic agriculture that are co-existing, a bifurcation of the “movement” and “market” approach. In their Mexican example they show that current centralised certification systems privilege large farmers and thus reproduce social inequalities of conventional agriculture.

With market growth, in major economies as the EU and the USA, motives for organic agriculture have become diverse. The number of those dedicated to organics for economic reasons has risen strongly. In European countries, among other factors, the introduction of direct subsidies for organic agriculture by the EU in 1994 became visible in the remarkable growth rates of organic farmers from that time on (MICHELSEN et al. 2001, ZANDER et al. 2008). LAMPKIN et al. (2001) state that these rates were about 25% per year in the 1990s and led from 6,000 organic farmers in 1985 to 145,000 in 2000 in the EU. Even though the development context of certified organic farming in many southern countries is different from northern industrialised states, economic motives have also influenced its growth. In Latin America’s 1960s, for instance, foreign demand pull and initiatives by immigrants pushed

organic production of high value cash crops, as coffee or cacao. These factors were crucial for today's export flows of organic products to countries of the Northern hemisphere (VILDOZO and VOGL 2006).

On this background, critics observe a reduction of organic agriculture to a sole market approach. Indeed, also organic certification has become a business in recent years. Consequently, certification bodies no longer represent farmer interests (GONZÁLEZ and NIGH 2005). In 2010 their global turnover has been estimated about 400 million Euros which equals one percent of the organic markets' value or 200 Euros per farmer (ÖRJAVIK 2011). Cost for organic certification on a farmer's level can indeed result in a limiting factor. RUNDGREN (2001) calculates a global average of 3.5% percent of farm turnover for certification for different sorts and sizes of farms. However, he states that small farmers pay up to 10% and large farmers only 0.1% of their sales. On the contrary, CÁCERES (2005) in his Argentinian case study estimates about 60% of farmers' annual income (about 1,000 US Dollars¹) to cover certification fees in the first year. Therefore, he presented the profile of resource-poor families selling a highly diverse product range at local markets to seven major certification bodies who operate in the country. The total cost they stipulated in their responses include annual fees, separate inspection fees and extra fees such as for travel expenses, postings or chemical sample analysis (Table 1). In the case of group certification, total fees all certification bodies would charge, are lower (CACERÉS 2005). Nevertheless, it is difficult to estimate costs of certification since they depend on nature and size of the farm, sales volumes and workload of certification. Additionally, many certifiers offer their services to foreigners on different terms, often charge extra fees for farms in conversion and for every additional crop certified (RUNDGREN 2001).

¹ 1 US Dollar = 0.726457 Euros (Average exchange rate September 2011).

Table 2: Cost of individual organic certification for smallholders in Argentina, Misiones estimated by seven certification bodies (adapted from CÁCERES 2005)

Certification body	Annual fee (\$) ²	Farm inspection (\$/day-visit) ²	Sales fee on gross sales (%)	Extra fees
A	104	156	1	Yes
B	104	173	1	Yes
C	104	121	1	Yes
D	70	70	1	Yes
E	104	121	0.5-1	Yes
F	104	156	1	Yes
G	121	156	1	Yes
Average cost (\$) ²	102	136	1	Yes
Average annual cost (\$) ² 102 + 408 (3 farm inspections) + 11 + extra fees (~100)= ~ 621				

Without doubts, for many small farmers in developing countries who often struggle with poverty, these cost factors represent entry barriers to the organic market. Particularly in the years of conversion, when farmers are still not able to sell their produce with organic labels nor to charge premium prices, many cannot not bear the cost. Furthermore, such countries often lack institutionalisation of organic certification and thus rely on foreign accreditation bodies and certifiers, who are often based in the nations producer countries are exporting to. Consequently, expensive visits of European or North American inspectors further pushes certification cost when travelling to producers for inspection visits (VOGL et al. 2005, NELSON et al. 2010). Additionally, economical and political dependency of developing countries from wealthy nations is enforced by these structures and practices (GONZÁLEZ and NIGH 2005).

On this background, disparate power relations appear to be inherent to third-party certification. GÓMEZ TOVAR et al. (2005) even discuss them under the headline of “biocolonialism”. Since the system has been developed in northern industrialised countries, it is characterised by these areas’ conditions for agriculture. Standards and norms applied to certify products in tropical and sub-tropical regions are frequently far from their smallholders’ reality in terms of different natural environments and cultures (GÓMEZ TOVAR et al. 2005). Due to a lack of adaptation of legal requirements, these small farmers find themselves with high work loads in order to fulfil agronomic practices irrelevant to the local situation (GONZÁLEZ and NIGH 2005). An example from Mexico by GONZÁLEZ and NIGH (2005), citing BUNCH (2000), is the elaboration and application of compost which is regarded to be of low value in the tropics. The authors argument that soil activity doesn’t even cease in dry periods

² 1 US Dollar = 0.726457 Euros (Average exchange rate September 2011).

and rapid nutrient cycling provides just-in-time delivery to plants. Furthermore, highly bureaucratic processes with intense paperwork certifiers demand, often overburden the majority of poorly educated or illiterate farmers. For the reason of independency, certifiers don't offer extension services and training such as in the early stage of organic movements. Thus, farmers are often left alone with their lack of know-how and capacity so necessary for succesful organic certification (GONZÁLEZ and NIGH 2005).

International trade of organic goods requires a certain level of harmonisation. However, accreditation of national certification bodies of exporters is often denied by importing countries due to different requirements. MUTERSBAUGH (2002) demonstrates limitations in the case of the Mexican certifier Certimex. The organisation was formed to give voice to the Mexican notions of the organic and social justice as opposing criticized certification practices of foreigners. However, contractual requirements defined by the EU and ISO standards fundamentally constrain its alternative approaches. RUNDGREN (2008) supports these findings and argues that internationally active certification bodies should rather cooperate than compete with locally-based certifiers. He stresses their important engagement in local market development and better understanding of the local culture and conditions of agriculture.

VOGL et al. (2005) argue that accreditation still lacks transparency and is too costly as well as time intensive. Furthermore, RUNDGREN (2001) criticises certification bodies' work and points out that their accreditation is only based on their reliability instead of applying criteria for the quality of their work. On the other hand, harmonisation of organic standards on a global level has already been celebrated in many respects for creating equal conditions for everyone in the value chain. However, the increasing centralisation of this undertaking implies a loss of stakeholder involvement. IFOAM, national authorities and organisations guiding the process showed efforts to offer possibilities for participation (IFOAM 2011d), but it is doubtful whether the majority of marginalised organic farmers do have access to information or if their voices are being heard at all. Meanwhile, large agribusinesses find it easy to lobby for standards setting in their interest (GONZÁLEZ and NIGH 2005). As a consequence, harmonisation constrains an individually appropriate definition of standards in local organic networks. It doesn't leave enough room for the integration of traditional knowledge in land management. In this sense, GONZÁLEZ and NIGH (2005) perceive that international certification does increasingly represent a capacity to maintain written records, but is hardly supporting local solutions for specific socio-economic and agroecological

problems. VOGL et al. (2005) conclude that detailed norms on a global scale are unefficient and propose a global framework and locally adapted norms instead. DARNHOFER and VOGL (2003) are confirming this problem:

“[...]For it must be acknowledged that organic farming cannot be reduced to checklists, since it is also a social and ecological movement. Standardized production method and regulations have difficulties coping with such a phenomenon.”

Nevertheless, DARNHOFER and BELLON (2009) don't see a single right trajectory for organics to evolve, but different qualities and styles of production. They argue that the role of organic certification probably is to find its balance between a “systems re-design” and “compliance with standards” approach.

2.2 Participatory Guarantee Systems – an approach to empowerment

2.2.1 Origin and characteristics of the Participatory Guarantee System

PGSs are officially defined by IFOAM as

“locally focused quality assurance systems that certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange” (IFOAM 2008a)

They represent community organisations which require active participation of farmers, consumers and other stakeholders, as researchers or NGOs. This common element of all existing case studies gave them the name Participatory Guarantee Systems (PGSs). PGSs are based on the strong involvement of stakeholders and designed for small farms and local markets (NELSON et al. 2010, IFOAM 2008a). Central aims of this approach are greater empowerment and responsibility of participating actors on the basis of a long-term relationship. Thus, knowledge and capacity building are essential key factors for the success of a PGS. While farmers in external certification systems are required to prove their compliance with organic norms prior to receiving certification, in PGSs integration of new farmers starts on a foundation of trust. This integrity based approach is based on transparent structures and openness and requires minimised hierarchies and administration in order to ensure the system's functioning (IFOAM 2007). Consequently, PGSs rely on the principle of “social conformity”, enhanced through social conventions and procedures, as FONSECA (2004) summarises in her analysis of PGS case studies. In fact, independence of a

third party in many cases of participatory certification has reduced certification cost and paperwork to levels that smallholders are actually capable of managing. These achievements address one of the most criticised barriers to organic certification in existing systems (MAY 2008).

Existing PGSs around the world have emerged from different backgrounds and developed individually which also leads to distinct ways of operating the organic guarantee system. An important characteristic of these alternatives is their reflection of local development and living conditions and their related openness to continuous adaptation to change (IFOAM 2008a). IFOAM (2007) has conceptualised the commonalities of worldwide existing PGSs and defined normative core principles guiding these systems (1.2 Conceptive framework, Table 1).

The characteristic structure of a PGS is based on the important principle of flattened power hierarchies. Many national PGS programmes have successfully realized this principle in the structure of their organisational groups from farm family to national committee. According to the nature of a PGS the character of key groups established and their responsibilities are varying in each country. The example of the Indian national PGS structure serves as a good model for demonstration (Figure 2). The higher the organisational level of each group the more credibility the PGS receives within society and the political and economic environment. Nevertheless, it is important to note that the highest responsibility should be kept at the local level, which clearly demonstrates an important difference to common third-party certification systems, where farmers themselves don't have control over tasks as defining sanction guidelines. Every organisational level has a clearly defined responsibility that differs from those of others. The aim is to distribute control over the whole system without placing too much power at a single level (KHOSLA 2006).

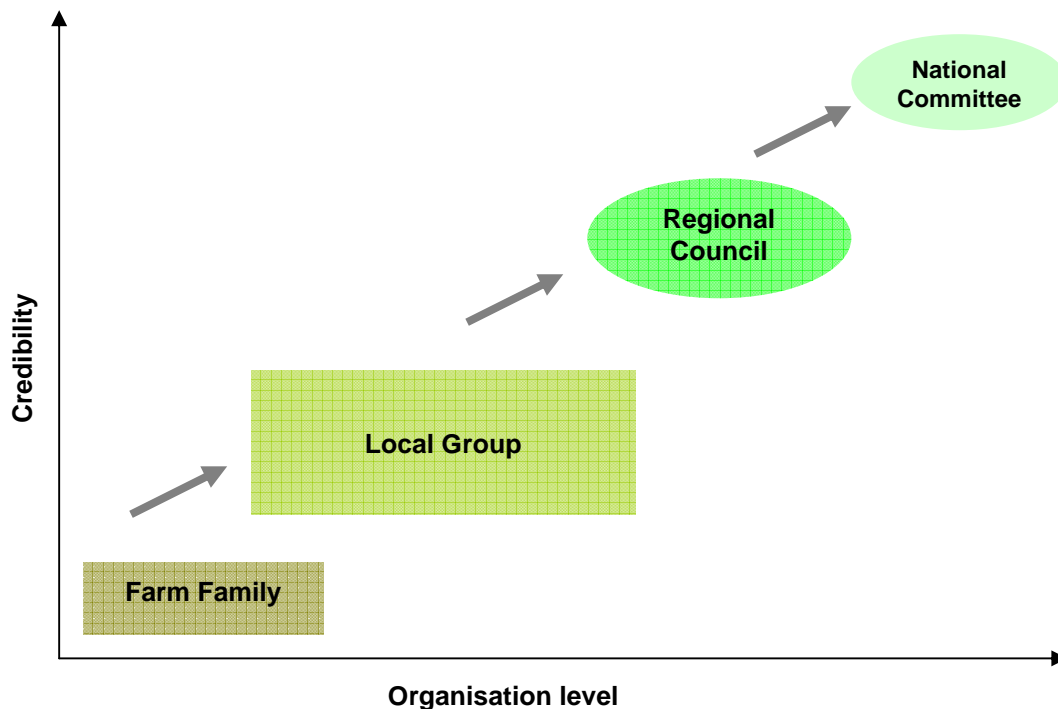


Figure 2: Organisational groups from local to national level in the Indian PGS model reflecting different levels of credibility and organisational level (KHOSLA 2006)

The size of the label boxes is proportionate to the level of responsibility in PGS certification.

At the base of every PGS, the farm family is meant to develop an understanding of organic standards, improve their capacity in social learning processes with other farmers and stakeholders of the local group and participates in group meetings and farm inspections. At the second organisational level we find the local group who consists of farmers within a region, interested consumers and other local stakeholders, such as researchers or NGO members. Altogether they build the core of a PGS, often originating from grassroots movements related to farmer cooperatives or similar associations (KHOSLA 2006). In other cases PGSs are stimulated by local NGOs, government or research institutions (NELSON et al. 2010). The local group forms the support network for all members, coordinates inspections, field trainings and other events, administration, public relations and reports to the regional council. Usually it is organised in sub-groups with distinct responsibilities and has regularly changing committees for the coordination of certification processes and representation. Regarding formal aspects on the local scale, PGS groups frequently have the legal status of an association, NGO or cooperative with different implications according to the country (IFOAM 2008b).

In some cases, local groups within a region, such as the state of a country, form a regional council who coordinates exchange and cooperation among its member groups, offers events

for training and capacity building and guidelines for the orientation of standards, manuals, sanction catalogues and other tasks. It might also engage in public relations and interaction with other stakeholders of the organic movement as well as application and negotiation for funding. A regional council is formed by democratically elected representatives of each local group participating (IFOAM 2008a). Finally, as in case of the Indian PGS case study, the national committee consists of a defined number of representatives from the Ministry of Agriculture, consumer groups, NGOs, involved research institutions and an unlimited number of qualified regional council groups. The national committee's principal tasks comprise the maintenance of databases, the coordination of random sample pesticide testing and acquisition of national funding, lobbying and negotiation of legal aspects. Furthermore, its members are responsible for communication with actors in the organic sector on the national level, with other countries' PGSs and international institutions as IFOAM in order to improve official endorsement of the PGS (KHOSLA 2006). In comparison, the Mexican PGS network neither has a regional council nor a national committee of the described structure, but instead integrates both functions in the national network *Red Mexicana de Mercados y Tianguis Organicos*, which has been founded for supporting and connecting local producer-consumer initiatives in the organic sector before participatory certification has been developed. It includes representatives from all local groups as well as researchers and NGOs but none from the government (GÓMEZ CRUZ et al. 2009, NELSON et al. 2010).

The concept of Participatory Guarantee Systems (PGSs) as a form of alternative certification shows a strong connection to the roots of first-party certification dating back to the 1970s. It may be regarded as a renaissance of a criticised system which has been replaced by third-party certification in the 1990s (2.2 Participatory Guarantee Systems – an approach to empowerment). Particularly in countries of the southern hemisphere, limitations of common organic third-party certification have created a strong need for alternatives and thus are home to the pioneers of PGSs (ALONSO VILLALON 2008). The *Rede Ecovida*, a Brazilian producer-consumer-network founded in 1998, is known as the first example of a successful participatory certification scheme. In 2004 the first international workshop on PGSs took place in Brazil, with support of IFOAM and associations and NGOs of the Latin American organic movement. In 2008 PGSs have been defined officially by IFOAM who built a special task force for support and institutionalisation of the concept. Since then, official recognition of PGSs as viable alternatives is growing and even more the number of successful examples. However, only few governments have implemented PGSs into legislation which still limits its power and challenges realisation (NELSON et al. 2010, ZANASI et al. 2009).

2.2.2 Making a difference – common elements of participatory certification

From a technical perspective, PGSs are characterised by central features (Figure 3).

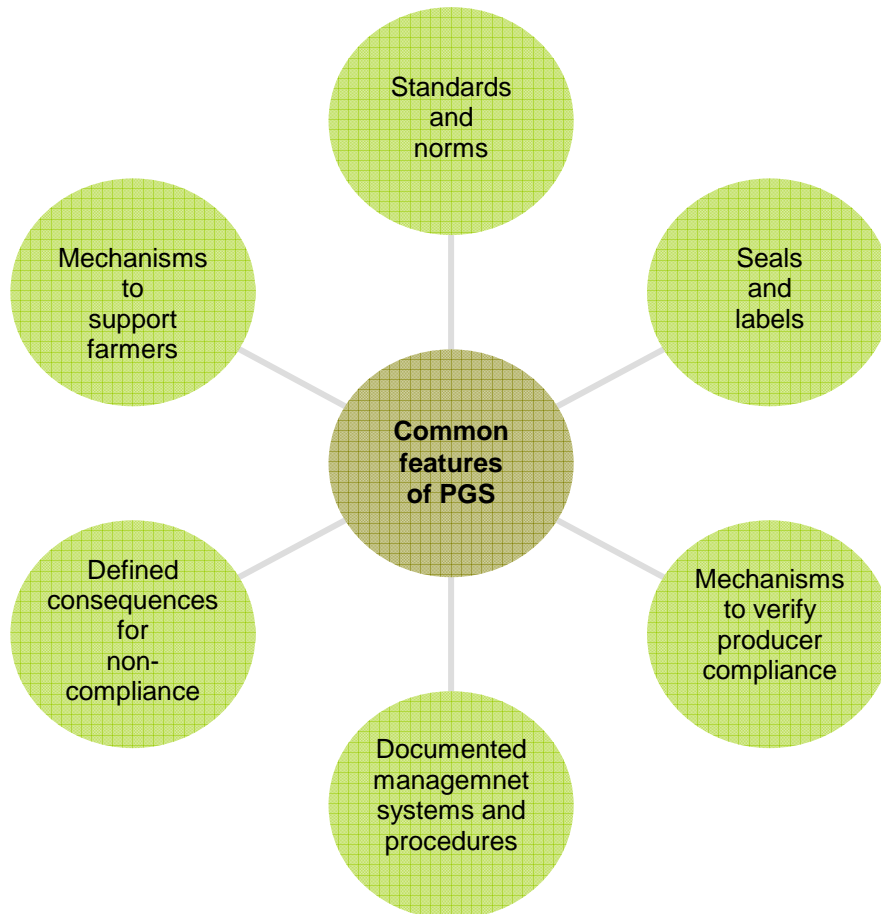


Figure 3: Common technical features of a PGS (adapted from IFOAM 2008a)

The reference point for standards defined in a PGS are generally recognised organic production rules as defined by the IFOAM basic standards (IFOAM 2006a), in national organic legislations or third-party certifiers' standards. Compliance criteria are usually developed in an intense process with stakeholder participation. As a result, organic rules should be adapted to the circumstances of the PGS' members. Moreover, social and cultural issues that might complicate the practical realisation of peer review processes, can be taken into account. Often producers are not capable of reading or capturing the lengthy documents. However, it is a central principle in PGSs to ensure awareness of the regulations' key issues and access to information sources. Hence, appropriate means of communication, often via personal conversation, do essentially facilitate this objective

(IFOAM 2008a, 2008b). In order to ensure the central principle of transparency, PGS groups put mechanisms of different complexity in place in order to manage their documentation of processes. The main goal is to provide a consistent basis for quantitative and qualitative measurement of the “organic”. In case of high educational deficiencies among group members, competent stakeholders, such as researchers or NGO members, are recruited for support (NELSON et al. 2008). Apart from written documents, different types of culturally appropriate media, like videos, drawn maps or posters, offer alternatives for documentation of central certification elements and information sharing. Furthermore, farmers’ compliance with organic rules should actively be stimulated by mechanisms that support learning processes (IFOAM 2008b, Table 3).

Table 3: Central documentation sources of participatory certification and mechanisms supporting compliance with standards (adapted from IFOAM 2008a, 2008b)

Documentation sources of PGSs	Mechanisms supporting standards compliance
<ul style="list-style-type: none"> • Standards (long and compact version) • Data base including for example <ul style="list-style-type: none"> – List of members – Regular rotation of leading committee – Distributing tasks to small teams – Producers’ data (products, status, farm characteristics and history) – Producers’ management plans – Producers’ participation (meetings etc.) • Description of the farm and farming activities (written or orally, drawn maps) • Technical notes for/of advisors • PGS operation manual including for example <ul style="list-style-type: none"> – Steps to obtaining the seal – Sanctions for non-compliance – Roles and responsibilities of key actors – Steps of peer review with checklist for farm inspections 	<ul style="list-style-type: none"> • Producer’s pledge (promise to improvement of weaknesses or compliance with standards) <ul style="list-style-type: none"> – Signed by other farmer(s) – Self-declaration • Capacity building <ul style="list-style-type: none"> – Regular meetings – Workshops – On-farm-trainings with experience exchange – Serve to demonstrate participation, commitment • Sharing responsibilities • Documentation of producers’ participation

In participatory certification support mechanisms in different forms are of particular importance. Especially for marginalised farmers with low education and financial capital technical advisors and support in access to funding are crucial for success. Often NGOs, research or public institutions are essential partners who provide training in organic management practices, social and organisational skills or even basic education in reading, writing and mathematics. In terms of marketing, support is necessary in many cases, such as organising the venue for a farmers market or accessing other sales channels. Furthermore, advertising and other forms of communication and information as well as the development of pricing strategies are areas, where many PGS groups cooperate either with stakeholders of their own group or external partners (IFOAM 2008b).

Each PGS uses a seal for official endorsement. Members are allowed to use it on their products and the documents and certificates produced. In the first place, seals serve the evidence of organic quality and allow to trace back the product's life cycle to its origin by means of numbers or codes on the label (IFOAM 2010a). In order to differentiate products from farmers in conversion process to organic agriculture from those already certified, many PGSs attach their seal in different colours to products of different quality (NELSON et al. 2008). In cases where producer and consumer are not directly interacting the seal is even more important. In 2010 IFOAM launched a global PGS logo (Figure 4) which can be used (additionally) by all PGSs registered with the organisation. It serves as a symbol for being part of an internationally recognised network (IFOAM 2010a).



Figure 4: IFOAM PGS logo (IFOAM 2010a)

Every quality guarantee system needs to have sanctions for non-compliance with its standards in order to ensure its credibility and avoid misuse. In a PGS, consequences for farmers breaching rules are defined democratically by all stakeholders. They are clearly communicated to each new member entering the group in order to support commitment (IFOAM 2010a). Experience has shown that non-compliances are usually minor and related to challenges as record keeping. Most sanctions are of social nature since high fines are

often not appropriate to the reality of marginalised smallholders. Usually applied sanctions are graded according to the seriousness of the committed violation of rules (KHOSLA 2006, Table 4).

Table 4: Example of catalogue of sanctions corresponding to different non-compliances with organic rules in an Indian PGS (adapted from KHOSLA 2006)

Situation	Sanction
<ul style="list-style-type: none"> • Missing attendance at a required field day • Unsatisfactory production system 	<ul style="list-style-type: none"> • Verbal warning
<ul style="list-style-type: none"> • Minor violations of the standards or regulations • Repeated written warning for similar problem • No response to approval conditions 	<ul style="list-style-type: none"> • Short suspension of certification Period determined by length of time it takes for the producer to get a new peer inspection/consultation
<ul style="list-style-type: none"> • Repeated minor violations • Clear violation of the standards not threatening the organic integrity of the product 	<ul style="list-style-type: none"> • Suspension for a fixed period until farmer(s) take corrective actions
<ul style="list-style-type: none"> • Clear violation of the standards threatening the organic integrity of the product (eg. use of prohibited pesticides or synthetic fertilizers) 	<ul style="list-style-type: none"> • Longer term suspension (eg. for a year) • Reset producer's status into "conversion"
<ul style="list-style-type: none"> • Repeated violations leading to penalties, suspension or withdrawal of approval • Obvious fraud • Intentional obstruction of the inspection (eg. denying access of PGS committee to farmsteads) • Refusal to respond to written requests for additional information 	<ul style="list-style-type: none"> • Termination of participation Bann of farmer from PGS membership (permanently or for a set period of time)

2.2.3 Making a difference – the process of participatory certification

As organisational structures of PGSs from local to national level can vary and its' features are designed differently (2.2.1 and 2.2.2), also the process from application to certification can vary. However, a number of common steps can be identified in most PGSs (Figure 5). As such, after contacting the local PGS group, in most cases, the applicant needs to document his/her production/farm characteristics. Often past and current production processes, including a sketch of the farmstead, need to be filled into a questionnaire. After the certification committee has decided that the farmer complies with the organic standards of the group (set eg. on basis of the national organic programme or the IFOAM standards), his/her farm is visited. All stakeholders of the PGS are invited to be part of this interactive experience that aims to be a learning opportunity for everyone involved. For example, in the Mexican PGS of Chapingo at least three members of the group have to be present in order to conduct an "inspection" (KHOSLA 2006, NELSON et al. 2008). Basic data, such as the number of crops and farm size are collected and central organic control points are being evaluated:

- Source of seeds and water
- Soil, pest and disease management practices
- Post-harvest treatment of crops
- Potential for contamination from neighbouring farms (NELSON et al. 2008)

Usually, after the committee has analysed and discussed the farm visit in a meeting, the farmer receives organic certification if all standards are fulfilled. However, in many cases applicants need to work on a set of conditions resulting of shortcomings such as the lack of natural barriers to prevent contamination from neighbours or composting manure prior to application. A producer with conditioned certification needs to work on compliance with the support of the PGS group and is allowed to sell his/her products using a label that indicates his "in conversion" status. Regular visits to the farmers' homesteads and fields are usually following in order to monitor improvements and ensure that organic certification can be granted (ECOVIDA 2004, IFOAM 2008b). In this respect, IFOAM (2008a) and NELSON et al. (2008) highlight the importance of transparency and credibility as an important principle of PGSs, which implies the need to publish committee decisions and data of farms and their operations. They cite examples from PGS groups maintaining databases on their website and inviting everyone outside the PGS to join farm visits.

A carefully designed checklist, based on defined organic standards and norms, builds the basis for a successfully conducted peer review during the farm visit. Particularly in the start phase of a PGS such a list is a vital guideline for the mostly unexperienced members of the certification committee. Furthermore, it supports to reduce subjectivity in the interpretation of observations. Often training of farm evaluation together with technical advisors is helpful prior to a scheduled visit (IFOAM 2008a). As reference points to measure quantitative and qualitative changes of defined indicators, NELSON et al. (2008) suggest to use the management plan of each farm. Description of history and management practices of the farm, verbal commitments to improvement by the farmer and sketches of the farmsteads build an essential basis for peer-review visits.

Concerning monetary costs of certification, it needs to be pronounced that it is a key principle of a PGS to keep fees as low as possible. Thus, in the start phase of such a system public funding, support from NGOs or other sources are essential, as Mexican case studies by NELSON et al. (2010) demonstrate. IFOAM (2008a) considers the identification and ensured coverage of operating cost is a key factor to success, since investments in infrastructure (market equipment, storage room etc.), transport or courses and seminars are the baseline for developing a PGS. In some cases, members contribute to cover costs, while they don't in other PGS groups (IFOAM 2008b).

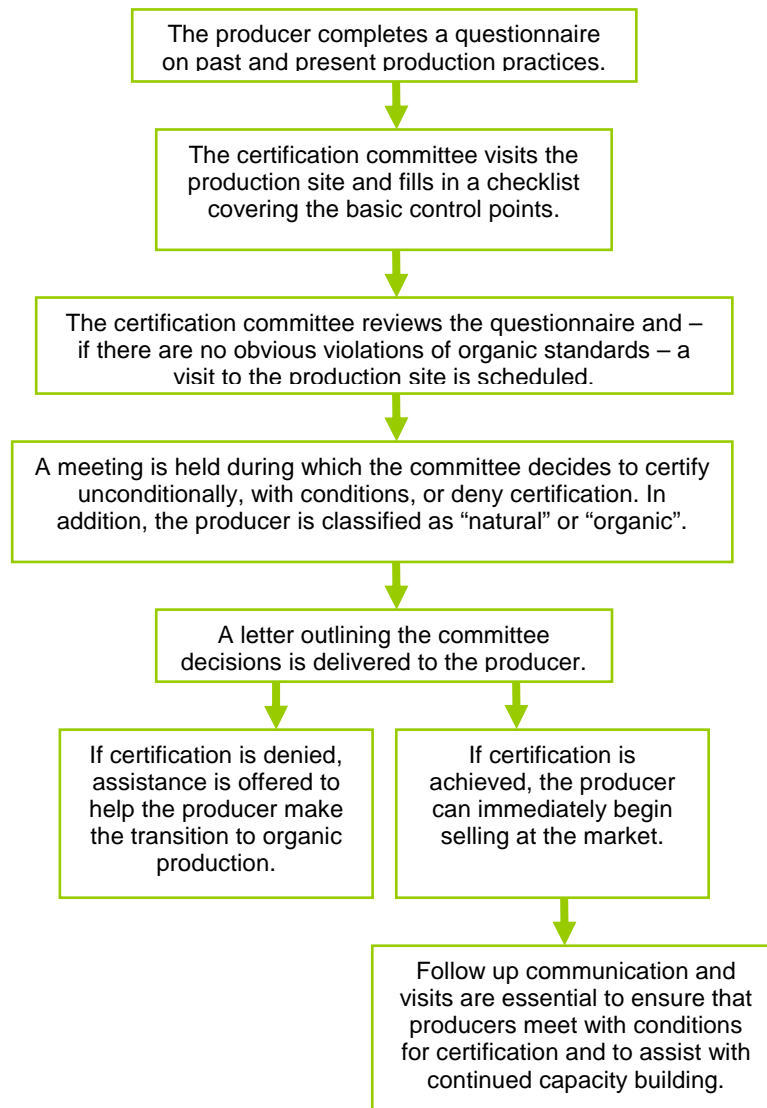


Figure 5: Model of the process from application to certification in the Mexican PGS of Chapingo's organic market (NELSON et al. 2008)

2.2.4 Making a difference – global growth and institutionalisation of participatory certification

An international database of registered PGSs by IFOAM (2010b) clearly reflects the rapid growth of participatory certification. The first case of the Brazilian PGS *ECOVIDA* was officially recognised in 2004. It becomes clear that, excluding the USA, southern countries with higher poverty rates, as Latin American nations, have the largest numbers of participatory certified producers (Figure 6). This trend supports the claim of NELSON et al. (2010) and GONZÁLEZ and NIGH (2005), arguing that those countries do have hardly any

access to the organic market due to financial and bureaucratic burdens. Hence, they are more urgently in need for alternatives, such as PGSs. Brazil and India count with more than 2,000 participatory certified organic producers, while many European countries don't even have registered a single PGS (IFOAM 2010b). As ALONSO VILLALON (2008) highlights, in European and other industrialised countries with a strongly developed organic sector and a supportive political environment, subsidies and other support programmes for organic farmers might have obscured the need for alternative approaches to certification. In marginalised countries, such as on the African continent, PGSs are underrepresented too (IFOAM 2010b). The high numbers of certified producers in Latin America might reflect the changing political environment in many of its countries that are slowly adopting democratic principles (ALONSO VILLALON 2008). However, there might be a considerable number of PGSs not registered with IFOAM nor statistically represented. Furthermore, it is probable that other forms of producer-consumer-networks exist, who are operating in a similar manner but are not connected to official networks.

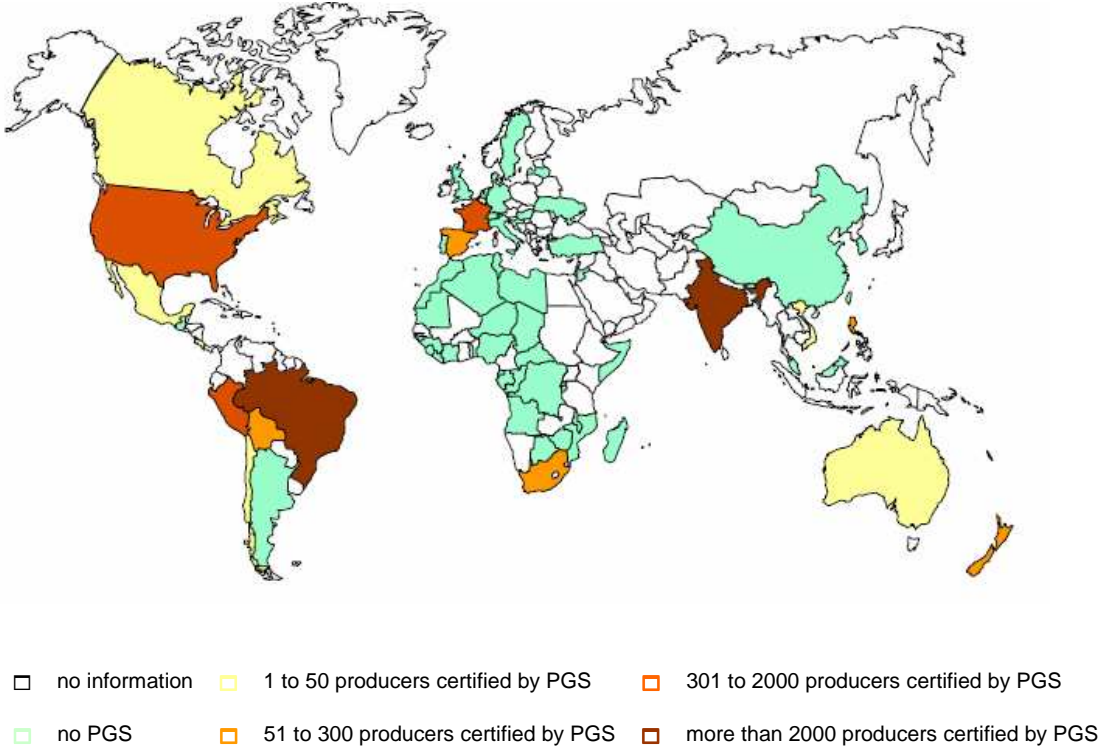


Figure 6: Producers certified by a PGS per country in 2010 (IFOAM 2010b)

Apart from growing numbers of PGSs, their institutionalisation is important for their success. IFOAM plays a crucial role for the increasing recognition of participatory certification on a global scale. The institution supports PGS initiatives, offering a platform for exchange among

stakeholders, as well as with the development of guidelines for a legal framework on international level (CUÉLLAR PADILLA 2008).

To date, seven of 17 Latin American countries have implemented the PGS into their legislation or into a resolution: Bolivia, Brazil, Costa Rica, El Salvador, Mexico, Paraguay and Uruguay. However, the legal situation shows great differences among countries (Table 5). Only in Bolivia, Brazil, Mexico and Uruguay PGSs have the same legal status as other guarantee systems and Mexico and El Salvador are the only countries providing a legally binding national certification system for PGSs (ALONSO VILLALON 2010, IFOAM 2010b). Even though it is a normative principle of the PGS to focus on local markets, in Brazil and Costa Rica participatory certified products are theoretically allowed to cross national borders. Some countries do not recognise participatory certification as an alternative despite existing PGS groups (Argentina, Colombia, Chile, Ecuador; ALONSO VILLALON 2010). Compared to the southern hemisphere, northern countries are even more reluctant in legal recognition of PGSs. Hence, in Japan, the USA and the EU many organic farmers who can't afford or reject external certification are not allowed to call themselves or their products "organic". Hence, they are excluded from participation in the open organic market and not represented in public statistics. As an example, the EU regulation no. 823/2007 denies organic status to the organic pioneers of the French PGS Nature & Progrés, who are co-founders of IFOAM (IFOAM 2011c, VAN DEN AKKER 2008). VAN DEN AKKER (2008) recommends an amendment to the EU regulation in order to create regulatory space for the PGS. IFOAM (2011c) is currently supporting such demands by offering advice to concerned countries and publishing guides on how to implement a legal framework for both third-party and participatory certification. The guides are based on references from successful states as Brazil, New Zealand or India.

Table 5: Recognition of the PGS in legal frameworks of 17 Latin American countries
(adapted from ALONSO VILLALON 2010)

Country	Legal framework for OA ^c	Legal framework for PGS	National certification legal	National organic seal	equal to other OC systems	PGS approved for external markets	PGSs exist in country
Argentina	yes	no	no	no	-	-	yes
Bolivia	yes	yes	no	yes	yes	no	yes
Brazil	yes	yes	no	yes	yes	yes	yes
Colombia	yes	no	no	yes	-	-	yes
Costa Rica	yes	yes	no	no	no	yes	yes
Chile ^a	yes	no	no	yes	-	-	yes
Ecuador	yes	no	no	no	-	-	yes
El Salvador	yes	yes	yes	no	^b	no	no
Guatemala	yes	no	no	no	-	-	no
Honduras	yes	no	no	no	-	-	no
Mexico	yes	yes	yes	no	yes	no	yes
Nicaragua	yes	no	no	yes	-	-	yes
Panama	yes	no	no	yes	-	-	no
Paraguay	yes	yes	no	no	^b	^b	yes
Peru	yes	no	no	no	-	-	yes
Dominican Republic	yes	no	no	yes	-	-	no
Uruguay	yes	yes	no	no	yes	no	yes
Total	17	7	2	7	4	2	12

^a In Chile “Tierra Viva” considers itself a PGS, has got official approval under the group certification scheme, but is not recognised as a PGS by the government.

^b No information available or status unclear. ^cOA=Organic Agriculture.

Legal recognition of the PGS partly conditions their success. In many cases, policy restrictions hinder trade of participatory certified products. Particularly when farmers aim to sell via supermarkets or specialty shops, they encounter barriers since the use of the term “organic” and others (as stipulated in national organic laws) are forbidden on their labels or packaging. As a practical consequence, fairs and organic markets or other forms of direct trade are sought and established by farmers (IFOAM 2011a). Since PGSs don’t comply with the ISO 65 standards, their products are usually not allowed to cross national borders, apart from exceptions mentioned above. For example, a missing precondition is that participatory certification doesn’t include third-party verification which is the only proof of independent assessment recognised by ISO (NELSON et al. 2010).

Despite the lack of institutional recognition of participatory organic certification, there are important voices that support the importance of this alternative on global scale. As an example, UNCTAD (United Nations Conference on Trade and Development) and UNEP (United Nations Environment Programme) stated in their report on “Best practices for organic policy”

“Compulsory requirements for mandatory third-party certification should be avoided as they will not enable other alternatives to emerge. Other conformity assessment procedures, such as participatory guarantee systems, should be explored.” (IFOAM 2011b)

FONSECA (2004) regards alternative certification systems as promising signs that support revitalisation of social norms and practices in organic food networks. She puts the importance of social movements on the same level with governmental authorities and economic organisations for the regulation of global trade.

2.2.5 Benefits and limitations of participatory certification

In their study on the Mexican network of organic markets operating with a PGS, NELSON et al. (2008) stress their principal aim to increase the local provision of high quality organic products sold at prices that are fair to consumers as well as producers. Local food networks should be established and strengthened by a focus on the direct interaction among producers and consumers in the market place. In this sense, the preferred sales channel of farmers’ associations operating with participatory certification is in many cases a local farmers market or some other form of direct sales. Many case studies have proven that these approaches to a guarantee system for organic marketing involve more than just organic certification. Particularly the added social value of building and developing a community of stakeholders of the organic movement is stressed in examples from Spain, Brazil, India and others (CUÉLLAR PADILLA 2008, IFOAM 2008b, ZANASI et al. 2008).

Thus, PGSs offer important alternatives to the conventional food sector as well as to the industrialised mainstream organic market (NELSON et al. 2008, ESCALONA AGUILAR 2009). The FAO (Food and Agriculture Organisation) does support this inherent aim of participatory certification, demanding that *“a ‘certification flexibility’ is needed to enhance development of short supply chains as well as an expanded participation of smallholders in the organic sector.”* (IFOAM 2011b). ESCALONA AGUILAR (2009) schematically illustrates possible changes in the perception of different members of a PGS group towards an agroecological vision of production and consumption (Figure 7). These changes represent the normative

aims of a sensibilisation process that enables the collective management of a common good by social control.

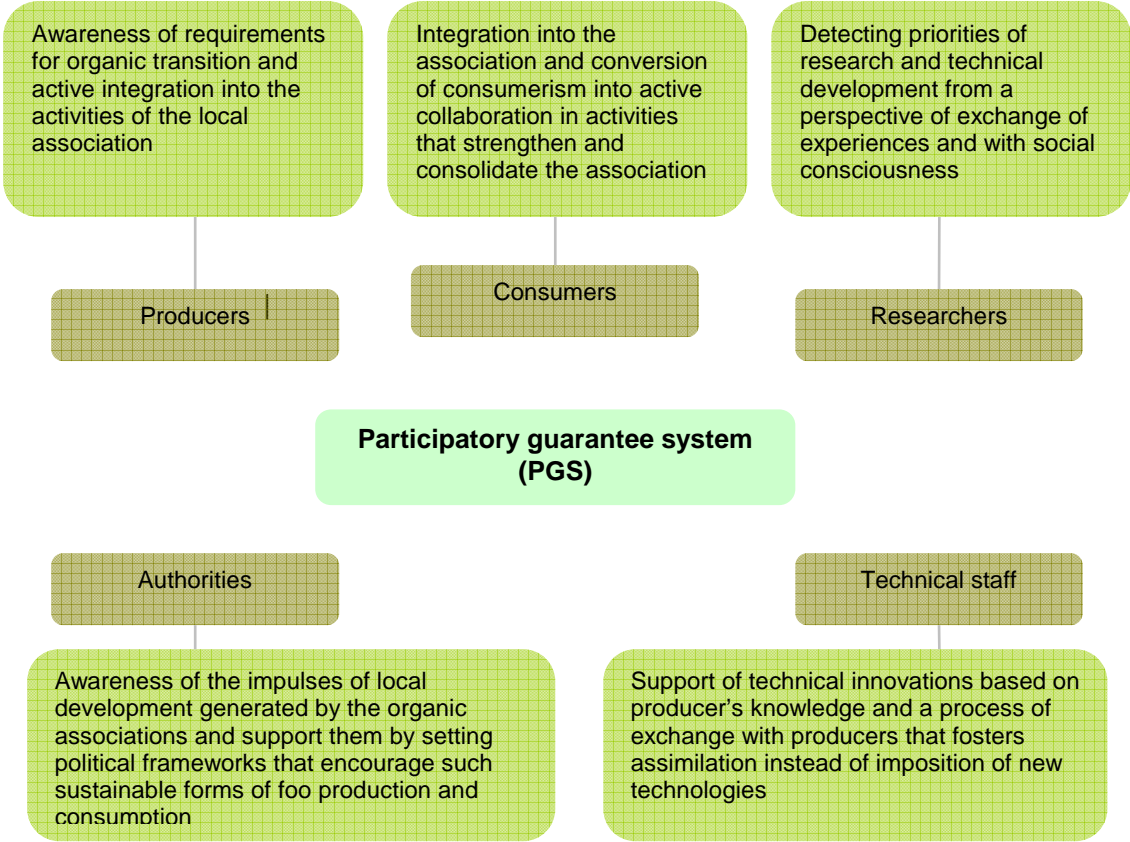


Figure 7: Normative changes in perceptions of different members of a PGS towards an agroecological vision of production and consumption (adapted from ESCALONA AGUILAR 2009)

Despite the large number of benefits participatory certification can offer, there are considerable challenges and disadvantages that have been observed from case studies. An important limitation in many PGSs is human capital in terms of organisational and administrative skills, marketing know how and other technical competence in order to build up a basis in a young group. It might be related to this fact that in a number of successful PGS groups academics have been involved from the very beginning (ESCALONA AGUILAR 2009, NELSON et al. 2010). NELSON et al. (2010) conclude that their time and know-how devoted to such initiatives, often in relation to research projects, have been an essential resource for the PGS group in Chapingo, Mexico. On the other hand, members of PGSs often lack training and education, which slows down processes in general and makes it difficult to keep up with demand of new farmers for integration and certification (NELSON et al. 2008). Apart from technical expertise, a lack of basic education in reading, writing and

calculating is a barrier for members' comprehension of standards or microeconomic issues (ZANASI et al. 2008, NELSON et al. 2010).

As FONSECA (2004) highlights, another scarce human resource is time. Probably it is one of the most limiting and at the same time most important factors for the success of a PGS. All tasks involved in the certification process or the development of basic organisational structures rely on the time budgets of volunteers. NELSON et al. (2010) stress that finding consumers willing to integrate themselves is a particularly difficult challenge in countries where internal demand for organic products and society's awareness of environmental protection and health is low. Furthermore, farmers are facing numerous additional tasks which are often a burden due to their already high regular workloads in household and farm. In the face of poverty, many farmers lack motivation to believe in alternatives and find it hard to invest extra-time. These reasons lead to considerable fluctuation of memberships that many PGSs actually face and inhibit continuity and consistency within the process of organic certification.

NELSON et al. (2010) identify another range of social limitations, often on the personal level and inherent to the character of participatory certification. As such, the self-regulatory nature of PGSs tends to be more susceptible to conflicts. Due to their democratic decision culture different opinions are confronted with each other regularly. The small size and radius of action of a PGS raises the risk that the detection of a producer's problem leaves doubts about the integrity of the whole group from an outside perspective. On the other hand, MUTERSBAUGH (2002) finds in his study on social barriers of Internal Control Systems in organic certification that it is often an ethical and cultural problem to judge another farmer if the consequence might be denial of certification. Hence, low levels of criticism and honesty in this respect might also question the reliability of a PGS. Either way the system does not actively limit the natural bias every group member carries and further adds to distorted decisions (NELSON et al. 2009). FONSECA (2004) argues that the essential trusting relationship among members and stakeholders of PGS does not eliminate opportunities for deliberate violations, but points out, that third-party systems aren't 100% fraud free either.

In another dimension of social limitations it has been found that the new ways of social organisation for market access by PGSs might create divisions among members of a community. On one hand, traditional bartering systems are undermined due to organic rules. On the contrary, there are participatory certified farmers in Mexican case studies (NELSON et al. 2010) who act as middlemen for other non-certified neighbours and thus create a problem of integrity within the PGS. Many of the above mentioned internal challenges PGSs face are

also prevalent in Internal Control Systems (ICS) of group certification schemes (2.3 Participatory and group certification – a comparison). ICSs are alternative third-party certification systems (MUTERSBAUGH 2002, Nelson et al. 2009). However, PGSs ask for more capacity of its members than most ICSs do in order to guarantee their functioning. They even require active citizenship from both producers and consumers involved in the organic association. Unfortunately, organic farming has been transformational primarily at a global level, but didn't create space for citizenship, mutuality, reciprocity, dialogue and democracy on the local scale. This circumstance reinforced the domination of third-party certification systems. Nevertheless, regions are free to recognize participatory certification as valid, just as they are free to reject third-party certification (DARNHOFER 2006).

Among the external factors limiting PGSs, the lack of formal recognition at institutional level in front of certification bodies, governments as well as consumers appears to be the most discussed. This problem mainly originates from the fact that in PGS inspection, certification and training are carried out by the same party and therefore don't comply with ISO norms. Additionally, external certification bodies and agro-businesses do have interest in preserving their power structures and thus often act as competitors against alternatives as PGSs (FONSECA 2004, NELSON et al. 2010).

2.3 Participatory and group certification – a comparison

ALLEN and KOVACH (2000) emphasise the important stimulation of social movements due to the organisation of smallholders and other stakeholder groups in the organic sector of industrialised as well as developing countries. Group certification schemes are often considered to rank among such initiatives. They have been promoted as an alternative to individual third-party certification, reducing the economic burden for small-scale farmers in low-income countries (FONSECA 2004). However, major organic markets as the EU, USA or Japan do not accept them as alternatives (BODNÁR 2008). After long negotiations with many stakeholders, in 2008 the IFOAM General Assembly extended the limitation for eligibility for group certification on resource-poor or small farmers also to large groups with multiple production units, sites and facilities if they are developing clear criteria for certification (IFOAM 2008c).

Group certification is usually based on an Internal Control System (ICS), which is defined by IFOAM (2006b) as follows:

“Part of a documented quality assurance system that allows the external certification body to delegate the annual inspection of individual group members to an identified body/unit within the certified operation.”

Hence, in group certification schemes continuous monitoring and annual control of members' compliance with organic standards is carried out by a trained member of the group. The inspector of the certification agency asks for a report once a year and only controls a sample (mostly 10-20%) of the farmers in an organic association (MUTERSBAUGH 2002).

Beside similar features among group and participatory certification, the first are more of an alternative within the conventional third-party certification system, while PGSs are based on a fundamentally different organisational approach. Origin, main purpose and practices of both systems differ from each other (MAY 2006; Table 6). Similarities of group certification and PGSs are represented by their collective certification tools, standards/norms and compliance verification mechanisms, documentation of procedures, organic seals and sometimes farmers' pledges. Furthermore, group certification schemes often aim at collective action too, but their approach is more mechanical and often led by top-down-approaches. Comparing the starting phase of both certification systems it becomes clear that local initiatives based on enthusiasm and collective organisation are often building the foundation of a PGS. Group certification, in contrast, often relies on substantial funding and high technical support at the very beginning in order to fulfil baseline entry requirements as the building of infrastructure and the payment of fees to certifiers (IFOAM 2008a, MAY 2008). On the other hand, benefits of ICS that go beyond certification have been acknowledged. They include quality improvements, synergies from joint marketing as well as a climate of collaboration among farmers (BODNÁR 2008).

Table 6: Central differences of group and participatory certification (adapted from FONSECA 2004, IFOAM 2008a, MAY 2008)

Group certification	Participatory certification
<ul style="list-style-type: none"> • Establishment of system with expectation that producer's philosophical commitment will grow by itself with time • Ownership and control of system from outside (NGOs, exporters, certification agency etc.) • Marketing of typical cash crops (eg. coffee), products producers often don't consume • Targeted at export markets (often no direct interaction producer-consumer) • One defined set of rules for all ICS 	<ul style="list-style-type: none"> • Establishment of system by starting with the development of each producer's philosophical commitment within a broad social process • Ownership and control by members of system • Marketing of basic products of local diets • Targeted at local markets (often with direct interaction producer-consumer) • Key stakeholders in every PGS are engaged in definition of standards and their adaptation to their unique situation
<ul style="list-style-type: none"> • Often extensive and detailed bureaucracy (in case of export most requirements) • Often certification of a single product 	<ul style="list-style-type: none"> • Minimal bureaucracy appropriate to culture and capacities of farmers • Certification of whole farm with all its production units
<ul style="list-style-type: none"> • Certificate is owned by group or processor/trader • Consumers or buyers are not involved in the system • Organic certificate belongs to the group or processor/trader • Farmers have similar production structure (products and structure) • Centralised marketing 	<ul style="list-style-type: none"> • Certificate is owned by individual farmer • Consumers or buyers are important members of the system • Organic certificate belongs to each single farmer • Farmers have diverse production structure
<ul style="list-style-type: none"> • Economic objectives for certification dominate 	<ul style="list-style-type: none"> • Diverse forms of marketing (individually, centralised) • Beside economic objectives food security and sovereignty as well as a fair price are central
<ul style="list-style-type: none"> • Capacity building processes often mechanical and in top-down-fashion • Based on Internal Control System (ICS) 	<ul style="list-style-type: none"> • Capacity building as integral and dynamic process with high priority • Based on peer review visits and social control
<ul style="list-style-type: none"> • Managers and field officers/inspectors of ICS within farmer group ensure compliance with organic standards • "Inspections" are the tool of verification 	<ul style="list-style-type: none"> • Everyone (farmers, consumers, students etc.) in the group is trained to ensure compliance with organic standards • "Peer reviews" with support activities are the tool of verification
<ul style="list-style-type: none"> • Decision on certification is taken by third-party certifier (centralised) 	<ul style="list-style-type: none"> • Decision on certification is taken by peer-review-committee with alternating participants of group (decentralised)
<ul style="list-style-type: none"> • Often need for compliance of system with governmental regulations of import country 	<ul style="list-style-type: none"> • Need for compliance with national regulation, if existent

Findings from four European pilot projects of group certification demonstrated that overall costs were higher compared to individual certification in the first two years and only slightly lower in subsequent years. Another challenge appeared in the integration of diverse marketing channels and documentation of individual sales by farmers at local markets (BODNÁR 2008). This is mainly due to the centralised product flow control from all production to sales units that external certification requires. Hence, the more diversified farms in a producer group, the higher are time and cost investments for the centralisation of information (VAN DEN AKKER 2008).

GONZÁLEZ and NIGH (2005) show that associations and cooperatives formed with the purpose of organic group certification in Mexico are increasingly subjected to the dictation of certifiers' rules. In numerous farmers cooperatives, third-party certification has resulted in a farmers' deprivation of autonomy and responsibility to develop quality management and standards. These hierarchical patterns often appear in combination with contract production which defines the relation between a group-certified cooperative and a large agribusiness. In such schemes, typical for conventional agriculture, farmers are more or less industrial workers on their own fields (GÓMEZ TOVAR et al. 2005, GONZÁLEZ and NIGH 2005). As NIGH (1999) puts it, this form of organic agriculture "*[...] offers no possibility for the growth of local agency and social capital, so crucial to rural food and economic security.*" Furthermore, MUTERSBAUGH (2002) adds an important critique on the centralisation of responsibility in group certification schemes. He argues that producer organisation leaders become burdened with new job categories in the form of field officers or inspectors in the ICS. As a result, the social context of organic production is altered on cooperative as well as village level. Concerning the practice of capacity building and learning processes, GONZÁLEZ and NIGH (2005) doubt that external technical advisors hired for selective trainings are able to foster any process of social learning, empowerment or organisational independence of farmers. Instead, they conclude from Mexican case studies that the imposition of formal rules is meant to fail in creating institutions that entail sustainable development solutions. In contrast, MAY (2008) concludes in his comparison of PGSs and third-party certification systems that the majority in the organic community perceive both systems as complements rather than competitors. He pronounces that participatory certification is an important contribution to the discussion about how to foster participation of stakeholders in organic guarantee systems.

2.4 The Mexican organic movement – from global to local

2.4.1 Development and status quo of the organic sector in Mexico

Since 1996 the number of Mexican organic producers has grown ten-fold, reaching 128,862 in 2008. Total organic area increased to 400,000 hectares in the same time (Figure 8). 95% of the people in Mexican organic agriculture are working in the primary sector (GÓMEZ CRUZ et al. 2010). Small resource-poor farmers, about 50% of indigenous origin, represent 98.6% of the country's organic producers and are responsible for 68.8% of value creation by Mexican organic exports (BAUTISTA and RIVAS 2010, WILLER et al. 2009). Organic farmer households own 2.25 hectares on average and are mostly organised in cooperatives working with group certification in order to facilitate access to organic markets. The second group are large-scale producers that mostly own private businesses and cultivate areas between 100 and 2,000 hectares (GONZÁLEZ and NIGH 2005, Willer et al. 2009).

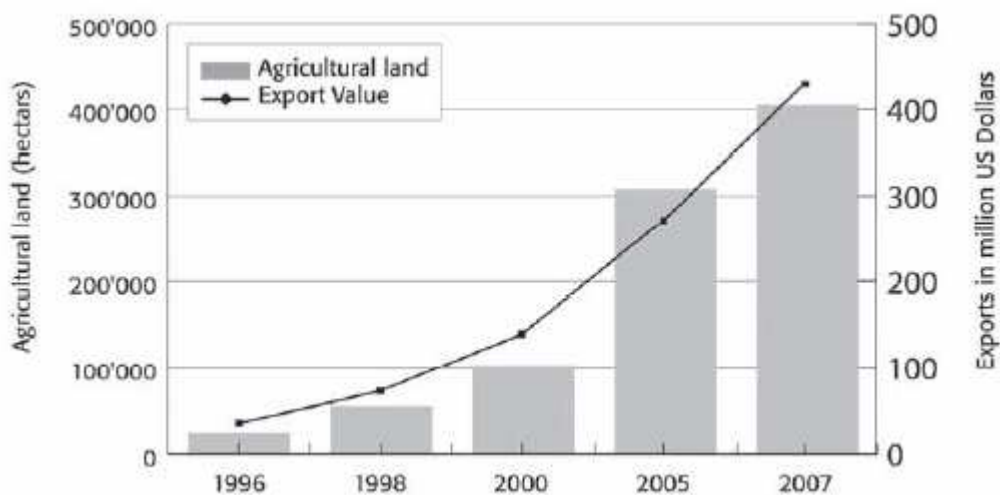


Figure 8: Development of organic agricultural land and export value in Mexico from 1996 to 2007 (WILLER et al. 2009)

Mexico is world's leading organic coffee producer with about 80% of its organic production derived from this cash crop (WILLER et al. 2009). While coffee cultivation is experiencing intensification, area and diversification of fruit and vegetable production are increasing and becoming a strategic activity in recent years. In 2008 the latter cultivars occupied almost 20% of the organically cultivated area. The largest part of this share is cultivated with avocado, mango, coco and citrus fruits. Chard, sesame, celeriac, red beet, eggplant, broccoli, pumpkin, squash, chili, onion, maize, beans, tomato, potato, cucumber and carrot are most common in organic vegetable production. They have reached a share of 5.71% of

total Mexican vegetable cultivation in 2008, while some non-traditional fruits as avocado, mango and rambután already represent between 30 and 80% (GÓMEZ CRUZ et al. 2010). Organic livestock production is still a small niche and mostly marketed nationally together with conventional meat without differentiation (GÓMEZ CRUZ et al. 2009).

With an export volume of about 85% of its organic production, Mexico is a major export country of organic products in Latin America. Organic exports have been estimated at 430 million US Dollars³ in 2007 (Figure 8). This share is meant to grow further due to rising foreign demand in Europe and the USA, Mexico's major target countries. Major organic crops leaving the country towards Europe, the USA and other nations are coffee, cocoa, vegetables, sesame seeds, blue corn and maguey. About 10% of the organic production go into conventional markets without any differentiation to other products. In the internal market only 5% of total organic production is sold, mainly in specialty shops in big cities, organic markets and fairs or tourist areas. In these market channels only organic coffee, fruits and vegetables and a growing number of processed products as jams, chili sauces, milk and honey are presently available (ASERCA 2005, WILLER et al. 2009). Besides low diversity and inconsistency in domestic supply of organics, GÓMEZ TOVAR et al. (2005) identify a lack of consumer knowledge and awareness combined with low purchasing power as major cause for the lack of demand. On the other hand, the internal market has shown significant growth in the past five years. Furthermore, the foundation of the Mexican network of organic markets in 2004 is a strong initiative that already counts 20 farmers markets across the country (WILLER et al. 2009).

In Mexico, organic agriculture had its origin in the 1980s. It first started off in organic coffee production with the first exports from Oaxaca to Europe in 1985. German and Dutch emigrants in Chiapas started the first organic coffee fincas and were important promoters for organic agriculture. Foreign organic certification bodies rapidly entered the market and today organic agriculture represents a strategic business area (ASERCA 2005; HIDALGO et al. 1991; NELSON et al. 2009). On the other hand, the widespread conversion of subsistence agriculture into organic production of cash crops was promoted by non-governmental organisations and the catholic church at that time. Due to their basically "natural" production without agrochemicals, many resource-poor farmers found it easy to take the chance to pursue organic certification in order to gain access to the market. Therefore, many of them organised themselves into cooperatives and sought the newly appearing extension services,

³ 1 US Dollar = 0.726457 Euros (Average exchange rate September 2011).

offered by public support programmes. Many of the emerging production and marketing cooperations stimulated community development and offered new perspectives for marginalised farmers, mainly in the southern states of the country (HIDALGO et al. 1991; GONZÁLEZ and NIGH 2005).

GÓMEZ TOVAR et al. (2005) perceive the economic crisis of the 1980s, declining market prices of cash crops and withdrawal of public subsidies in 2000 (particularly due to the demise of the national coffee institute INMECAFÉ) to be important factors for the union of organic smallholders. GONZÁLEZ and NIGH (2005) also attribute the successful market entrance of Mexican marketing projects to the social capital present in indigenous communities with a long tradition of cooperation among their members. They stress the importance of the connection between the organic movement and Indian identity in the Mexican context, which supports the political and cultural dimension of organic agriculture.

2.4.2 Certified organic agriculture – the Mexican bimodal split

The Mexican perception of certified organic agriculture is oriented towards an export-strategy motivated by foreign exchange concerns and a rather short- than long-term solution. This becomes obvious in the lack of a national organic strategy. Furthermore, primarily international and mainly non-governmental funding has supported smallholder certification projects, such as Bread for the World, Rockefeller and Rodin of the USA, as well as various multi-lateral donors (GÓMEZ TOVAR et al. 2005). In comparison, the EU implemented goals as nature conservation or public health into the European Action Plan for organic agriculture and budgets large sums for support schemes for certified organic farmers (LAMPKIN et al. 2001). Most probably the lack of an integral approach to organic agriculture in Mexico is also responsible for the underdeveloped internal market (GÓMEZ TOVAR et al. 2005).

However, in order to pursue its organic export-strategy, Mexico passed the first organic regulation in 2005 (*Ley de Productos Organicos*, 26 April 2005) in order to fulfil increasingly strict criteria of equivalency with the US and EU organic standards. It regulates Internal Control Systems for group certification, includes participatory certification and aims at national organic market growth and the implementation of a national control system (WILLER et al. 2009). However, the law is currently under revision and it still remains unclear whether it will serve the majority of small, cooperatively organised organic farmers or rather privilege large producers in order to pursue economies of scale in organic exports (NELSON et al. 2010). The importance of the orientation of the revised organic law becomes clear by the

fact that 98% of certified Mexican farmers are characterised as “small organic producers in producer co-ops”, while only 2% are “large private agroindustrial organic producers (GÓMEZ TOVAR et al. 2005). The Mexican certification modalities of either group or individual third-party certification (WILLER et al. 2009) fit this bimodal distribution. In this sense, the establishment of Internal Control Systems (ICS) of group certification schemes represents a major trait of organic farmer associations in Mexico. Fundamental differences among these modes of certification result in practices that clearly burden smallholders and favour large producers, as Mexican case studies demonstrate (GÓMEZ TOVAR et al. 2005, GONZÁLEZ and NIGH 2005, MUTERSBAUGH 2002). These observations are in line with several evaluations of ICS in different countries (2.3 Participatory and group certification – a comparison). In total, 21 certifiers operated in the country in 2004. 74% of the organically certified land in Mexico has been certified by foreigners, including German, Italian, Swiss, Swedish and Guatemalan agencies. Major operators among them are Bioagricert (39% of Mexican organically certified land), OCIA International (34%) and Quality Assurance International (26%). The only certification body with Mexican origin is Certimex, certifying 25% of Mexican organically certified land. The rapid expansion of certification agencies (only eight in 2000) demonstrates the importance of certified organic production in Mexico (ASERCA 2005, GÓMEZ TOVAR et al. 2005).

Still, the Mexican state shows little action in supporting organic farmers. Indirect support is provided by the Mexican Ministry of Agriculture (SAGARPA), who facilitates participation of small organic producers at the annual national organic trade fair “Expoorgánico” in different cities in the country and similar events of exchange and promotion of organic trade. Farmers receive assistance in establishing trade relations, product presentation and other services of capacity building (ASERCA 2005). Furthermore, a public-private partnership among the Ministry and the Mexican bank of foreign trade BANCOMEXT has been established to support farmers in accessing export markets. Their programme of technical assistance (Programa de Asistencia Técnica) is promising to refund 75% of farmers’ organic certification cost in short term (WILLER et al. 2009). Another support scheme is being administered by the Mexican development bank FIRA (Fideicomiso de Intereses Relacionados con la Agricultura) since 2004. The programme includes credit as well as technical assistance to young organic cooperatives entering the process of organic certification. However, FIRA’s extension services (*despachos*), who directly advise farmer groups, have been criticised for the top-down application of a development strategy that mainly induced additional burdens and restrictions for farmers groups (GONZÁLEZ and NIGH 2005). From the listed examples it becomes clear that the support schemes Mexico offers in

the organic sector are primarily export-oriented. The lack of assistance, explicitly designed for small-holders and different local conditions, is not a singular political phenomenon of Mexico but also present in other Latin American countries, as CÁCERES (2005) shows in Argentina.

2.4.3 From third-party to participatory certification

Although Mexican organic agriculture has developed in two waves, the pioneering forms of smallholder indigenous fair-trade initiatives have not been replaced by the emergence of large agribusinesses. Instead we find a co-existence of both in the country (GÓMEZ TOVAR et al. 2005). In the 1990s smallholder groups operating with organic group certification could profit in many cases from the experience of young pioneers who raised the first organic coffee coops in the 1970s. They offered their services for organic transition with a focus on local farmers' realities. Nevertheless, very soon the influence of increasing centralisation and harmonisation of international certification processes created constraining requirements for small farmers and dramatically influenced the internal structure of their associations (GONZÁLEZ and NIGH 2005).

The resulting negative consequences (2.3 Participatory and group certification – a comparison) have forced many farmers to search for alternative ways of marketing organic products independently from third-party certification. By the end of the 1990s, the increasing Mexican export orientation received a negative notion. Consequences of an inhibited internal market development and farmers vulnerable to fluctuations in commodity prices appeared in public and political discourse. Crisis in the sectors of coffee and cocoa, major Mexican cash crops, have demonstrated dramatic effects of farmers' dependency on foreign markets (BACON 2005, LYON et al. 2010). However, today coffee is still cultivated on more than 67% of total agricultural land, which considerably limits Mexico's food sovereignty (GÓMEZ CRUZ et al. 2010). This fact partly explains the import of one third of the nationally consumed maize, the principal Mexican staple crop (ESCALONA AGUILAR et al. 2010).

An important initiative encountering this precarious reality of Mexican agriculture, represents the formation of local organic production-consumption networks. In 2004 the Mexican network of organic markets *Red Mexicana de Tianguis y Mercados Orgánicos* has been founded. It resulted of a joint effort of organic producers and consumers, universities, governmental institutions as well as NGOs and initially started with four organic markets (NELSON et al. 2010, GÓMEZ CRUZ et al. 2009). Today it counts 20 organic associations or other forms of producer-consumer networks in the states of Mexico, Tlaxcala, Morelos,

Oaxaca, Veracruz and Chiapas as well as ten more which are just in the stage of foundation (Figure 9). Most of them initiated an organic farmers market where they commercialise their products. The network is a member of IFOAM and has been supported financially by the Canadian NGO *Falls Brook Centre* since its foundation (ASERCA 2005, GÓMEZ CRUZ et al. 2009, NELSON et al. 2010).



Figure 9: Mexican states with associations of the Mexican network of organic markets (adapted from ESCALONA AGUILAR 2009)

The rapid growth of the network indicates a high demand and acceptance of consumers. All of the markets have developed in urban areas, which emphasises the direct interaction of farmers with consumers that seek sustainably produced food. Further objectives of the new network are the diffusion of the organic philosophy and the creation of multicultural places of exchange (NELSON et al. 2010). Their holistic vision and the inherent multiplicity of aims are clearly expressed in their self-portrait:

“...community building is at the heart of Mexico’s local organic markets. They are not conceived of as simply places where people go to buy and sell goods. Rather, they are meant to be spaces where commerce and consumption can become a political, social, ethical, educational, and enjoyable act.” (GÓMEZ CRUZ et al. 2009)

The commitment to participatory certification is an important principle of these organic markets. Hence, the network has developed its first guidelines for organic standards

(Lineamientos técnicos para la operación orgánica agropecuaria) based on past years' experiences of PGS pilot projects in some of its member markets. Still, every member has its individual character and is advised to locally adapt standards, norms and processes based on these guidelines (GÓMEZ CRUZ et al. 2009). To date in two markets efforts already show success and the first participants are about to receive organic certification (SCHWENTESIUS RINDERMANN 2010, pers. comm.). In order to cover the cost of this certification project in all member markets, the network has been granted considerable financial support for the following years in the frame of the new programme of the Mexican Agency of Health and Food Safety (HERNÁNDEZ 2010, pers. comm.). A considerable part of the network's budget goes into realisation of a vast programme of workshops, lectures and other events of capacity building, including offers for the whole producer family with their children. In order to foster the associations' integration and promotion in local society, resources are also dedicated to regular cultural events with dance and music as well as fairs. Apart from the individual logo, each organic association uses the network's emblem which gives a uniting identity to its members (Figure 10; GÓMEZ CRUZ et al. 2009).



Figure 10: Emblem of the Mexican network of organic markets (GÓMEZ CRUZ et al. 2009)

This Mexican case of participatory approaches to organic certification can be related to the concept of *social agroecological change*, in contrast to third-party certification. It is defined by CUÉLLAR PADILLA (2008) as follows:

“...the complex of regenerating processes of the local social network, based on the ecological management of natural resources, socioeconomic mechanisms of solidary circulation, that form intrinsic potentials of the involved actors and the consciousness of their capacity to build relations of solidarity and mutual support”.

This concept is reflected in the emergence of the Mexican organic markets from social organisations, academic, cultural, religious groups and civic organisations. United, these initiators pursue the same agroecological values (ESCALONA AGUILAR et al. 2010). Explaining their motivations for such undertaking, BOUCHER (2000) mentions the underlying “value of proximity” reinforcing the birth of alternative initiatives to certification. He distinguishes four dimensions that build the basis for the organisations success: the feeling of belonging, the transmission of tacit knowledge, the effect of permanency and the force of individual actors.

Another important factor conditioning the success of these young Mexican PGS groups is the Mexican organic law, implemented in 2006, which recognises participatory certification as a viable alternative to third-party certification in Article 24 (NELSON et al. 2010). Such a friendly legal environment is quite rare and only in Bolivia, Brazil and Uruguay PGSs share the same status. The EU and the USA still don't have implemented the PGS into their legislations, which might partly explain their low presence in these countries (ALONSO VILLALON 2008; 2.2.4 Making a difference – global growth and institutionalisation of).

2.5 Lessons from Mexican PGS case studies

2.5.1 Characteristics of Mexican organic associations

ESCALONA AGUILAR (2009) discusses socioeconomic characteristics of a sample of 72 producers in six organic associations (San Cristóbal, Oaxaca, Xalapa, Tlaxcala, Texcoco, Cuautla) of the Mexican network of organic markets (Table 7). He shows that on average 65% of the interviewed persons are female, in one case even 90% of farmers are women. The crucial role of women in these markets as coordinators, promoters, networkers and organisers of learning processes is also highlighted by GÓMEZ TOVAR et al. (2009). Among all case studies of organic associations by ESCALONA AGUILAR (2009), less than 15% of the producers are elder than 55 years and in two markets more than 50% are between 20 and

35 years old. The author attributes the high number of young participants to the fact that students are also participating as producers in some markets since universities are involved. Regarding marital status, about 80% of participants are living with a partner either in matrimony or informal cohabitation. Educational levels are quite diverse among the six case studies. Only two markets appear to have about 10% illiterate participants, while in four markets between 20 and 30% of producers have finished high school. The study reveals that a mean share of 33% with basic educational level is next to a group almost twice as large with higher level. The author concludes that the diversity of educational background of producers is linked to different motivations for participation. This becomes visible in their different roles within the association and also challenges social interactions among members. An example therefore is the fact that farmers from the countryside have less time and left power to invest into the development of the organic producer group, while members with high education show strong engagement in organisation and dynamisation activities (ESCALONA AGUILAR 2009).

Table 7: Selected socioeconomic characteristics of producers in six organic associations of the Red Mexicana de Tianguis y Mercados Orgánicos, n=72, mean values (adapted from ESCALONA AGUILAR 2009)

Gender	65% female ^a
Age	between 35 and 47years ^b
Marital status	
matrimony or informal cohabitation	80% ^a
single (celibate, divorced, widowed)	20% ^a
Level of education	
primary school	17% ^a
secondary school	16% ^a
high school	17% ^a
professional education	46% ^a
illiterate	3% ^a

^a Arithmetic mean of six markets. ^b Range of arithmetic means of six markets.

ESCALONA AGUILAR (2009) considers income from organic sales as an important factor for the associations' characterisation. He reveals a mean level of about 4,870 Mexican Pesos⁴ among all markets⁵. However, differences among respondents' answers are fundamental, given the share of 60% and more among them who earn below 3,000 Mexican Pesos² in

⁴ 1 Mexican Peso = 0.0557815 Euros (Average exchange rate September 2011).

⁵ The author states that the validity of the received values is questionable due to cultural reasons (ESCALONA AGUILAR 2009).

some markets. In others 50% or more earn beyond 6,000 Mexican Pesos² a month. Considering the mean minimum wage of 6,000 Mexican Pesos² in the concerned states with organic markets (Figure 9), the activity of organic marketing in the six case studies does not provide significant income for most producers. However, it is an important contribution to a family's livelihood, apart from its numerous social benefits of collective commercialisation. In fact, the majority of respondents reports improved incomes since their integration into the organic association. At the eldest of the six organic markets more than 70% earn higher incomes, a significantly larger share of producers than observed at young markets (ESCALONA AGUILAR 2009).

On the other hand, ASERCA (2009b) in their analysis show that a considerable part of organic producers of the Mexican network of organic markets and their family members pursue other professions, are waged workers on larger farms, in handicrafts or run another family business. Many of them also commercialise their products via other sales channels, as with intermediaries. In another case study of Mexican associations by NICOLÁS (2006) 20% of producers exclusively sell at the organic market and the average quantity sold of total production is 40%. Consequently, participation in the organic associations is often limited for many producers since they are forced to pursue multiple livelihood strategies.

A strong heterogeneity of the socioeconomic status among the organic producers of the compared associations as well as within each single association becomes visible from the above analysis. Another sign of individuality but also of their connection to local cultures, is reflected in the high diversity of products found at the markets. Among processed products, handicrafts, cosmetics, medicinal and cleaning products as well as freshly prepared meals, fresh products (eg. vegetables, fruits) are the strongest represented category with a mean share between 29-50% (ESCALONA AGUILAR 2009).

The preparation of local hot dishes at the streets is a typical characteristic of the Mexican food culture that also becomes visible at the organic markets of the studied associations. Tradition and creative innovation are combined in the creation of meals with local ingredients, which often re-introduce old recipes. An example for such meals are *tamales*, in banana leaves boiled maize pastry with a huge variety of locally different stuffings. This vivid food culture at the markets importantly promotes biocultural diversity in consumers' local diets. (ASERCA 2009b, ESCALONA AGUILAR 2009). Furthermore, the offer of fresh meals is an important factor not only for the lively atmosphere but also for the success of the organic markets. It creates social spaces where people meet for eating and spending time together (GÓMEZ CRUZ et al. 2009).

The diversity of fresh products ESCALONA AGUILAR (2009) reports from his six case studies comprises 134 different products in the course of a year. Among them there are 50 species of vegetables, 30 aromatic plants, 30 fruits, 13 animal products, four legumes and cereals and eight other species. Among the fresh products offered about 25% are of Mesoamerican origin (ESCALONA AGUILAR 2009). The importance of organic smallholders for in-situ conservation of plant-genetic resources in the Mexican context has already been highlighted by TOLEDO (1993) almost 20 years ago. At the same time he stresses that the cultivation of rare native varieties creates an income opportunity for marginalised smallholders.

2.5.2 Producers' perceptions of organic agriculture in Mexican organic associations

ESCALONA AGUILAR (2009) asked a sample of 72 producers of six analysed organic markets for their understanding of what is *organic*. He found that a mean share of 65% of respondents appears to associate the concept with the absence of the application of agrochemicals in production. In contrast, only a minority do perceive organic agriculture in a holistic way of living and producing rather than reducing it to the organic product's character. The author concludes that it is an important element of PGSs to foster awareness of the multiple dimensions of organic agriculture, away from only technical perspectives and rather including social and political ones. However, at the same time, he notes a considerable lack of technical information on organics that he observed in workshops where basic characteristics of organic agriculture have been misunderstood and defined wrongly (ESCALONA AGUILAR 2009).

Furthermore, ESCALONA AGUILAR (2009) shows in his study that health (means between 28-32% of interviewed farmers) and environmental (means between 3 and 45%) reasons are mentioned frequently as motives for organic agriculture. Social reasons with respect to collective organisation, collaboration as well as fair trade relations too play an important role for many respondents (means between 20-40%). Cultural and economic motives appear to be underrepresented. On the contrary, the respondents' motives for their participation in collective organic marketing are predominantly of social (means between 29-58%) or economic nature (means between 35-50%). Environmental and health reasons are rarely mentioned.

Based on this analysis of different motives for organic agriculture and collectively organised marketing, ESCALONA AGUILAR (2009) identifies three different forms of participation in the organic association that producers pursue (Figure 11). There is an important group with a

high grade of social awareness. Apart from alternative commercialisation gains, they pursue the benefits of a collective movement that defends a certain quality of life. Secondly, the group with primarily economic motives mainly takes advantage of higher profits due to the organic price premium and the absence of intermediaries. The third group can be located in between the latter extremes. It mainly consists of small farmers who sell a part of their production in order to complement their family incomes but show limited involvement in other collective activities. The author puts into question whether the third group is prone to move stronger towards business orientation or a more holistic perception of organic production and trade. In the light of the discourse on disadvantages of conventionalisation in the organic sector, these producers might be particularly exposed to the dynamics of the capitalist perception of the organics, as discussed by ALLEN and KOVACH (2000) and others (2.1.3 Limitations of external organic certification).

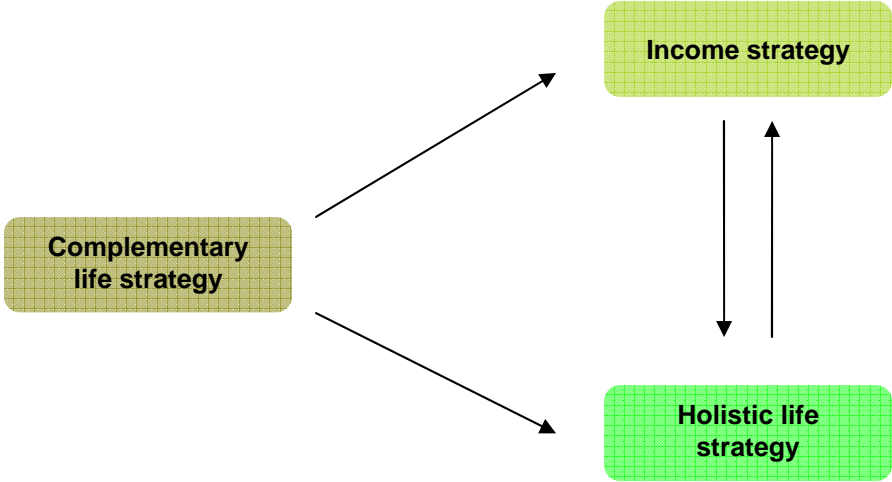


Figure 11: Different strategies of producers’ participation in organic farmers associations in relation to their principal motives of organic production and commercialisation (adapted from Escalona Aguilar (2009))

2.5.3 A young movement – benefits and challenges of Mexican organic associations

The Mexican Ministry of Agriculture has been asking small samples of three to six vegetable and fruit producers for their perception of benefits, challenges, factors of success and future opportunities in three selected associations (in Oaxaca, Tlaxcala and the Federal District of Mexico) of the Mexican network of organic markets (Table 8), published in their monthly journal *Claridades Agropecuarias* (ASERCA 2009).

The studies of ASERCA (2009) and ESCALONA AGUILAR (2009) on cases of the Mexican network of organic markets coincide in several findings. As such, both regard the lack of organic seeds as a major challenge. On the one hand, a huge number of varieties are not available in large quantities, while other species of Mexican origin, as tomatoes, aren't at all cultivated in different traditional varieties. Furthermore, the advantage of a high diversity of processed products, as warm dishes, at many markets is at the same time a burden due to the scarcity of input materials in organic quality. As a consequence, in many cases consumers complain about a quantitatively limited offer. Many producers relate these deficiencies to the problem of transport since they live more than 50 km away from the marketplace. Hence, they have to cope with long journeys and limited space in means of public transport or organise a collective vehicle with colleagues.

Apart from these challenges observed in both studies, ESCALONA AGUILAR (2009) discusses problematic social aspects, not identified at all by producers themselves, from an outside perspective. Among them there is the problem of participation in the association's activities other than commercialisation, as on-the-field-training, celebrations or others. In some associations more than 70% of the members report to participate, while in others less than 50% do so. Concerning the active involvement in a working group with a specific task, in 50% of the associations only 30% report participation. Hence, the author concludes a lack of responsibility that limits the realisation of strategic development and various management tasks that guarantee the continuity of the association. At the same time he supposes that in some cases vertical decision processes create conflicts and are a reason for the decreasing willingness of producers to participate. Another important aspect is the role of women who make up for 65% of the associations' members. Even though, usually several family members are involved in organic commercialisation, it is usually the woman who realises the major workload and takes the related decisions. The implied benefit of female empowerment is often invisible since women's traditional responsibilities for the reproductive work limit their time and energy for further engagement in the association (ESCALONA AGUILAR 2009). Another aspect limiting the processes of collective action is the strong heterogeneity in members' age, origin, education level or their products, as ASERCA (2009) state. On the other hand, ESCALONA AGUILAR (2009) argues that the resulting diversity of opinions and tensions within an association is what maintains the dynamic and supports its continuous retro-alimentation and re-configuration.

Table 8: Perceived benefits, challenges, factors of success and future opportunities by producers in three Mexican organic associations (adapted from ASERCA 2009a and 2009b)

	Federal district (México D.F.)	Tlaxcala	Oaxaca
Benefits	<ul style="list-style-type: none"> - cultivating healthy products for sale as well as self-sufficiency - conservation of agricultural land - new income source - raising consciousness of consumers - consumers' appreciation of producers' work - participatory organic certification 	<ul style="list-style-type: none"> - higher incomes - higher production volumes - capacity to transmit knowledge and experience to other producers - access to capacity building on fruit processing 	<ul style="list-style-type: none"> - higher incomes - higher production volumes - higher product prices - capacity of organic production - organic certification - control and benefit of whole value creation chain (no intermediaries) - propagation of own seeds - improve quality of life of producers
Challenges	<ul style="list-style-type: none"> - stagnation of sales and income - lack of market - lack of seeds - deficiencies of distribution - lack of consumer awareness - strong humidity - pests - transport - limited production capacity - cost of production materials 	<ul style="list-style-type: none"> - resistance to processes of change by own members of association - cost of compost production (bocashi) - improvement of product presentation - renovate orchards - limited production area 	<ul style="list-style-type: none"> - cost of soil management, irrigation, labour, harvest, transport and storage - lack of manual labour - pests and diseases (especially <i>mosca blanca</i>) - lack of seeds - lack of communication among members - lack of resources for extension of production - consumers lack knowledge of organics - limited connection among producers

Factors of success	<ul style="list-style-type: none"> - diverse offer and complete basket of staple food - well organised logistics of transport, storage - strong integration of academics, local public institutions - strong engagement in strategic development by key actors 	<ul style="list-style-type: none"> - union of producers in cooperatives - organic price premium - innovative products: marmalades, distillates 	<ul style="list-style-type: none"> - high demand - union of producers - access to seeds - increased soil fertility
Future opportunities	<ul style="list-style-type: none"> - improve product presentation - orientation at consumers' preferences - establish demonstration plot - increase production volume - enter new markets 	<ul style="list-style-type: none"> - capacity building on rainwater storage - connect with other organic farmer groups - establish demonstration plot - open new organic market in the state 	<ul style="list-style-type: none"> - improvement of packaging and labelling - access to processing machinery - increase production and sales - find new points of sale and access export markets

The Mexican Ministry of Agriculture calls the organic associations “nuclei of knowledge”. From their analysis they conclude that the organic associations already have become groups of producers with high capacities in organic agriculture since the formation of their network in 2004 (ASERCA 2009b). Some of them, as the association of Chapingo, in the Federal District, had particular advantages from the close collaboration with universities which facilitated continuous feedback between practice and theoretical reflection, as concluded too by NELSON et al. (2010). Interestingly, only producers in Chapingo listed the financial and technical support by various institutions among the factors of success (Table 8). However, close analysis shows that in all cases NGOs or private enterprises have been important catalysts of success, from the very start as well as during the associations’ evolution. It is important to stress that governmental support has been rare and practically didn’t influence at all the development of the associations. Regarding the respondents’ priorities for future development, they express the wish to expand their commercialisation activities in all three case studies (ASERCA 2009b; Table 8).

2.5.4 Participatory certification in Mexican organic associations

In Mexico participatory certification has its origins in the local organic associations that form the Mexican network of organic markets. The need for systematic quality assurance in the associations increased with their rapid growth (NELSON et al. 2010). However, at the time of this research, just three members of the network have started the process of participatory certification, while the others are at an intermediate development stage (HERNÁNDEZ 2010, personal comm.). In the network’s initial phase all of the associations implemented their individual quality guarantee mechanisms. By then, many of the approaches already contained various elements of participatory certification (application form, visit at farmsteads, discussion on integration in plenaries etc.), while some worked with external certifiers and had implemented processes comparable to Internal Control Systems. In some of the associations, internal critics claimed the missing integration of consumers, which is a central element of a PGS (ESCALONA AGUILAR 2009).

A lack of consumer integration into associations and low communication of organic guarantee processes is reflected in their low knowledge about participatory certification. However, between 43-73% of consumers in six analysed markets show interest in organic certification. Hence, there seems to be important potential for the promotion of participatory certification schemes and the raising of consumer acceptance by an improved information policy. In this sense, ESCALONA AGUILAR (2009) cites the example of an association presenting their system of participatory certification at the entrance of the organic market.

On the other hand, consumers seem to be very heterogeneous in their opinion on whether a sign of organic certification on the products is necessary or not. Those, who rejected, referred to a basis of trust and value of proximity that matter to them in such small markets. They rather believe in honesty built on a personal relation to the producer, than relying on documents and seals that might be faked. Consumers who prefer to buy products with organic certification, justify their answer with the need for an official sign of trust and the need to hinder fraud, especially in processed products (ESCALONA AGUILAR 2009). In this sense, some organic associations are discussing whether participatory certification is sufficient or not. In Oaxaca, for instance, many consumers are tourists and ask for an internationally recognised seal of organic third-party certification. On the other hand, the members of Chapingo perceive participatory certification as adequate since local consumers are their focus (ASERCA 2009a).

The Mexican network of organic markets is still in a development process of participatory certification, trying to integrate the young experiences of its pioneering associations. The members don't perceive this alternative form of certification as a final aim in itself, but rather as a medium that stimulates collective and participatory actions. The aim is to support a change in the widespread perception of "food as a commodity" towards more humanity and proximity in production and consumption. A consolidation of the PGS in the network is an urgent objective in order to gain public recognition, from local to national level. Moreover, it can improve opportunities of public support for local organic production models of small farmers (ASERCA 2009b). Even so, dependence on donors is also regarded as a major limitation by NELSON et al. (2010), who claim the necessity of a reliable budget for the future development of the young PGS groups.

3 Research aims

3.1 Research problem

To date Participatory Guarantee Systems (PGSs) are developing fastest in the southern hemisphere of the world. They indicate a particularly strong need for an answer to the urgent call for more democratic, place-based and culturally respectful regulation systems (IFOAM 2008a). Despite promising success of participatory approaches to certification, existing systems face important internal and external challenges. Countries as Brazil, Bolivia, Uruguay, Mexico and India are pioneers in equal legal recognition of organic labelling for both third-party and participatory certified products. PGSs are distinct from third-party certification systems in their aim to connect producer and consumer as close as possible at the origin of organic food production. They fit small scales and have an important meaning for local market development (IFOAM 2008a, NELSON et al. 2009). However, major organic producers and consumers as the EU, USA and most Latin American countries haven't recognised the PGS in their legislation on organic production. Furthermore, PGSs don't comply with the international ISO 65⁶ standards accepted by major organic markets as principle for their certification systems. Participatory certified products are theoretically not allowed for export due to lack of third-party verification by an accredited certification body. However, since the PGS is designed for local scales, these legal differences are of minor practical relevance. Still, there's a need to increase recognition of the PGS, especially by official certification bodies, traders, politicians and by the whole organic community (IFOAM 2011c; KHOSLA 2006; NELSON et al. 2010).

In Chiapas, the most southern state of Mexico, PGSs are still in a young stage. Their development conditions are promising due to the recognition of PGSs as equal to third-party certification by the Mexican organic law since 2006 (NELSON et al. 2009; LARA 2010, pers. comm.). Systematic research on PGSs has been conducted in India, Mexico and Brazil (KHOSLA 2006, NELSON et al. 2009, ZANASI et al. 2009). However, Mexico counts with only few publications on participatory certification. NELSON et al. (2009) published the first article about PGSs in Mexico and a doctoral thesis of the University of Chapingo provides a comprehensive basis on the evolution and role of the organic associations and markets in Mexico (ESCALONA AGUILAR 2009). It discusses the initial phase of the young project of participatory certification

⁶ The International non-governmental Organisation for Standardisation develops internationally recognized standards for efficiency, safety and harmonisation of production and provision of products and services in order to facilitate international trade. They also include norms for the work of accreditation bodies in the organic sector (STIFTUNG FÜR ÖKOLOGISCHEN LANDBAU 2003).

of a representative sample (n=72). The Mexican Ministry of Agriculture too analysed a small sample of these organic associations in their monthly journal *Claridades Agropecuarias* (ASERCA 2009a; 2009b). Both publications tackle farmers' perceptions on particular aspects of organic agriculture and certification. Finally, some related working papers and university theses give further insights into the development of PGSs in the country (ESCALONA AGUILAR 2009, GAMBOA 2007, NICOLÁS 2006, SCHWENTESIUS RINDERMANN 2011).

ESCALONA AGUILAR (2009) and ASERCA. On the whole, research on the perceptions of organic certification by farmers is rare (ALBERSMEIER et al. 2009, ZANASI et al. 2009). In their results ZANASI et al. (2009) identify economic motivations as the main driver for Brazilian producers joining a PGS, while other research results comprise profiles of such farmers characterised by an integral and holistic vision of agriculture (CUÉLLAR PADILLA 2008). Hence, there is an interest to investigate whether the motives for producing and marketing organic crops differ from those of farmers operating with external certification. Moreover, it seems important to know whether both groups of farmers face similar socioeconomic conditions on individual and household level. Among the potential benefits of a PGS, those within the social dimension are by their nature and due to a lack of attention in science and public least visible. Nevertheless, the social dimension is inherent to the PGS's principles (2.3.1). Its relevance is stressed by ZANASI et al. (2009) and NELSON et al. (2009) who discuss the influence of PGSs on community development in their findings of case studies from Brazil and Mexico. However, there's a need for more evidence on the role of social cohesion within farmer organisations working with PGSs compared to those certified by a third party.

3.2 Research questions and hypotheses

In the context of the situation of participatory certification (3.1) I formulated three research questions (RQ 1-3). My hypotheses are based on literature review and a profound analysis of the local situation of participatory certification in Cacahoatán (Box 2). They consist of dimensions, variables and indicators for data collection (4.3 Data collection).

Box 2: Research questions with hypotheses

RQ 1: Which socioeconomic differences do exist between participatory and externally certified farmers in Cacahoatán?

H1 Farmers with participatory (A) and external (B) certification don't differ in their socioeconomic status at individual and household level

H1a Age

H1b Civil status

H1c Level of education

H1d Degree of organisation (membership in eg. associations, cooperatives)

H1e Land property

H1f Employed labour force

H1g Principal income source

H1h Principal product marketed

H1i Principal sales channel

RQ 2: How do perceptions of organic agriculture differ between participatory certified farmers and farmers certified by an external third party?

H2a. Farmers with participatory (A) and external (B) certification share the same motives for converting to organic agriculture

H2b. Participatory certified farmers don't have a stronger agroecological attitude than externally certified farmers

RQ 3: How do perceived benefits and challenges of organic certification differ between participatory certified and externally certified farmers?

H3a. Participatory certified farmers (A) observe the same sort of benefits and challenges of organic certification than externally certified farmers (B)

H3b. Farmers in PGSs (A) don't perceive more social benefits of the certification process in their organisation than those with external certification (B)

The focus of research has been developed in accordance with my partner research institute ECOSUR (El Colegio de la Frontera) in Tapachula and in exchange with researchers from the University of Chapingo as well as with the IFOAM PGS task force. Research aims take into account the stakes of my research partners, the farmer groups in the network of Mexican organic markets and those working with external certification. Apart from scientific objectives, results are fed back to my research partners, offering useful information which may support development planning in farmers' collective organic marketing initiatives.

3.3 Research objectives

An objective of the study is to provide a socioeconomic characterisation of small farmers marketing their organic products with participatory certification in Cacahoatán. The profiles contribute to an orientation of future development in local PGS groups in Chiapas and other regions and countries. Furthermore, findings reveal whether farmers certified through a PGS do share organic ideals stronger than those certified by a third party. A comparison of their central motives for organic agriculture and their agroecological awareness in the dimensions of holistic perception, environmental and human health, economic and social values, reveal strengths and weaknesses of PGSs. In-depth analysis of my respondents' perceptions of organic certification provides an identification of advantages, disadvantages and potential solutions for challenges within the PGS. In particular, the role of normative social principles of participatory certification in relation to social cohesion among farmers is evaluated. Results allow to conclude whether specific benefits can improve a PGS's members' basic conditions for organic production and marketing and strengthen local, short and just organic food chains.

4 Methods

4.1 Study area

The municipality Cacahoatán (14° 59' N and 92° 10' W) lies in the Soconusco region in Chiapas. The most southern state of Mexico has been selected as study area (Figure 12 and 13). On one hand, this choice is due to the region's leading position in Mexican organic agriculture (BAUTISTA and RIVAS 2010). Furthermore, organic agriculture in the Soconusco has developed under third-party certification led by a strong pull of foreign demand (HIDALGO et al. 1991). Today it is one of the few regions in Mexico where alternative approaches to organic certification have developed. In Cacahoatán, close to the region's capital city Tapachula, I found a young organisation of *campesinos*⁷ working with a PGS for marketing their products. In cooperation with my partner organisation El Colegio de la Frontera Sur (ECOSUR) in Tapachula, I could identify another group of organic farmers with external certification. With the agreement of both groups it was possible to develop a method for comparison of the two certification systems and conduct data collection in three villages of Cacahoatán. Alpujarras (646 inhabitants), El Aguila (1,268 inhabitants) and Bella Vista (1,131 inhabitants) are located at 960m, 1200m and 1560m above sea level and are accessible by public transport or car in between an hour or two from the region's largest city Tapachula (INAFED 2010).

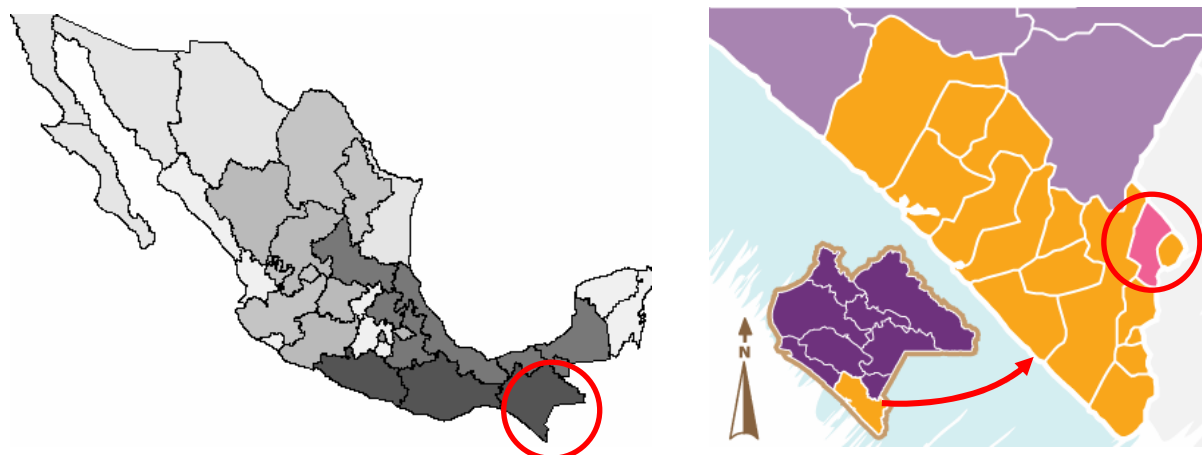


Figure 12 (left): State of Chiapas (red circle) in Mexico (INEGI 2010)

Figure 13 (right): Municipality of Cacahoatán (red circle) in the Soconusco region (orange) in the state of Chiapas (INAFED 2010)

⁷ In many Latin American countries “campesino” has its origin in social and political movements and is used for agricultural producers managing at least a small piece of own land, mainly for subsistence but also for selling produce at the market. The most adequate English translation is “farmer” (in contrast to the meaning of “farmer”, which usually refers to a producer selling all the harvest in order to achieve margins for reinversion; WOLF 1955).

Chiapas is inhabited by 3.9 million inhabitants with about one third of indigenous origin. The Soconusco makes up for 18% of Chiapas' population of which 39,033 people live in Cacahoatán (INAFED 2010, INEGI 2010). Today only about 5% of the municipality's inhabitants belong to the local indigenous Mam, a maya tribe (QUINTANA HERNÁNDEZ 2006). Cacahoatán includes the southern slopes of the mountain range *Sierra Madre del Sur* and is located in the southeastern part of the Pacific coast stretching until the boarder with Guatemala (HIDALGO et al. 1991). The region is influenced by a rainy tropical climate with monthly temperature means exceeding 22°C. Annual precipitation lies between 2,500 and 4,720 mm, with an increasing tendency towards the mountain slopes as well as in the months of September and October (INAFED 2010, POHLAN et al. 1997). High natural fertility is due to rich soils and the Pacific influence increasing humidity. The municipality's vegetation is shaped by oak-pine-forests with low human influence and little virgin rain forest. It is rich in flowing waters and known for its highly diverse fauna, particularly for butterflies, birds, bats and small mammals (HIDALGO et al. 1991). HIDALGO et al. (1991) conclude in their analysis *"The natural fertility of this region as well as its accessibility have helped the fast development of the agricultural sector"*.

Consequently, the lower parts of Cacahoatán are marked by high investment of capital and mechanisation of agriculture (HIDALGO et al. 1991). However, their farmers are in strong contrast to those in the highlands of the region who solely rely on human labour. The three villages selected for data collection are facing the latter situation, being home to almost exclusively small farmers with an average land property of about two hectares. Agricultural structure (Table 9) and human development in the Soconusco suggest that the region is among the least favoured in Mexico (INEGI 2010, CONAPO 2001).

Table 9: Selected data on agricultural structure of Cacahoatán (adapted from INEGI 2009)

Total agricultural land (ha)	9,673
Arable land (ha)	8,419
Land managed mechanically (ha)	66
Number of farms	4,781
Number of people employed in agricultural sector	5,646
Average land property per farm (ha)	2

The Human Development Index (HDI)⁸ for the state of Chiapas and the municipality Cacahoatán indicates a level of 0.69 for both which represents the last rank among Mexico's states (national mean HDI: 0.78; CONAPO 2001). Even though the Soconusco has become an increasingly important center of industry and trade (coffee and fruit trade, mining, biogas production etc.) in the last decades, there are high contrasts among regions. Thus, in 2000 51.98% of the economically active population in Cacahoatán worked in agriculture (Table 9), while only 35.54% did so in whole Chiapas. Agricultural cultivation is dominated by two-storey agroforests with cacao or coffee, leguminous trees and tropical fruit trees (HIDALGO et al. 1991).

Coffee is occupying the largest production area of Cacahoatán with 9,003 hectares in 2006/7 (INEGI 2009). Maize and beans are cultivated in great dimensions too, representing basic staples of the Mexican diet and important cash crops at the same time. Cacao follows with a comparatively small share of 80 hectares. Further important perennials are banana, citrus and other tropical fruits, chayote or avocado (Figure 14). These species are mostly cultivated in the regionally typical agroforestry systems of different size and to a great extent serve the subsistence of farmers. Livestock farming is mainly present in the lowlands of Cacahoatán, where chicken and cattle for meat and milk production are most important. Furthermore, beekeeping is an important agricultural activity (INEGI 2009).

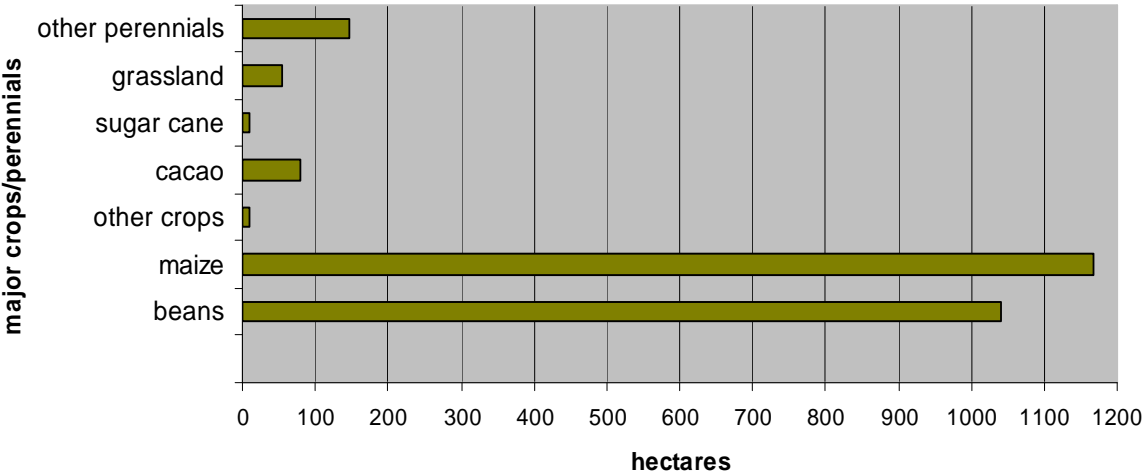


Figure 14: Cultivated area of major crops in Cacahoatán in 2006/07 (INEGI 2009)

Chiapas was one of the first Mexican states that adopted organic agriculture in the end of the 1980s. A major reason for its status as a “cradle of the Mexican organic movement” had been the still present tradition of very natural land management with only low application of

⁸ The HDI is an index for estimating the grade of development on different levels (country, municipality...) and

agrochemicals. With 29.54% of the national organic land Chiapas is the leading state. About 90% of this area is cultivated with organic coffee. In Cacahoatán, apart from coffee it is cacao, banana, rambután, papaya, chayote and honey that dominate organic production (ASERCA 2005). Today Cacahoatán is home of numerous farmer organisations that have started organic marketing initiatives.

However, sustainable forms of land use systems in the region, such as the diversified traditional *milpa*⁹, have been replaced largely by coffee-agroforestry-systems in recent decades. The trend has been accompanied by increasing land degradation due to intensification and extension of production (HIDALGO et al. 1991). NGOs, public rural development and research institutions have been reacting with initiatives to support farmers in sustainable management practices, conserve nature and protect cultural heritage (GAMBOA 2010, HERNÁNDEZ 2010, pers. comm.). Particularly a vast project with the aim of building an ecotouristic network within the regional programme RedISA (Red de Espacios de Innovación Socioambiental) is currently attracting public attention. It serves as an important engine for stimulating awareness for organic agriculture in the region, both on the side of consumers and producers (JUNGHANS et al. 2010).

Besides the positive effects of the organic movement in the region, organic certification schemes had various negative consequences for farmers with less financial power. Due to the increasingly constraining political and economic environment in coffee production (eg. strong price fluctuations, increasingly stricter requirements by importing countries, labour intensity) as well as negative effects of certification schemes, many farmers in Chiapas seek alternatives (2.1.3 Limitations of external organic certification; 2.3 Participatory and group certification – a comparison). Discussions with the regional and local scientific community (GAMBOA 2010, SCHWENTESIUS RINDERMANN 2010, ESCALONA AGUILAR 2010, pers. comm.) reflect the tackled critical perspectives of external organic certification and emphasise the need for different approaches.

Participatory Guarantee Systems (PGSs), as an alternative, are just slowly starting off in Chiapas compared to other Mexican states, such as the Federal District. The foundation of the Mexican network of organic marketing initiatives *Red Mexicana de Tianguis y Mercados Organicos* in 2004 gave essential impulses for the development of participatory certification schemes (GÓMEZ CRUZ et al. 2009). Recently the network has received considerable public

includes the variables life expectancy, education and per-capita gross national income (GNI).

⁹ The *milpa* is a traditional centroamerican form of shifting cultivation that consists of an association of maize, pumpkin and beans and represented the base of subsistence for more than three millennia. It is regarded as a sustainable system if the cleared plot is given time for regeneration in regular fallow periods (TURNER et al. 2003).

funds for capacity building and the development of structures for organic certification in its 20 organised markets and associations for organic production and consumption (HERNÁNDEZ 2010, pers. comm.). An international comparison demonstrates this young, but rapid, development of PGSs in Mexico, compared to many other countries without any PGS including Latin American states (2.2.4 Making a difference – global growth and institutionalisation of). To date three organic markets are involved in the development process of PGS in Mexico (SCHWENTESIUS RINDERMANN 2010, pers. comm.). Two of them are located in Chiapas, one in the city of Tapachula (bordering with Cacahoatán) at the Pacific coast and the other in San Cristóbal, a colonial city in the highlands (GÓMEZ TOVAR et al. 2009). The first is a case study of my research in cooperation with ECOSUR Tapachula. My investigation profited considerably from the institution's network and vast research experience with local farmers. Furthermore, I could benefit from the collaboration with a working group of ECOSUR that has been involved in the foundation and committee of the organic association and their participatory certification scheme.

4.2 Research partners

My interview partners were organic farmers, organised in associations in the municipality of Cacahoatán in Chiapas. My sample frame was based on lists of the organised producers I could access by contacting members of each organic association in the municipality with the support of the local research institution El Colegio de la Frontera Sur (ECOSUR). In order to explore perceptions of farmers with participatory and external organic certification, I built two subgroups (A=participatory certification and B=external (or third-party) certification). I used the stratified random sampling method according to BERNARD (2006) with the restriction of an already predetermined sample size of $n=30$. I decided on this limitation due to the mainly qualitative research approach, the work load of applying two different instruments for data collection and my limited time budget of four months. Consequently, I could not draw subsamples proportionate to their size in the total study population. Subpopulation A includes the total of 50 participatory certified farmers of the only organic association working with a PGS in the municipality as well as in the Soconusco (Figure 12). Study population of sample B consists of about 100 farmers of four organised organic associations operating with external certification in the municipality. It excludes two further associations who didn't provide any information.

Initially, I considered further stratification of samples by gender, home village or association, but rejected to do so in order to keep the complexity of research at an acceptable level

proportionate to my available resources. Hence, the three villages I visited for interviews, the number of farmers interviewed in each of them, and the representation of each of the four associations in sample B are results of my random selection. Nevertheless, I am aware of the possible influence of these factors on my results.

Apart from evident differences among the subpopulations, the associations share a number of characteristics. As such, similar environmental and socio-economic conditions (4.1 Study area) for organic agriculture in the three different locations, size (between 30 and 50 members) and age (between 1-3 years) of the selected associations as well as farmers' experience in organic cultivation build a common basis for comparative analysis of participatory and externally certified farmers (Table 10).

Table 10: Selected data on subpopulations of participatory certified (A) and externally certified (B) farmers (JUST COFFEE INC. 2009; GRAPOS 2010; HERNÁNDEZ 2010; ARELLANO, MERIDA, MUÑOZ, OCHOA y VELAZQUEZ 2010, pers. comm.)

	Subpopulation A	Subpopulation B
Size of subpopulation (producers)	50	100
Location of producers	3 villages in highlands of the municipality of Cacahoatán	
Number of organic associations included	1	4
Size of each organic associations (members)	50	Between 20 and 50
Year of foundation of associations	2007	In between 2007 and 2009
Founders of associations	Group of farmers, researchers, NGO	Farmers with support of agronomists from extension services, NGOs
Organic certification system	Participatory certification (or participatory guarantee system [PGS])	third-party certification (or external certification) based on group certification
Certifying institution	Association's PGS committee consisting of farmers, consumers, researchers, NGO members	Certification bodies IMO (Switzerland), OCIA International (USA), Certimex (Mexico)
Years farmers cultivate organically	Between 1 and 4 (most in conversion) ^a	Between 1 and 4 (about half of them in conversion) ^a
Farmers certified organically	None	About 50 ^a

^a Data estimated by association members.

4.3 Data collection

Lack of systematic studies on the research topic creates a need for both exploratory and quantitative approaches. Hence, a methods mix serves a greater depth of understanding as well as the acquisition of data that allows for comparison and supports triangulation (BERNARD 2006). In order to limit biases, data collection is conducted directly in villages and households of farmers instead of interviewing them at the organic market or other public spaces. This personal environment of my research partners is most likely to reflect the origin of their value perceptions. Furthermore, familiar places are supposed to facilitate the situation of data collection for participants. Data collection in Cacahoatán was conducted in three phases between September 2010 and January 2011.

I developed my research instruments for the investigation of individual attribute data according to BERNARD (2006) and the approaches of OPPENHEIM (2004) and GROOTAERT et al. (2004) on studying attitudes. In order to address research question number one (RQ 1) I defined central variables that address the relevant socioeconomic factors (Table 11). I selected them according to HIGGS' (2002) method discussion on measuring socioeconomic status (SES) and the experience of local researchers on the topic (HERNÁNDEZ 2010, GAMBOA 2010, BARRERA 2010, pers. comm.). To answer research question number two (RQ 2) five dimensions with 19 variables capture perceptions of organic agriculture and certification (Table 11). They are based on a holistic perception of agroecosystems, following the concept of agroecology and the central principles of organic agriculture as institutionalised by IFOAM (1.2 Conceptive framework). The analysis of two variables for research question number three (RQ 3) is mainly based on qualitative data derived from the focus groups (Table 11).

The initial phase of research consisted of an exploration of local structures and finding social entry to farmers and key actors in my thematic area. By studying literature and other sources of information I gained a basic understanding of the local situation and adapted research aims and methods. In November 2010 I conducted 15 structured interviews with farmers in group A and B. In research phase three in January 2011 I followed up with an in-depth analysis of central issues resulting from the previous phases in focus group discussions.

Another vital source of information were numerous informal conversations with farmers and consumers at the organic market in Tapachula, research partners and students at ECOSUR, researchers at conferences as well as members of local NGOs and associations. Local information sources as protocols and other documents of the selected farmer organisations, concepts, working papers and workshop material of involved research partners at ECOSUR and literature of the institution's library essentially supplemented data collection.

Table 11: Research questions, variables, indicators and data collection instrument

Variable	Indicator	Data collection instrument
RQ 1: Which socioeconomic differences do exist between participatory and externally certified farmers?		
a. Age	Years of life completed	Questionnaire: question 1 and 2
b. Sex	Male or female	
c. Marital status	Condition of living single (including widowed, separated) or kind of relationship (informal, married)	
d. Level of education	Last attended school level (not necessarily finished)	
e. Land property	Currently owned and rented agricultural land (in hectares)	
f. Employed labour force	Number of seasonal workers employed at farm last year	
g. Principal income source	Most important source of monetary income for household	
h. Principal product marketed	Product with highest turnover	
i. Principal sales channel	Most frequent way of selling products (in terms of product quantity)	
RQ 2: How do perceptions of organic agriculture differ between participatory certified farmers and farmers certified by an external third party?		
2. Agroecological attitude: Perception of organic agriculture and the reciprocity of its integral principles human and environmental health, sustainable food economy and social cohesion		
2.1 Principal motive for organic agriculture		
a. Principal motive for organic marketing	Selection of economic/health/social or ecological dimension	Questionnaire: questions 3 and 4
b. Land use in future (hypothetical)	- Preferred crops/perennials (diversity, native or foreign species) - Reasons for choice	Questionnaire: question 5a,b

2.2 Human health: Perception of interrelation between production and consumption of organic food and health

a. Knowledge about healthy food and lifestyle	- Kind of food perceived as most healthy - Health recommendations to consumers	Questionnaire: questions 12 and 13
b. Knowledge about negative health effects of the application of agrochemicals	Denomination of minor (headache, respiratory problems etc.) or major (cancer, death...) health effects	Questionnaire: question 14

2.3 Environmental health: Perception about the protection of ecosystems in farm management

a. Evaluation of agricultural management measures	Approval of rejection of proposed management practices	Questionnaire: question 7
b. Recognition of environmental quality of production systems	Evaluation of introduced pictures of regionally typical coffee cultivation systems towards ecological effects in local agroecosystem	Questionnaire: question 11
c. Perception of common fauna in plots	Level of positive attitude towards species of commonly present fauna in local agroecosystems	Questionnaire: question 10
d. Application of agrochemicals	- Confirmation of former application of agrochemicals - Year of last application	Questionnaire: questions 8 and 9
e. Utilisation of adapted varieties	- Principal varieties cultivated and marketed - Preferably cultivated crops or perennials on an additional hectare of land (hypothetical situation) - Preferably cultivated species/varieties on an additional hectare of land (hypothetical situation) - Major source of seeds - Reason for major source of seeds	Questionnaire: questions 2, 5a, 6a,b

2.4 Sustainable food economy: Perception of economic conditions of organic food production and commercialisation

a. Sustainable livelihood strategy	- Current major cash crops (diversity, quantity marketed) - Reasons for future landuse (orientation towards subsistence or market orientation)	Questionnaire: question 2, 5b
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b. Principal sales channel	Channel where principal quantity was marketed in previous year	Questionnaire: question 2
c. Preference of sales channel	<ul style="list-style-type: none"> - First rank of different proposed channels (local organic market, city market, export, national trade, village) in a hypothetical situation - Reason for preferred sales channel 	Questionnaire: questions 15a and 15b
d. Orientation at principles of food sovereignty	<ul style="list-style-type: none"> - Reasons for preferably cultivated species on additional hectare land (hypothetical situation) - Selection of items representing concept of food sovereignty among pairs of antagonist orientation (local/foreign culture, endogenous/exogenous resources, traditional indigenous/modern new knowledge, native/modified varieties, consider consumers' stake/trends in large supermarkets) 	Questionnaire: questions 5b and 16

2.5 Social capital: Perception of social relations between members of a farmers' association as well as between farmer and consumers

a. Level of solidarity	Person or institution considered as most reliable in case of emergency	Questionnaire: question 21
b. Level of cooperation	<ul style="list-style-type: none"> - Level of seed exchange among farmers - Reasons for seed exchange - Willingness to collaborate for common investment 	Questionnaire: questions 6a, 6b, 22a, b, 23b
c. Level of responsibility	Actor perceived as responsible for organic quality in the first place (farmer, group committee, inspecting actor(s), government)	Questionnaire: question 18
d. Evaluation of learning processes	<ul style="list-style-type: none"> - Acquired know-how central to respondent - Central partners in learning processes 	Questionnaire: questions 20a, 20b
e. Perception of quality of organisation within group	<ul style="list-style-type: none"> - Number of advantages of organisation stated - Dimension of advantages 	<ul style="list-style-type: none"> - Questionnaire: question 24 - Focus groups: phase 3

f. Perception of producer-consumer relation	<ul style="list-style-type: none"> - Means of communicating organic quality to consumer (relation of trust, organic seal, high price, product quality) - Importance of consumer's stake to respondent 	- Questionnaire: question 19, 5b
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RQ 3: How do perceived benefits and challenges of organic certification differ among participatory certified and externally certified farmers?

3.1 Advantages of organic certification	<ul style="list-style-type: none"> - Number of advantages - Atmosphere in focus discussions 	
3.2 Disadvantages of organic certification	<ul style="list-style-type: none"> Number of disadvantages Nature of central problem with organic certification Type of solutions to central problem Atmosphere in focus discussions 	<ul style="list-style-type: none"> - Questionnaire: question 24 and 25 - Focus groups: phase 1, 2 and 3
3.3 Dominating dimension in perception of organic certification	<ul style="list-style-type: none"> Type of advantages Type of disadvantages Meaning of organic certification Atmosphere in focus discussions 	

4.4 Research instruments

4.4.1 Structured interviews

For structured interviews I constructed a questionnaire with 13 fixed-choice and twelve open-ended questions based on OPPENHEIM (1996) and BERNARD (2006). For each variable I defined indicators and translated them into questions (Appendix 1). Questions one and two are about personal and household data, including information on production and sales of organic products. Hence, they are covering various indicators that mainly address research questions number one and partly number two (Table 11). I applied various question techniques in order to adequately approach different sorts of required data. Among them are nominal scales, ordinal scales with ranking, a Likert-scale and indices. In order to address delicate variables, such as the use of agrochemicals, trust or responsibility of farmers, I used indirect phrasing and control questions.

With the support of colleagues at ECOSUR the wording of questions has been adapted to local Spanish and to the cultural context of my respondents. After pre-tests with five farmers and various modifications of questions I fixed dates for visits in the three villages by communicating with a representative of each association. Villages were accessible by public transport in between one and two hours. Randomly selected farmers on my lists mostly stucked to the arranged dates for interviews and were very open-minded in offering me their personal data and opinions. Interviews in their households took me 1.5 hours on average and were mostly conducted in calm atmosphere without anyone else disturbing the conversation. In some cases the presence of commenting family members or noises might have created minor distortions of results of the interviews. In each community I stayed over a few nights at different farmers' homes, which permitted to gain valuable additional information by observing and communicating with families and other inhabitants. For capturing interviews I used a voice recorder that I previously introduced to my respondents together with my promise to only use their data anonymously and for the purpose of my research. In the same way I used to ask for permission when taking pictures and delivered copies to my respondents.

4.4.2 Focus groups

Based on the results of the interviews I developed a concept for the realisation of a guided discussion in each sample group following the approaches of KRUSE (2008), PRETTY et al.

(1995) and the WORLD BANK (2000). My aim was to discuss weaknesses and strengths of organic certification with farmers that are most important in the local context and received the most attention in the previously conducted interviews. This phase of research permitted to deepen the issues perceived as central by the interviewed farmers and reveal aspects that didn't appear earlier. Furthermore, the focus groups served the important triangulation of data. For analysis I observed the discussions' contents, dynamics and atmosphere in the groups and if they were different in group A and B.

I realised both focus groups in January 2011 in Alpujarras, one of the three villages where I interviewed farmers earlier. The choice was due to the highest number of interview partners living in Alpujarras, which permitted the invitation of more participants. The same conditions for both groups created a basis for comparison. I used the participatory methods "Brainstorming", "Evaluation of alternatives" and "Problem and solution tree" according to MDF (2005) and PRETTY et al. (1995). I based the structure of discussion on three phases (Table 12) but left the dynamic quite open to the participants with only moderate control in each phase. For support of moderation I developed a methodical guideline (Appendix 2).

Table 12: Methodical matrix of focus groups

Phase of focus group	Research aim	Method
1. Meaning of organic certification (OC)	<ul style="list-style-type: none"> • Revealing what OC means to participants • Evaluating if their perception of OC is positive, neutral or negative • Comparing the latter among group A and B • Finding indications for reasons of their motives for organic agriculture and gain deeper understanding by relating data with interview data 	<ul style="list-style-type: none"> a. Brainstorming b. Discussion of results
2. Benefits of OC within organised group	<ul style="list-style-type: none"> • Reveal degree of participants' positive perception of OC • Reveal differences in observed number and dimensions of benefits (social, economic etc.) 	<ul style="list-style-type: none"> a. Brainstorming b. Discussion of results
3. Definition of central problem, its causes and possible solutions	<ul style="list-style-type: none"> • Reveal participants' central problem with OC • Relate nature of central problem with previous data on each group and find indications for its origin • Compare nature of problem, discussed reasons and solutions as well as dynamics of discussion among groups 	<ul style="list-style-type: none"> a. Evaluation of alternatives b. Problem and solution tree

In group A five of the six invited interview partners and in group B three of six joined the discussions in the communal hall of Alpujarras. The focus groups lasted 2.5 hours in group A and three hours in group B. I moderated each of them with the help of an assistant for support in handling media and capturing discussions. Central results of the three phases were depicted on prepared posters, which I left to the farmers after the meeting (Image 2). Furthermore, the discussions were captured on pictures, with video-camera and voice recorder. For a pleasant atmosphere, I arranged the room in a social and communicative way (Image 3) and served coffee and cake during a break in the middle of the discussions.

The brainstorming in phase one and two of the focus groups facilitated an easy entry to the topic for the participants (Image 1). In phase three, I presented a selection of the most frequently mentioned problems in the area of organisation for organic marketing and organic certification derived from previous interviews. After defining the problems clearly with the participants, I asked them to discuss whether there was any other topic they wanted to add. In both groups, participants identified three additional problems. In the next step, everyone anonymously marked three problems most important to her/him on small papers. I presented the democratic evaluation of problems to all farmers. Since both group A and B were small, I gave them the chance to discuss which of the three leading problems they wished to give more attention in the following phase. After voting per hand raising, I asked the participants to discuss in detail the aspects of their elected problem in order to make its meaning clearer to everyone. In the next step, farmers discussed possible causes and lastly, they tried to find feasible solutions they could realise themselves within their organisation.

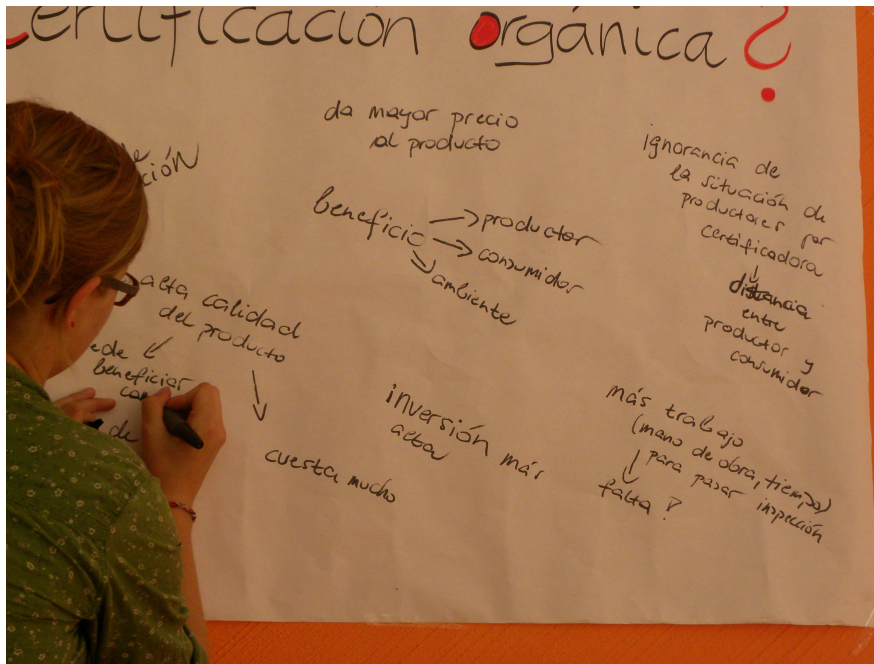


Image 1: Recording of farmers' comments in phase one (meaning of organic certification) of focus group A (DE LA MORA 2011)

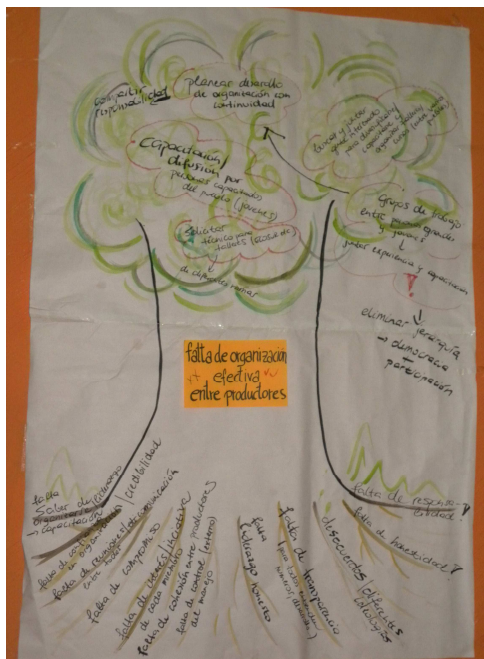


Image 2 (left): Poster of problem and solution tree as an example of capturing results in focus groups, Cacahoatán, Mexico (HOCHREITER 2011)

Image 3 (right): Arrangement of room with seats in a circle supporting a comfortable and communicative atmosphere, Cacahoatán, Mexico (HOCHREITER 2011)

4.5 Data storage and analysis

Interviews with farmers have been grabbed by voice recorder in order to provide back-up for the written notes in questionnaires. I organised the extracted quantitative data in a matrix with Microsoft Excel and excerpts of qualitative data in lists and tables with Microsoft Word. A description of the dataset is provided in a metadata file. Videos of focus group discussions and posters developed by the groups in each phase of discussion built the basis for excerption of information according to research aims and defined variables. Data has been stored with Microsoft Word. Another important source of research documentation are pictures taken from the farmsteads and farmers' daily work and during learning processes in seminars and on-field trainings, at the organic market in Tapachula and during coffee harvest and processing. Furthermore, after each day of fieldwork I took notes of informal conversations in the villages and observations in my research diary. For correct transcription and translation of information from local dialects into Spanish and into English I had support from native colleagues and supervisors at ECOSUR. Furthermore, I cross-checked my interpretations with my native assistants' impressions from both focus groups.

I used the software SPSS for a descriptive analysis of quantitative data following TOUTENBURG and HEUMANN (2008). All realised tests compare sample groups A and B. Due to the small sample size ($n=30$) I chose the Kolmogorov-Smirnov-Test for testing the standard normal distribution of metric variables. For normally distributed variables I used the T-Test to compare arithmetic means of both samples. In case of a rejection of the null hypothesis for normal distribution, I applied the non-parametric Wilcoxon-Mann-Whitney-Test for comparison of arithmetic means of two independent samples. The same test has been chosen for rankings (eg. according to school grades). Qualitative data has mainly been analysed with quantitative methods following the approaches of MAYRING (2001) and BERNARD (2006). Information from open-ended questions of interviews and excerpts of focus group discussions has been coded and assigned to adequate categories for analysis.

For the analysis of nominally or ordinally scaled variables I applied Chi-Quadrat-Tests which allowed for analysing differences in frequency distributions of two independent samples and indications of relationships among variables. Due to the small sample size, many variables didn't fulfill the conditions for statistical analysis or it didn't seem reasonable to quantify them. As such, many with an expected frequency of less than five respondents in more than 20% of a crosstab's cells have not been analysed statistically (indicated in text, figures or tabs in 5 Results). However, for some categorial variables with more than 20% of $e_{ij} < 5$ in

crosstabs, I used Fisher's Exact Test instead of the two-tailed asymptotic significance of a Chi-Quadrat-Test according to BROSIUS (2008) and ZAR (1999). Finally, I enriched the data clusters with previously excluded, but important, information from the selection process, and with information from informal conversations with farmers during fieldwork.

To capture the complexity of important aspects of the ecological dimension in farmers' perception (variable 2.3 Environmental health) I applied likert-scaled items for the indicators 2.3.a (approval or rejection of management practices, Table 4) following OPPENHEIM (2004) in order to ask participants for their approval or rejection. Each of the eight items I coded for pro or contra organic agriculture (eg. question no. 7 about management practices: cover soil with plant residues = pro; grow maize on the same plot three years in a row = contra). I then summed up the proportional values of each respondent for comparison of total scores of farmers' pro-ecological attitude on a ratio scale between zero and one. Indicator 2.3.c (level of positive attitude towards species) is based on the same methodological approach, except the given number of items is six. Indicator 2.3.b (evaluation of pictures of cultivation systems) represents the ranking of four introduced pictures classified according to the most common coffee production systems of coffee in the region. They represent different levels of intensity of cultivation (A=traditional polyculture, B=commercial polyculture, C=shaded monoculture, D=unshaded monoculture) which do have a strong negative correlation with the level of biodiversity in fauna and flora according to MOGUEL and TOLEDO (1999). I analysed participants' rankings of the pictures from low to high negative ecological effects in the agroecosystem by summing up positive proportional values for comparison (added value of 0,25 for each picture in correct position). In particular I paid attention to the first rank. For operationalisation of the indicator 2.4.d (orientation at principles of food sovereignty, Table 11) I applied a simplified version of the method of Semantic Differential (OPPENHEIM 2004). Five antagonist pairs of items represented the two poles of orientation of "local economy and local knowledge" and "export economy and technology". Therefore, I modified an approach of GÓMEZ TOVAR et al. (2005), who define a spectrum of organic production in their study. In case of indicators 2.3.a,c and 2.4.b the results of pretests didn't allow for more differentiation of attitudes by ordinal scales. The attempt to ask respondents to grade their attitude towards an item didn't result successful, most probably due to cultural reasons. Furthermore, due to the limited scale of this research a factor analysis wasn't possible for likert-scaled and semantic-differential items.

In order to assess farmers' attitudes in four agroecological dimensions I rated each variable, based on the results of its quantitative and qualitative indicators, on a pentamorous scale (1= very low awareness, 5= very high awareness). Based on the concept of agroecology, the

assumption that each dimension is equally important in a holistic attitude towards organic agriculture (maximum of grade five), built the basis for comparison between the groups.

On the whole, the small sample size does not allow for statistically representative results even though tests for certain variables have shown significant differences between the sample groups. Thus, results can be understood as an idea of tendencies which build a basis for further research. Primarily, the value of results and discussion of this work lies in the exploratory nature and qualitative information derived from interviews and focus groups.

4.6 Ethic aspects

My research design and ethical maxims of fieldwork are oriented at BERNARD's (2006) call that *"we need to turn our skills in the production of...effective knowledge to solving the problems of hunger, disease, poverty, war, environmental pollution, family and ethnic violence, and racism, among others"*.

However, the bias lies within the assumption of the "good". To develop an investigation that is partly oriented at „action research“ is a sensitive undertaking. In this case, dealing with a solution for a given problem without proving beforehand whether organic farmers consider research questions as relevant, represents an important ethical question. In particular, the mainly etic approach of my methodological design can be considered as a disadvantage, but has been the result of a compromise in order to keep the scientific challenge at diploma thesis level.

To at least weaken these moral conflicts, I took as much time as possible for social entry in the fieldsite and tried to improve my understanding of culture, mentality and agricultural systems embedded in social and political systems. This experience resulted indispensable for the orientation and adaptation of my research aims and methods. Most importantly, it supported my trial to avoid top-down research and often criticised western-style development paradigms.

Furthermore, during practical fieldwork confrontation with religious and cultural beliefs, sex issues or tragic personal life stories asked for social empathy and respect towards respondents. In interviews, questions on personal socioeconomic data, on trust, solidarity and the request for honest critics on certain topics resulted as the most sensitive ones and often required individually adequate approaches in order to not harm farmers' integrities.

5 Results

5.1 Socioeconomic factors

Twelve participatory certified farmers (group A) and three externally certified farmers (group B) are women (Table 13). The relative majority of respondents in both groups belong to the middle age class (between 41 and 55 years), whereas six are younger than 40 years in group A and elder than 55 years in group B. With an average difference of ten years, participatory certified farmers are significantly younger than those with third-party certification ($df=28$, $t=2.487$, $p=0.019^*$). All externally certified farmers having a partner are married, which is the case for only five in group A. In comparison, six of group A live in informal cohabitation with their partner ($df=1$, $X^2=9.455$, $p=0.003^{**}$)¹⁰. Mean land property in group A is 1.7 hectares in contrast to 5.5 hectares in group B ($df=28$, $t=3.9$, $p=0.000^{***}$). In order to manage seasonal extraordinary work loads at their farms, group A hires one labourer per season and group B employs 4.16 workers on average ($df=28$, $t=3.537$, $p=0.001^{***}$). Nine farmers in sample group A and three in sample group B don't use to hire workers at all during high season. Most of the employed workforce are people from Guatemala or landless neighbors or other village's inhabitants. Moreover, ten participatory certified farmers and all of the externally certified respondents consider agricultural sales as their major monetary income source. The most important product sold in terms of quantity is coffee (mostly green beans, low quantities of roasted and/or milled beans) in the case of eleven respondents of group A and all of them in group B. However, quantities of coffee farmers sold in the last year were far greater in group B (average 3,524 kg/year) than group A (average 1,956 kg/year; $df=25$, $t=-1.768$, $p=0,89$). Three respondents of group A don't sell coffee at all. On the other hand, diversification of their offer in group A is significantly higher than in group B since all of the respondents are marketing at minimum three different crops or processed products. Five externally certified farmers named two different products marketed and referred to coffee and banana or honey ($df=1$, $X^2=26.2$, $p=0.000^{***}$). In group A, besides different flowers and herbs in pots for in- and outdoor cultivation, freshly cooked traditional plates dominate farmers' offer at their organic market in the city of Tapachula. The producers serve soups, tortillas, traditional cakes and other pastries stuffed with cheese and vegetables (*empanadas*, *tamales*), porridges and soups, hot grain-based drinks and cakes. Honey and chocolate in powder or bars and soy, raw and processed to instant drinks or

¹⁰ The category "Single" also comprises widowed and separated respondents.

yogurt as well as cheese, pickles and sauces (*salsas de chile*). However, both groups grow a variety of vegetables, fruits, maize and beans in their homegardens for their own consumption. Group A also offers their produce of vegetables (chayote, avocado, chili, herbs, kamote, beans, tomatoes, maize, sweet potato, other root vegetables etc.), fruits (papaya, lemons, oranges, *rambután*, mango, coco etc.) as well as eggs and chicken not needed for subsistence at the market. Eleven respondents of group B sell the majority of their products via the organised group concerned in the interview, while the same number of farmers in group A name intermediaries or other organised groups they belong to (eg. association of coffee farmers) as their main sales channel (df=2, $X^2=7.6$, $p=0.022^*$). Eleven farmers of group B and six in group A are able to market their produce at higher organic premium-prices. 14 participatory certified farmers are organised in at least two ways, referring to membership in different groups as farmers associations, cooperatives and the like. The same holds true for two externally certified farmers (df=1, $X^2=19.61$, 0.000^{***}). Moreover, three of the respondents in group A are involved in both participatory and external organic certification processes.

In three socioeconomic aspects any significant differences between group A and B could be revealed (Table 13). As such, almost all farmers have attended at least primary school and the highest level of education reached in each of them is secondary school. Moreover, farmers are similar regarding their principal income source, which the majority of respondents in both groups derive from agriculture. Also there is no significant difference in the choice of their sales channel. Farmers of both samples are selling a part of their products also via intermediaries, mostly in the conventional sector, besides collective marketing in their association.

Table 13: Individual socioeconomic factors for participatory (A, n=15) and externally (B, n=15) certified farmers

Socioeconomic factor	A	B	Statistical Tests
a. Sex			
female	12	3	df=1, $X^2=10.8$ (p=0.001***), Chi-Quadrat-Test
male	3	12	
b. Age			
25-40 years	6	1	df=28, t=-2.487 (p=0.019*), T-Test
41-55 years	7	8	
> 55 years	2	6	
arithmetic mean (years)	44.3	54.9	
c. Marital status			
matrimony	5	13	df=1, $X^2=9.455$ (p=0.003**), Chi-Quadrat-Test
informal cohabitation	6	0	
single	4	2	
d. Level of education			
primary school ^a	4	10	df=1, $X^2=2.914$ (p=0.088 ^b), Chi-Quadrat-Test ^e
secondary school ^a	10	5	
illiterate	1	0	
e. Land property			
hectares (arithmetic mean)	1.7	5.5	df=28, t=-3.9 (p=0.000***), T-Test
f. Seasonal labour			
workers hired last year (arithmetic mean)	1	4.16	df=28, t=-3.527 (p=0.001***), T-Test ^d
no labour force employed	9	3	
g. Principal income source			
agriculture	11	15	df=2, $X^2=4.62$ (p=0.099 ^b), Chi-Quadrat-Test
wage labour	2	0	
remittances of family	2	0	
h. Principal product marketed			
coffee	9	15	df=1, $X^2=4.500$ (p=0.017*), Chi-Quadrat-Test
other products (plants and flowers, hot meals, honey)	6	0	
i. Degree of diversification			
≥ 3 products marketed	15	1	df=1, $X^2=26.2$ (p=0.000***), Chi-Quadrat-Test
< 3 products marketed	0	14	
j. Principal sales channel			
association ^c	7	11	df=1, $X^2=1.222$ (p=0.136 ^b), Chi-Quadrat-Test
intermediary	8	4	
k. Degree of organisation			
member in ≥ 2 groups	14	2	df=1, $X^2=19.86$ (p=0.000***), Chi-Quadrat-Test
member in < 2 groups	1	13	

^a Not all respondents have finished primary or secondary school, but consumed differing number of school years.

^b Differences between group A and B are not statistically significant.

^c Refers to sales at organic market in group A and collective marketing via organic (and sometimes conventional) intermediaries (national or export markets) or direct export.

^d In this case test samples are n(A)=11 and n(B)=13. ^e In this case test samples are n(A)=14 and n(B)=15

***Differences between group A and B are significant at 0.001 level, **significant at 0.01 level or *significant at 0.05 level.

5.2 Attitude towards organic agriculture

5.2.1 Motives for organic agriculture

For eight participatory certified farmers human health is the principal motive for marketing organic products, while eight externally certified farmers state economic reasons (Figure 15). None of the farmers respond to participate in the organic market because they want to follow a popular trend.

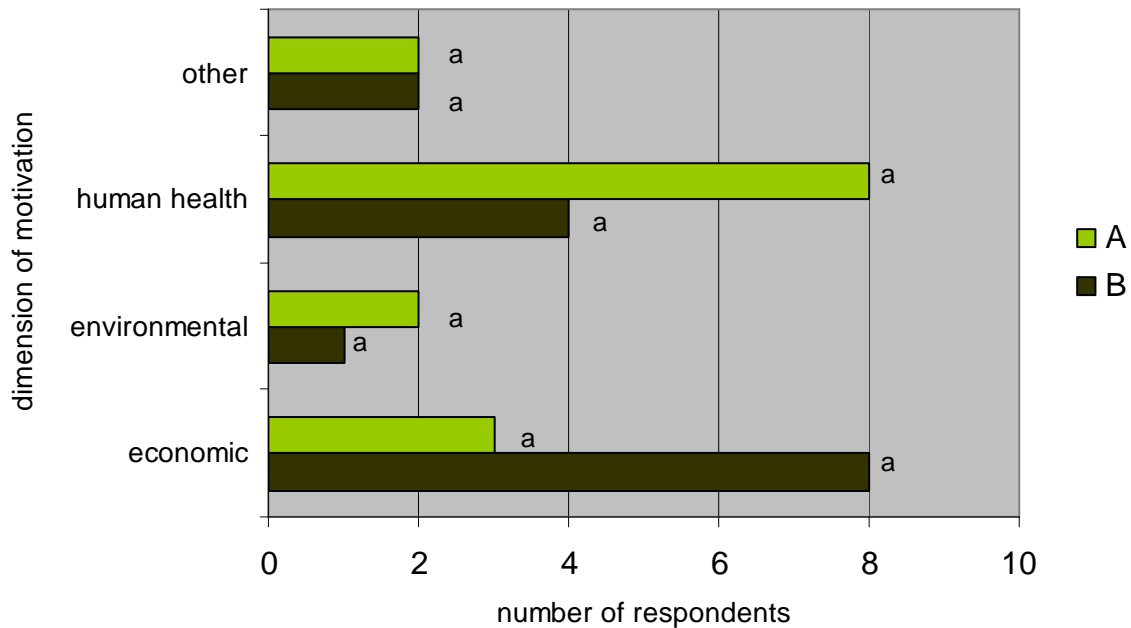


Figure 15: Dimensions of motivations for organic marketing of participatory (A, n=15) and externally (B, n=15) certified farmers (absolute frequency)

^aDue to unfulfilled test conditions differences between group A and B are not analysed statistically.

Nine farmers of group A and five of group B would plant vegetables in the next season in case they received one hectare additional land close to their home (Figure 16). In both groups, cultivating either exclusively fruits or different associations of vegetables, fruits, timber and maize are the second most popular options. Three farmers in group B prefer to cultivate coffee on the entire plot. More details on their hypothetical future plans are mentioned by ten participatory certified farmers, who enumerate at minimum four different crops or perennials they want to cultivate. Among externally certified respondents two do so, while six don't name any specific cultivar. The majority in group A justifies their choice on vegetables, fruits and intercropping in mixed systems with the need of supply for subsistence and diversification of their offer (Figure 17). While these reasons are also important for group B, seven of its respondents pursue goals directly related to improvement of turnover (higher demand, prices, yields).

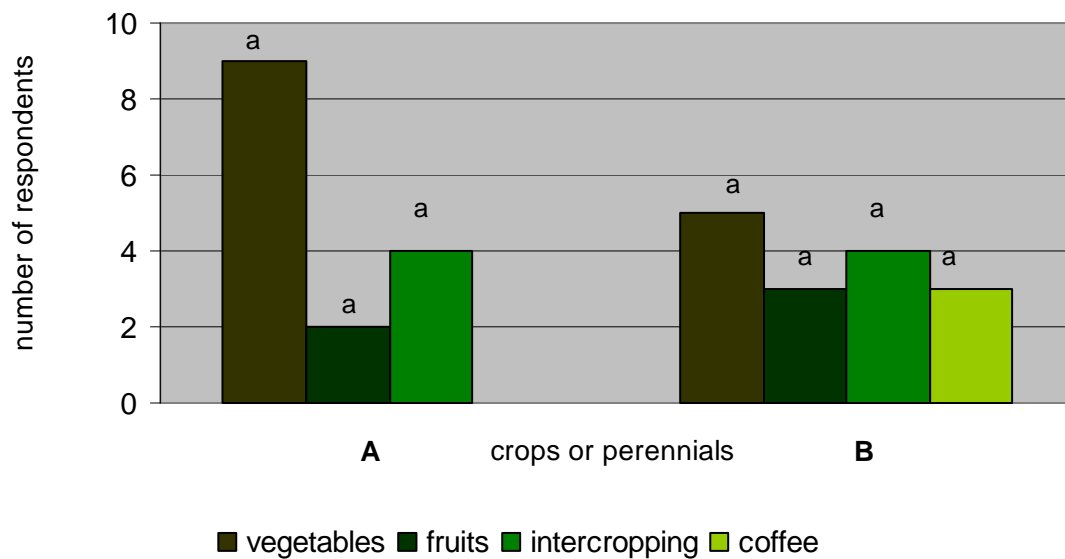


Figure 16: Preferably cultivated crops or perennials on additional hectare of land by participatory (A, n=15) and externally (B, n=15) certified farmers (absolute frequency)

^aDue to unfulfilled test conditions differences between group A and B are not analysed statistically.

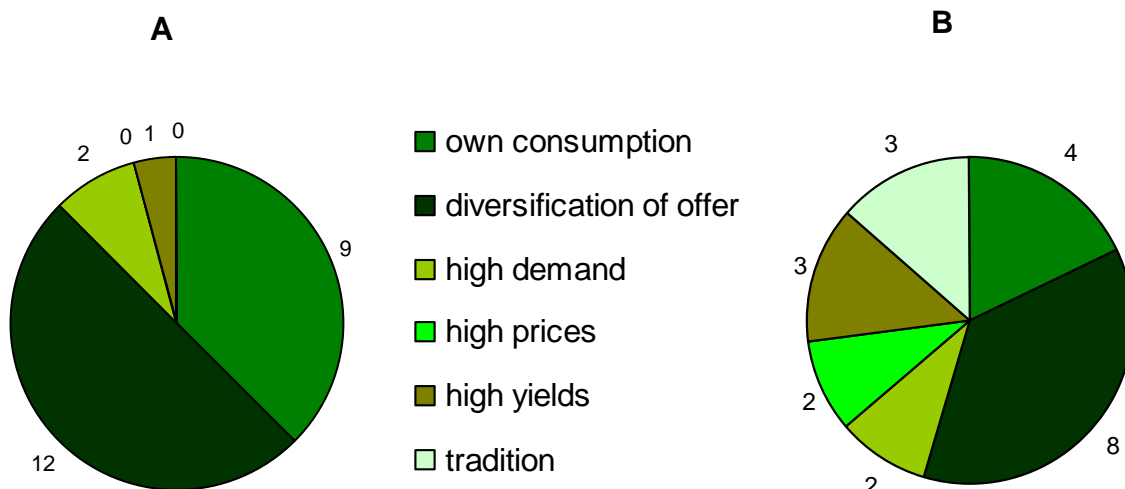


Figure 17: Reasons for preferably cultivated crops or perennials mentioned by participatory (A, n=15) and externally (B, n=15) certified farmers (absolute frequency of multiple answers to open question)

5.2.2 Human health

All farmers of group A and twelve of group B consider vegetables as the healthiest food. In both groups leafy vegetables (*hierba mora*, *pata de paloma* etc.) and beans are mentioned

frequently among them. In group B three farmers mention animal products as meat or milk. Due to unfulfilled test conditions differences between group A and B are not analysed statistically.

In each group the health recommendation that would be given to consumers most frequently is “to eat vegetables”. “Taking care of a balanced diet” and “eating natural products”, often explained as “products grown and processed without agrochemicals”, is important too for both. In group B farmers name more recommendations (35) than in group A (28; Table 14).

Table 14: Categories of health recommendations participatory (A, n=15) and externally (B, n=15) certified farmers would give to consumers (absolute frequency of multiple answers to open question)

Health recommendation	A	B
Eat vegetables ^a	12	11
Pursue balanced diet	4	3
Eat natural products ^b	4	5
Eat fruits	2	2
No alcohol, cigarettes, softdrinks, fat	3	3
Eat local food	3	2
Eat meat/eggs	0	4
Other	0	5
Total	28	35

^a Including legumes.

^b Including recommendations such as “eat food without agrochemicals”.

In both groups A and B about more or less half of the respondents mention serious health effects (cancer, intoxication, death) resulting of the application of agrochemicals on the fields. Eight farmers of group A and six of group B don’t know or name minor effects (Table 15). Statistical tests don’t indicate any significant differences between group A and B (df=1, $X^2=0.536$, $p=0.464$).

Table 15: Potential negative health effects from the application of agrochemicals named by participatory (A, n=15) and externally certified farmers (B, n=15)

Health effects	A	B
Cancer ^a	6	5
Affected respiration/cardiovascular system ^a	4	4
Death ^a	1	1
Intoxication ^a	0	3
Health problems (unspecified) ^a	2	1
No idea ^a	2	1

^aDifferences between group A and B are not statistically significant.

5.2.3 Environmental health

Farmers in group A state that they are orienting on average 51% of proposed basic management practices at organic principles, which is significantly higher than the mean share of 32% in group B (df=28, t=4.88, p=0.000***). Significantly more participatory than externally certified farmers are answering to work with compost, temporal association of crops and reject monocultures (Table 16). There are no significant differences in the application of green manures, temporal crop association and the preservation of living soil cover between crops. Furthermore, almost all respondents in both groups reject slash-and-burn practices and try to minimize soil erosion by adequate field design. Several respondents in group A stress the importance of integrating nitrogen-fixing species, as beans. Others mention the necessity of fallow periods in order to support soil regeneration. Among farmers of group B the value of crop diversity is mentioned several times as well as the problem of lacking resources for investing in seeds.

Table 16: Orientation pro or contra selected organic management practices of participatory (A, n=15) and externally certified farmers (B, n=15)

Mangement practice	A		B		Statistical tests
	pro	contra	pro	contra	
No slash and burn	14	1	14	1	df=28, $X^2=0$ (p=1.000 ^a)
Limitting erosion by appropriate field design	14	1	15	0	df=28, $X^2=1.024$ (p=1.000 ^a)
Application of green manure	14	1	13	2	df=28, $X^2=0.270$ (p=1.000 ^a)
Avoiding monoculture	12	3	5	10	df=28, $X^2=6.652$ (p=0.010 ^{**})
Beneficial spatial association of crops	15	0	13	2	df=28, $X^2=0.536$ (p=0.483 ^a)
Preserve living soil cover	10	5	7	8	df=28, $X^2=1.222$ (p=0.269 ^a)
Production of compost	15	0	10	5	df=28, $X^2=6.0$ (p=0.042 [*])
Beneficial temporal association of crops	9	6	3	12	df=28, $X^2=5.0$ (p=0.025 [*])

^a Differences between group A and B are not statistically significant.

***Differences between group A and B are significant at 0.001 level, **significant at 0.01 level or *significant at 0.05 level.

Participatory certified respondents perceive slightly more of organisms commonly regarded as pests in the region as beneficial in their agroecosystems (46% of respondents) than externally certified ones (38% of respondents). Thus, they are more likely to tolerate animals as bats, ants, snakes, spiders or rats on their plots. Differences between group A and B are not statistically significant (df=28, t=0.871, p=0.391; Table 17).

Participatory certified farmers are more aware of the environmental quality of locally common agroecosystems (70% of respondents) than externally certified ones (45% of respondents). Hence, group A is more sensitive to distinguish the level of negative ecological impacts of different production systems as coffee in traditional polyculture, commercial polyculture, shaded monoculture and unshaded monoculture. Four farmers in group B evaluate the example of unshaded monoculture as most environmentally friendly, whereas one respondent in group A did so. Differences between group A and B are not statistically significant (U=73, p=0.084; Table 17).

Table 17: Mean values for three variables of the dimension environmental health (land management, perception of fauna, environmental quality) for participatory (A, n=15) and externally (B, n=15) certified farmers

Dimension	A	B	Statistical tests
Land management ^a	0.51	0.32	df=28, t=4.88, (p=0.000***), T-Test
Perception of fauna ^b	0.46	0.38	df=28, t=0.871 (p=0.871 ^d), T-Test
Environmental quality ^c	0.70	0.46	U=73 (p=0.084 ^d), Mann-Whitney-U-Test

^a Mean value of group A and B from sum of proportional values for 8 evaluated management practices/participant.

^b Mean value of group A and B based on sum of proportional values for 6 evaluated species/participant.

^c Mean value of group A and B based on sum of proportional values of ranking of 4 pictures of production systems.

^d Differences between group A and B are not statistically significant.

***Differences between group A and B are significant at 0.001 level, **significant at 0.01 level or *significant at 0.05 level.

Furthermore, 100% of farmers in group A and 93% in group B state that they would not apply agrochemicals (synthetic fertilizer, pesticides etc.) even if they had plenty of money for doing so (df=1, $X^2=1.034$, p=0.309). 53% of participatory certified farmers and 20% of externally certified respondents argue that they had never applied any agrochemicals on their plots (df=1, $X^2=3.589$, p=0.058).

Own propagation appears to be the most important source of seeds for both group A and B, but is mentioned more frequently in group A (Figure 18). The exchange of seeds is practiced

relatively more frequently among participatory certified farmers (mentioned twice as often). Five externally certified farmers prefer to buy seeds in local agrochemical shops or at the market, while two respondents in group A have the same opinion.

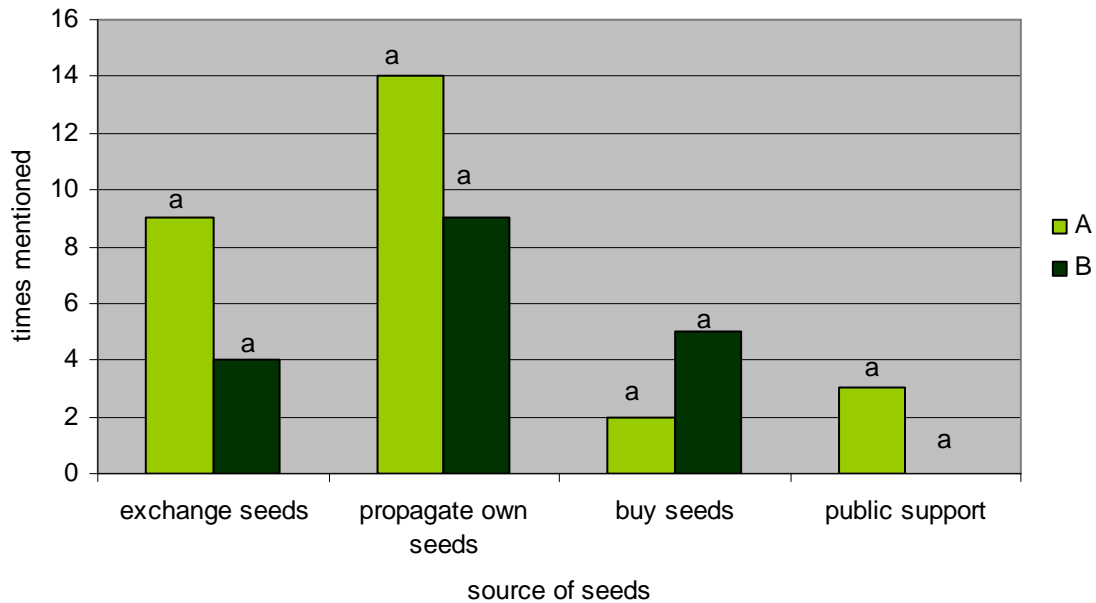


Figure 18: Preferred sources of seeds by participatory (A, n=15) and externally (B, n=15) certified farmers (absolute frequency of multiple answers)

^aDue to unfulfilled test conditions differences between group A and B are not analysed statistically.

The acquisition of seeds is based on trust into the selected source for 13 farmers of group A (Figure 19). Five of them don't trust in the available commercial offer of seeds. Among all the respondents concerned about trust in both groups, the majority relate this reason with the quality of seeds and social relations to their sources. In group B economic reasons (five respondents) and local adaptation of seeds (four respondents) are the most frequent reasons named.

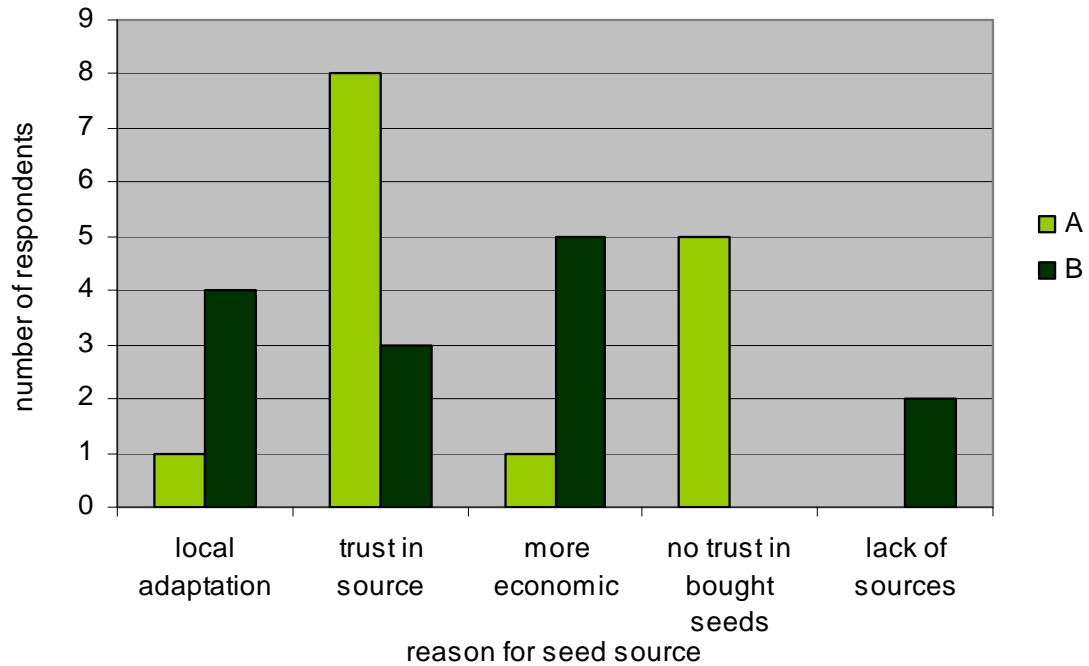


Figure 19: Reasons for principal seed source of participatory (A, n=15) and externally (B, n=15) certified farmers (absolute frequency, open question)

5.2.4 Sustainable food economy

Group A shares the basic values of food sovereignty to a higher degree than group B. As such, a significant difference between the groups can be observed in the attitude towards producer-consumer-relation. Nine farmers in group B prefer to orient themselves at food trends promoted in supermarkets and media instead of considering local demand by connecting directly with consumers. On the contrary, 14 respondents of group A do care about local consumers' stakes when deciding on their production and marketing ($df=1$, $X^2=11,627$, $p \leq 0.001^{**}$; Figure 20). In all of the other dimensions there is no significant difference between the groups. However, slightly more participatory certified farmers than externally certified ones tend to be in favour of supporting local food culture instead of orienting diets and food styles at other countries such as the USA. On average, group A advocates, stronger than group B, the use of endogenous resources of their farms rather than external inputs and favours traditional knowledge instead of the latest technological innovations for production. Furthermore, farmers of group A are more in favour of native adapted varieties than modified seeds, compared to group B. These observations among the groups are reflected in the significant difference between the mean total value of 0.88 in

group A and 0.61 in group B (sum of proportional values of five dimensions; $df=28$, $t=2.981$, $p=0.006^{**}$).

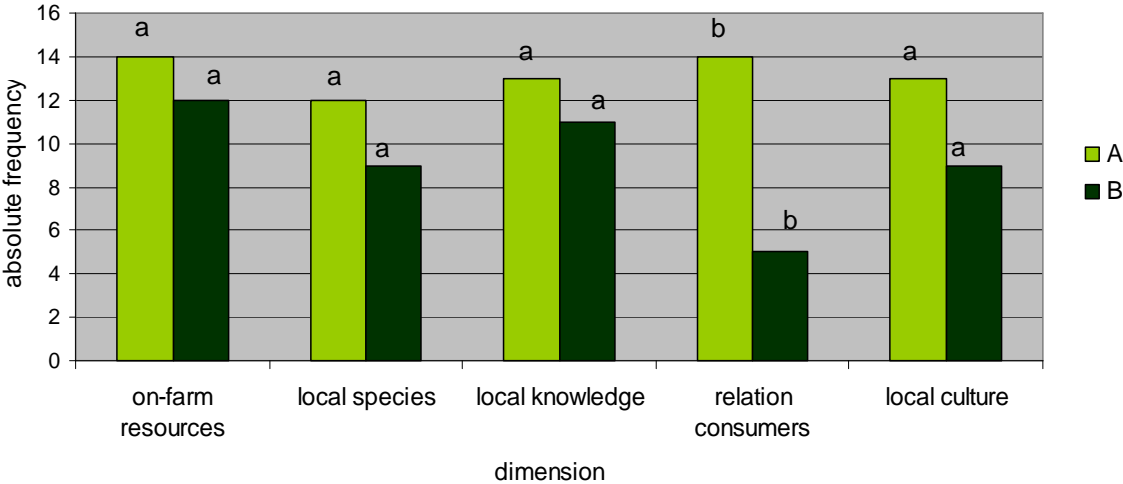


Figure 20: Approval of participatory (A, n=15) and externally certified (B, n=15) farmers in five dimensions of food sovereignty

^a Differences between group A and B are not statistically significant.
^b Differences between group A and B are statistically significant at .001 level.

Several farmers comment that local farmers should orient themselves at foreign innovations in organic food production and marketing, while others are convinced that only transmission of traditional and indigenous knowledge facilitates locally adapted land management that guarantees good quality and yields. Some of the latter use to cultivate their plots according to the moon calendar.

On average, participatory certified farmers prefer the organic farmers market (1.3) among all sales channels, assuming the hypothetical case of being able to freely choose one of the available options of food marketing (Table 18). More specifically, they refer to the Mexican *tianguis*, a nationally typical form of market where small-scale producers are mainly selling fresh products and hot dishes. In the second place, they rank the export of their products (2.1). Both sales channels, farmers markets and export, are also popular among externally certified respondents. Nevertheless, their converse ranking in group B is significantly different to group A. Furthermore, answers show a significantly different willingness of the groups to sell at a central market, as in the region’s capital city. On the contrary, both groups have a low preference for the marketing of products via intermediary. The nature of the respondents’ reasons for their most preferred sales channel differs greatly. While group A

names both social and economic reasons, in group B only economic reasons are mentioned (Table 19).

Table 18: Mean ranking of preferences of sales channels by participatory (A, n=15) and externally (B, n=15) certified farmers (grade 1= preferred option, grade 5=least accepted option)

Sales channel	A	B	Statistical tests
Village	3.7	4.1	df=29, U=90.5 (p=0.326 ^a), Mann-Whitney-U-Test
Organic market	1.3	2.8	df=29, U=29 (p=0.000 ^{***}), Mann-Whitney-U-Test
Central market	4.1	3.1	df=29, U=51 (p=0.007 ^{**}), Mann-Whitney-U-Test
Intermediary	3.8	3.3	df=29, U=90 (p=0.320 ^a), Mann-Whitney-U-Test
Export	2.1	1.7	df=29, U=60.5 (p=0.20 [*]), Mann-Whitney-U-Test

^a Differences between group A and B are not statistically significant.

^{***}Differences between group A and B are significant at 0.001 level, ^{**}significant at 0.01 level or ^{*}significant at 0.05 level.

Table 19: Reasons stated by participatory (A, n=15) and externally certified farmers (B, n=15) justifying their preferred sales channel (Table 18), open question

A	B
<ul style="list-style-type: none"> • Organic philosophy • Trust • Efficient organisation • Sales guarantee • Higher returns • Good reputation 	<ul style="list-style-type: none"> • Higher prices • Sales of large quantities • Lack of demand impedes national sales

5.2.5 Social capital

The responsibility for compliance of production and processing quality with recognised organic norms and standards lies in the hands of producers themselves, according to the opinion of 13 farmers in group A and twelve in group B. Respondents in both groups explain that the farm as the first stage of the food production chain plays the most important role for the quality of the organic product. The remaining respondents in each group believe that the committee of the organised producer group or the actor(s) inspecting their plots for

certification are responsible. Differences between the groups are not statistically significant (df=2, $X^2=0.373$, p=0.83).

Their relation to consumers in the market is determined by trust for nine farmers in group A and the basis for communicating the quality of their organic products to them (Figure 21). In group B, for five farmers the most important means of communication with their consumers is the organic seal. This is also the second most important option in group A. Four farmers of group B believe that high prices convey best the added value of their organic products to consumers, whereas none of the farmers in group A do so.

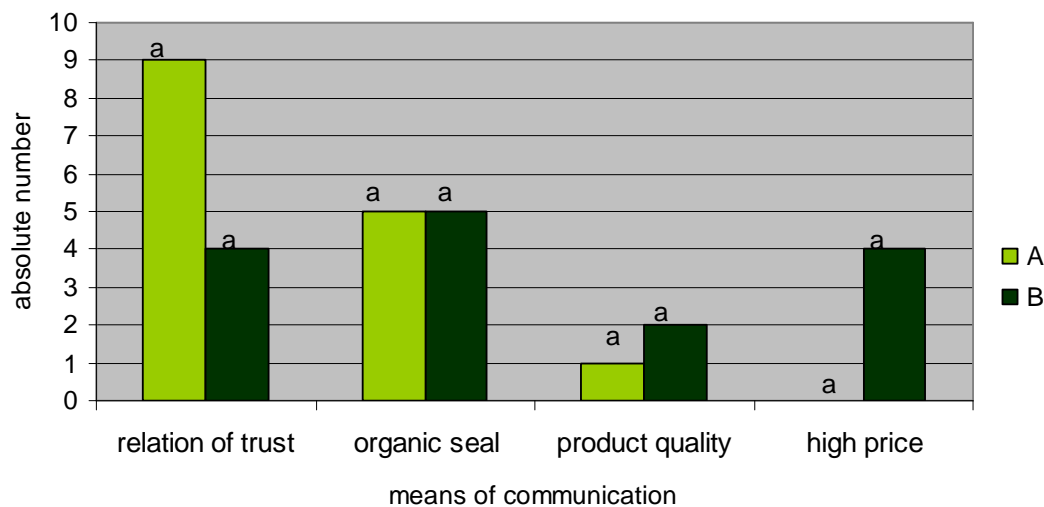


Figure 21: Preferred means of communication of organic quality towards consumers by participatory (A, n=15) and externally certified farmers (B, n=15)

^a Due to unfulfilled test conditions differences between group A and B are not analysed statistically.

Eight participatory certified farmers consider their village neighbours as reliable persons in case of emergency (Figure 22). On the contrary, in such a situation only two externally certified respondents would ask their neighbours for any kind of support as food, money or emotional backup. In group A the second most frequently mentioned persons are the members of the own organised producer group, while in group B there is more trust into the government instead. Moreover, six externally certified farmers don't rely on anyone at all in situations of emergency. Those respondents explain that there is a fundamental lack of solidarity among the association's members.

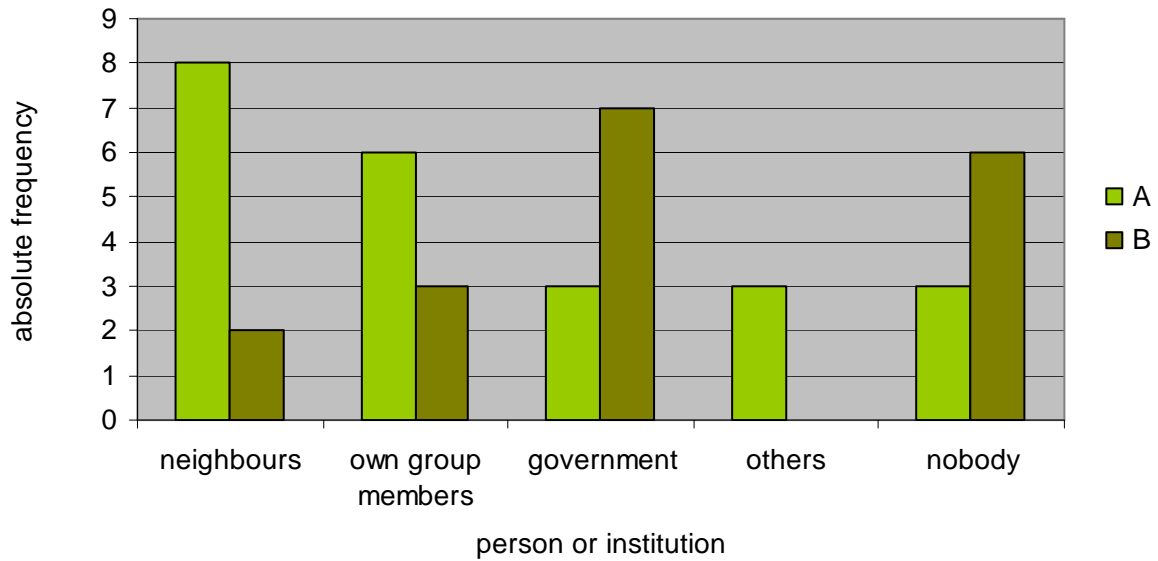


Figure 22: Persons or institutions perceived as reliable in case of emergency by participatory (A, n=15) and externally certified farmers (B, n=15), multiple answers to open question

93% of respondents in both group A and B are willing to collaborate with their association members for the purpose of an investment for a collective benefit, such as in case of a vehicle for transport ($df=1$, $X^2=0.0$, $p=1.000$). In both groups many of them mention the need for solidarity among group members and the importance of equal benefits to all of them as important reasons.

Farmers in group A perceive that the most important learning processes for organic management they participated in, are seminars on compost production (seven respondents) as well as courses on the cultivation of specific crops, as flowers, vegetables or coffee (three respondents). In group B courses on soil conservation (eg. constructing terraces, applying green manures; five respondents) and compost production (three respondents) are named as most relevant learning contents. Three farmers in group A think that most important learning processes result from exchange of experiences among group members and/or neighbours, which is not mentioned at all by group B (Table 20).

Table 20: Topics of learning processes perceived as most important by participatory (A, n=15) and externally certified farmers (B, n=15), absolute frequency (open question)

Topic	A	B
Producing compost	7	3
Cultivation of specific crop ^a	3	2
Implementation of living barriers	1	2
Exchange of experience	3	0
Pest management	1	1
Soil conservation	0	5
No learning processes observed	0	2

^aIncluding flowers, vegetables, coffee.

14 farmers in group A perceive local research institutions as most central partners in processes of capacity building or specific training on organic practices, while for eight respondents in group B advice and training received from non-governmental organisations is most important. Learning processes by interaction with other farmers, as colleagues in their producer group or village neighbours, have been mentioned second most frequently by participatory certified farmers. None of the externally certified respondents shares this opinion, which confirms the groups' different priorities among topics of learning processes (Table 21).

Table 21: Important partners in learning processes perceived by participatory (A, n=15) and externally certified farmers (B, n=15), absolute frequency (multiple answers to open question)

Partners in learning processes	A	B
Non-governmental organisations ^a	2	8
Public reserach institutions	14	3
Governmental institutions ^b	4	3
Other farmers	8	0
Group leaders	0	3
Certification body	0	1
Nobody	0	2

^aIUCN, others not specified.

^bIncluding specific public support programs from commission for naturally protected habitats, commission for national forestry.

5.3 Perception of organic certification

5.3.1 Meaning of organic certification

Participatory and externally certified farmers mention different aspects about the meaning of organic certification. In group A the numbers of mentioned different positive and negative connotations of organic certification are almost balanced (Table 22). Most intensely participants emphasise the benefits of learning processes in seminars, on-the-field trainings as well as through exchange among association members. For two women the chance of being able to undertake and share experiments in production and marketing represents an important benefit. Both male farmers give neutral definitions of organic certification. However, the mentioned fact that no one in the association has been certified to date, makes participants enter an emotional discussion on the causes. Among them, particularly the lack of resources as a major hindrance and the problem of neighbours applying pesticides on their plots, are central.

Table 22: Neutral (o), positive (+) and negative (-) connotations of organic certification mentioned by participatory certified farmers (n=5)

o	<ul style="list-style-type: none"> • Verify conversion to organic agriculture in the field by certification committee
+	<ul style="list-style-type: none"> • The chance to experiment • Proof of quality to consumers • No agrochemicals and rubbish on the fields • Pronounce difference between “natural” and “organic” • Learning process of producing compost
-	<ul style="list-style-type: none"> • Applied pesticides on neighbouring fields • Worries about failing in inspection of field due to lack of capability in working organically • Lack of resources for inversion for achieving compliance with organic standards (slow process) • Hired workers on fields throw plastic materials due to lack of awareness

The connotations mentioned by externally certified farmers are mainly centered around the added value of the organic product and the better price producers receive at the market (Table 23). There is a marked pronouncement of negative aspects in the discussion. The challenge of additional investments to meet standards, referring to high labour demand of organic agriculture and the certification fees, receives particular attention of two elder male

participants. The young farmer in the group rather tends to insist on the positive aspects of organic production. He ascribes the discussed negative connotations of certification to problems of organisation and motivation within the association. However, all participants are connecting organic certification with the top-down-fashion in certifiers policies and practices who often ignore the challenges farmers face in complying with standards. Furthermore, a participant mentions that compliance with expectations of organic consumers is what defines producers' relation to them. All agree that this fact implies additional pressure on farmers since they are mainly exporting organic coffee and don't have other means of communication with consumers.

Table 23: Neutral (o), positive (+) and negative (-) connotations of organic certification mentioned by externally certified farmers (n=3)

o	<ul style="list-style-type: none"> • Rules for production that distinguish quality standard of organic products
+	<ul style="list-style-type: none"> • High quality of products benefits producer • Farmer receives better price for product • Benefits in all dimensions – producers, consumers, environment, communities • Care for the environment and improvement of field
-	<ul style="list-style-type: none"> • Certification bodies ignore situation of farmers • High inversion necessary in order to comply with rules of production • More work but lack of manpower • Cost of certification • Distance between producer and consumer due to lack of direct sales • Failure of internal control of organic rules • High quality standards due to pressure of foreign buyers imply high cost

In comparison, among externally certified farmers discussions on the meaning of organic certification are more emotional and dominated by negative aspects in their quantity and length than those of participatory certified participants.

5.3.2 Benefits of organic certification

Participatory and externally certified farmers both observe a vast diversity of benefits of organic certification in the social, economic, health, cultural and environmental dimension. Their comments are largely of similar nature, except in the social dimension where group A lists twice as many benefits of organic certification than group B (Table 24). In group B the first benefits listed relate to the organic price premium and market access, while participants

of group A first mention benefits from learning processes they experienced. Two externally certified farmers in the discussion argue that disadvantages of organic certification are by far dominating advantages and undertake several attempts to put them into the centre of discussion. Different opinions between elder and younger participants are characteristic for group B. As such, the younger farmer stresses the role of practical know-how as well as the level of motivation in order to outweigh the high workload.

Table 24: Thematically arranged benefits of organic certification perceived by participatory (A, n=5) and externally certified farmers (B, n=3)

A	B
Social benefits	
<ul style="list-style-type: none"> • Success gives self confidence and satisfaction to producers • Creation of trust between consumers and producers (proof of quality) • New ways of collaboration (among farmers, consumers, researchers and others) • Acquire knowledge on various different topics • Learning processes and capacity building • Exchange of products among producers • Success increases motivation among group members and attracts more farmers • Personal freedom for experiments • Creative and innovative methods for problem solution 	<ul style="list-style-type: none"> • Group work is beneficial • Together we can be more successful • Present a good example for others instead of convincing others of organic production • Same work load as conventional agriculture if you have the know-how
Economic benefits	
<ul style="list-style-type: none"> • Organic products mean higher price due to their higher value • Regular income since organised in group compared to former coffee sales • Reduced cost due to collaboration in group (transport etc.) 	<ul style="list-style-type: none"> • Economic benefits slowly increase • Reception of quality premium • Production is more stable in the long run
Health benefits	
<ul style="list-style-type: none"> • Healthy food with a lot of vegetables 	<ul style="list-style-type: none"> • Healthy for producer and consumer
Cultural benefits	
<ul style="list-style-type: none"> • Recultivation of neglected local food culture (products, forgotten meals) 	
Environmental benefits	
<ul style="list-style-type: none"> • Raising consciousness of consumers for locally traditional food 	<ul style="list-style-type: none"> • Soil conversation • Environmental consciousness increases and slowly inspires others

Apart from differences in observed benefits of organic certification itself, farmers in group A and B mention benefits of collective organisation in the same thematic areas, but with different frequency (Table 25). As such, *cooperation and solidarity* are the most frequently observed benefits among participatory certified farmers, while *access to subsidies and support programs* is most present among those with external certification. In both groups total quantity of received comments is similar.

Table 25: Benefits from collective organisation for organic marketing perceived by participatory (A, n=15) and externally certified farmers (B, n=15), absolute frequency (multiple answers to open question)

Category of benefits	A	B	Total
Cooperation and solidarity	8	6	14
Motivation and Innovation	5	1	6
Learning processes	2	3	5
Reduction of production & sales cost	3	0	3
Higher income	4	3	7
Access to organic certification	3	1	4
Access to market	3	5	8
Access to subsidies and support programs	0	7	7
Other	2	2	4
Total	30	28	58

Bold numbers indicate dimension of benefits most frequently mentioned in each group (multiple answers).

5.3.3 Negative aspects of collective organisation and organic certification

The most important challenge of organic certification lies within the *lack of resources for investments* in both groups, mentioned by eight farmers in group A and six in group B (Table 26). Most farmers referred to investments necessary to meet the quality standards demanded in organic standards (eg. creating a fence for chicken in order to keep them away from vegetables).

Table 26: Challenges of organic certification of participatory (A, n=15) and externally certified farmers (B, n=15), absolute frequency (multiple answers to open question)

Categories of challenges	A	B	Total
Lack of trust	2	1	3
High workload	3	3	6
Lack of resources for investment ^a	8	6	14
Lack of farmers willing to join an organised group	0	2	2
Lack of time	3	0	3
Ineffective organisation within organised group	0	3	3
Avoid use of agrochemicals ^b	1	2	3
Change to organic philosophy	0	2	2
Other ^c	3	0	3

^aReferring to cash, access to credit, production material, seeds or land.

^bReferring to respondent her/himself or neighbouring farmers in village (synthetic fertilizer, pesticides).

^cIncludes challenges appearing less than once in each group.

The most frequently mentioned negative aspect of collective organisation for organic marketing is the *lack of honesty* in group A and the *lack of transparency* in group B (Table 27). In both groups total quantity of received comments is similar.

Table 27: Disadvantages from collective organic marketing perceived by participatory (A, n=15) and externally certified farmers (B, n=15), absolute frequency (multiple answers to open question)

Categories of disadvantages	A	B	Total
Lack of responsibility	3	0	3
Lack of honesty	7	0	7
Competition among producers	4	0	4
Conflicts among producers	1	3	4
Lack of efficient organisation in group	1	2	3
Lack of motivation	4	2	6
Lack of transparency	0	5	5
Social disparities and lack of solidarity	2	2	4
Delay of payments	0	2	2
Lack of investments	0	3	3
Lack of producers willing to organise themselves	0	2	2
None	3	3	6
Other	0	2	2
Total	25	26	51

Bold numbers indicate disadvantages most frequently mentioned in each group (multiple answers).

Among the perceived challenges of organic certification and disadvantages of collective organisation for marketing several topics coincide. As such, the issues *lack of trust*, *lack of producers willing to join an organised group* and the problem of *ineffective organisation* are negative aspects for farmers in both respects, which supports their importance.

On the whole, a combined analysis of both areas where farmers perceived challenges shows that *lack of trust* (36% among all named challenges) is the most frequently mentioned challenge in group A (Figure 23). *Lack of resources* is the major challenge in group B (26%) and receives support in group A (32%) too. The problems of *lack of transparency* and *ineffective organisation* receive almost the same attention in group B, while both categories hardly play any role in group A. 20% of farmers in both group A and B don't perceive any challenges.

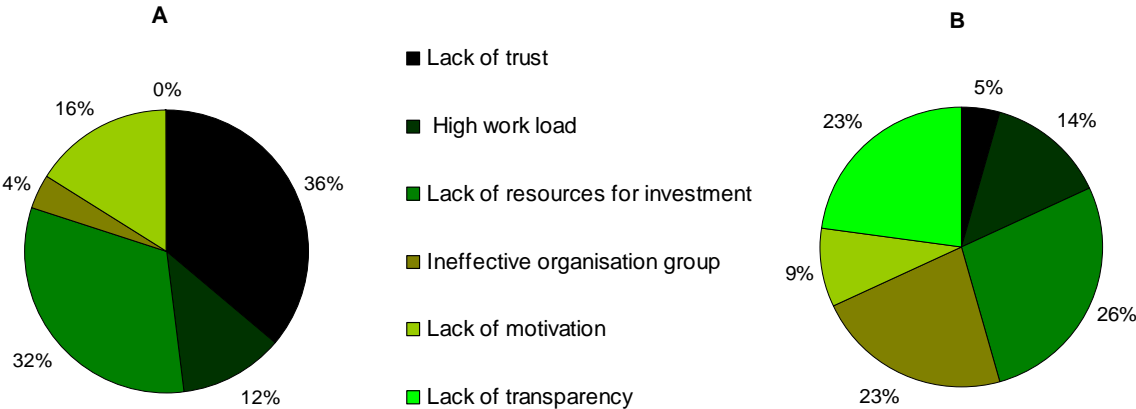


Figure 23: Integration of negative aspects most important to participatory (A, n=15) and externally certified farmers (B, n=15) in the areas *challenges of organic certification and disadvantages of collective organic marketing*, absolute frequency (multiple answers to open question)

In focus groups, participatory and externally certified farmers evaluate the six most central problems (Figure 23) and additional problems they perceive as important. In both groups three different aspects are added by participants. The problem *lack of responsibility* is aggregated by both groups to the list of problems. (Table 28). Group A democratically selects the problem *lack of resources for investment* as the most important one for deeper analysis. Group B decides on the problem *ineffective organisation within group*. The problem evaluation in group A demonstrates a clear focus on economic aspects, while group B identifies their central problems in the social area. Due to a small number of participants in both focus groups, a discussion of the result of evaluation and another democratic voting among the selection of a problem serves as an important additional step for consensus.

Table 28: Total number of votes per problem evaluated by participatory (A, n=5) and externally certified pesants (B, n=3)

Selected problems in focus group A		Selected problems in focus group B	
Lack of trust	1	Lack of trust	2
High work load	0	High work load	0
Lack of resources for investment^a	3	Lack of resources for investment	1
Ineffective organisation in group	2	Ineffective organisation within group^a	2
Lack of motivation	1	Lack of motivation	0
Lack of transparency	0	Lack of transparency	1
Lack of time ^b	3	Lack of producers willing to organise themselves ^b	1
Competition among farmers ^b	1	Conflicts among farmers ^b	0
Lack of responsibility ^b	4	Lack of responsibility ^b	2

^aProblem selected for problem tree analysis. ^bAdditional problems identified by participants.

5.3.4 Causes and solutions to challenges of collective organisation and organic certification

Participatory certified farmers define complex facets of the problem *lack of resources for investment* and identify its causes (Table 29). The lack of seeds, construction materials and manpower dominate the discussion. Participants also tackle these aspects when discussing the meaning of certification (5.3.1 Motives for organic agriculture), which emphasises its relevance.

Table 29: Facets of the problem *lack of resources for investment* and its causes identified by participatory certified farmers (n=5)

Facets of problem	Causes
Robbery of harvest from fields	<ul style="list-style-type: none"> • Fields are located far from households • Dishonesty/rivalry between communities
Resources for elaborating compost	<ul style="list-style-type: none"> • Loss of knowledge on resource use (grandparents still knew how to manage nutrient cycles) • Disinterest and laziness
Lack of manpower for difficult tasks	<ul style="list-style-type: none"> • Lack of men in community (many single women)
Lack of time for managing workload (particularly during peaks as time coffee harvest no room for other tasks) High rental fees for land	<ul style="list-style-type: none"> • Lack of organisation and collaboration for managing workloads • Ineffective spatial use of land • Rivalry between large-scale land owners and farmers of group A
Soil erosion reduces fertile land	<ul style="list-style-type: none"> • Lack of agroecological soil management practices
Lack of seeds	<ul style="list-style-type: none"> • Loss of seed propagation by villagers creates loss of locally adapted seeds and varieties not available from other sources • Lack in offers of organic seeds (market, shops...)
Equipment and material for production, marketing and construction (bricks, water pipes, tools, transport...)	<ul style="list-style-type: none"> • Lack of organisation and collaboration for sharing equipment
Cash	<ul style="list-style-type: none"> • High investments required for organic production and commercialization (transport to market etc.)

Furthermore, they work on potential solutions to the problem. Solutions are oriented at farmers' opportunities and capabilities. They represent approaches farmers may realise primarily without dependencies on third parties but rather support their autonomy and self-empowerment when addressing problems (Box 3). A large part of identified solutions aims at strengthening social cohesion among the association's members. However, discussed propositions remain at a quite abstract level and need more practical specification in order to

be realisable. Instead, participants concentrate on discussing that the most passive members of the association should take responsibility for solving detected problems.

Box 3: Potential solutions to the problem *lack of resources for investment* developed by participatory certified farmers (n=5)

- Collaboration in cultivation of fields among neighbours
 - Have patience for slow development processes
 - Cooperation for investment in equipment
 - Save money in household for larger future investments
 - Support of innovative, new ideas
 - Acquire land close to household
 - Improve efficiency with cultivation on canopied plots
 - Pursue teamwork
 - Clear rules to be respected in group
-

In focus group B participants don't discuss the elected problem *lack of organisation within the association*, but concentrate on the identification of its causes (Box 4). While doing so, they draw comparisons from other examples of farmers associations in the region which are more successfully. They also mention advantages of the group of participatory certified farmers I analysed in this study.

Box 4: Causes of the problem *ineffective organisation within association* identified by externally certified farmers (n=3)

- Lack of responsibility (very intensely discussed)
 - Lack of honesty (very intensely discussed)
 - Conflicts due to different ideologies
 - Lack of transparency (eg. Targets of organisation, accountancy)
 - Lack of honest leadership
 - Lack of external management control
 - Lack of social cohesion among farmers (friendships, solidarity)
 - Lack of interest and active engagement of members
 - Lack of serious commitments
 - Lack of communication (eg. no frequent meetings)
 - Lack of trust in/liability of organisation (affected reputation)
 - Lack of members with management skills (leadership, project management, administration)
-

When identifying potential solutions, farmers discuss innovative ideas in a very practical way and already elicit first steps for the implementation of working groups within their organisation (Box 5). While the youngest participant emphasises the importance of collaboration among young and old farmers in the village, one of the elder ones argues that innovations as such would be unrealistic. However, all participants agree on the most important step of an immediate formation of working groups for different tasks.

Box 5: Potential solutions to the problem *ineffective organisation within association* developed by externally certified farmers (n=3)

- Capacity building and diffusion of organic philosophy and practical training by skilled villagers (eg. young educated inhabitants as agronomists)
 - Unite interested farmers of different villages and skilled trainers (NGOs, researchers...) for the organisation of a training program (more people increase economic efficiency and success)
 - Integrate knowledge and experience by collaborations of young and old villagers
 - Form teams with members of different skills and age and distribute work packages
 - Eliminate hierarchy among association's members
-

6 Discussion

6.1 Socioeconomic differences of farmers

Farmers with participatory (A) and external (B) certification in Cacahoatán differ in several aspects of their socioeconomic status. Significant differences can be shown in age, sex, marital status, land property, employed labour force, their principal product marketed and their degree of organisation. Their level of education, principal income source and sales channel is similar. Hence, H1a, H1b, H1d, H1e, H1f and H1h must be rejected, while H1c, H1g and H1i can be accepted.

Participatory certified farmers tend to be younger than those with external certification. This fact can be related to the necessary openmindedness and lower risk aversion when engaging in a new and uncommon form of organisation and marketing in a region or village, as SCOONES (1998) points out in his concept of conditioning factors of livelihood strategies. This assumption leads to suggest that younger farmers more frequently fulfil this precondition since they are less bound to traditions and show more optimism and trust into innovative alternatives. Furthermore, age distribution in group A is in line with findings of ESCALONA AGUILAR (2009), who showed that only 15% of farmers in six associations with PGSs of the Mexican network of organic markets are elder than 55 and that in some cases the majority is younger than 35. In some of the markets he investigated, a high number of students is involved in the associations due to the cooperation with local universities or research institutions. However, in the case of Cacahoatán, there are no students involved in the PGS group, although it is collaborating closely with ECOSUR. Nevertheless, the double share of participatory farmers who attended secondary school, compared to externally certified ones, is almost significant.

From the perspective of ZANASI et al. (2009), higher education is a major precondition for the implementation of a organisationally and technically sophisticated PGS, which might explain the difference between the groups. On the other hand, compared to findings of ESCALONA AGUILAR (2009), the educational level in group A is by far lower than in other Mexican organic associations (on average 60% with professional education, A-level or academic education) since there are no respondents with university studies or other education higher than secondary school. Nevertheless, educational and professional background is considered to impact considerably on farmers' roles and level of participation as well as the related development and success of an association (ESCALONA AGUILAR 2009).

A high share of women (80%) in group A compared to group B (20%) is common too in other Mexican PGSs (65% or more female; ESCALONA AGUILAR 2009). In line with CÁCERES (2005) and GÓMEZ TOVAR et al. (2009) this fact can be regarded as a sign of female empowerment in rural areas. The responsibility for organising and attending their stand at the organic market can offer a certain independency as well as increased social recognition. In contrast, group B confirms the observation that coffee trade is typically men's business in Cacahoatán. However, from another perspective, differences among distributions of sex might reflect traditional patterns. Hence, men use to have responsibility for larger cash flows in the household, as common in coffee trade. Meanwhile, women are typically occupied with reproductive work, which fits the tasks of preparing goods and warm dishes for sales at the market. However, ESCALONA AGUILAR (2009) concludes from his findings that collective marketing in a PGS with all involved tasks is usually shared among all family members.

From another perspective, findings support the assumption that PGSs are an essential income opportunity particularly for single women. Participatory certified women are more frequently single (27%; no single women in B) or live in informal relationships with their partners compared to those with external certification. An explanation might be the wellknown phenomenon of emigration in the Mexican countryside. Poverty frequently forces men to go North for work and leave their families, often without returning home. The coffee crisis and withdrawal of state support in the agricultural sector since the 1980s was and still is a major driving force behind this trend (CALDERÓN et al. 2001, CRUZ BOURGETE and CRUZ SALAZAR 2007). On the other hand, group B represents more traditional family patterns. Its majority are farmers who resisted sinking coffee prices and even expanded production. This observation also becomes visible in the mean land property of externally certified farmers (5.5 hectares). They are more affluent and thus able to invest in specialised production, compared to farmers of group A, who own 1.7 hectares on average.

However, considering the definition of NELSON et al. (2010) and GÓMEZ TOVAR et al. (2005), Mexican smallholders are farmers with less than 30 hectares of land. In this light, both groups A and B are included in this range. Still, highly significant differences between the groups show analogies to the bimodal pattern of Mexican organic agriculture, consisting of 98% very small farms (mean 3.3 hectares) or large-scale producers with a mean farm size of 27 hectares. In this distribution GÓMEZ TOVAR et al. (2005) perceive a replication of the extreme social disparities of the Mexican countryside in the organic sector. A better economic status of externally certified farmers is also reflected in the mean number of four seasonal workers employed annually, compared to one worker hired on average in group A.

GÓMEZ TOVAR et al. (2005) argue that organic third-party certification does not include labour standards, which permits affluent producers to employ cheap labour, creating considerable competition for small producers relying on family labour. In Cacahoatán most temporal labourers are Guatemalan due to the close border of their country with Mexico. In this region, particularly in coffee production, large fincas are known for their violation of migrant workers' human rights, including children's exploitation (CORTEZ PÉREZ et al. 2005, PÉREZ-GROVAS et al. 2001).

All these characteristics indicate differences in the livelihood strategies of externally and participatory certified farmers. Although both consider agricultural marketing to be their major income source, group A is more frequently engaged in other income-generating activities and relies stronger on subsistence in terms of food provision. This fact can be regarded as a consequence of the low development of the internal Mexican organic market (ASERCA 2005), which provides more easy access for producers specialised in traditional cash crops such as coffee in case of group B. Diversified offers of vegetables or fruits frequently don't fit the current configuration of sales channels, even if marketed collectively. This is due to the focus on export of large quantities and the fact that national organic demand is very low. It explains the different sales channels, such as the organic market in group A and the trading with national and international intermediaries or direct export in group B. This pattern fits the conclusion of GÓMEZ TOVAR et al. (2005) that Mexican organic farmers are oriented more towards export markets the larger their production-scale.

However, although not significant, it is surprising that more than half of participatory certified respondents principally sell their products, mostly coffee, via intermediaries. Obviously, sales at the organic market doesn't provide enough income for farmers of group A. A reason therefore might be its young stage of development and farmers' reluctance to fully give up a livelihood strategy they have been pursuing for a long time. Hence, coffee remains the principal product, not only for externally certified farmers but also for the participatory certified group. However, ESCALONA AGUILAR (2009) reports from his study on Mexican associations with a PGS that on average 70% of producers at the eldest established markets state to earn higher incomes due to their integration into the association. Apart from formal sales channels, I observed many respondents selling their goods, including hot dishes and snacks, at the streets in the villages or cities of the region. It seems that low restrictions in this informal market sector enable important income opportunities for farmers. Apart from limited market access for participatory certified farmers, the high diversity of their products marketed (≥ 3 by all farmers), compared to group B (≥ 3 by one farmer), supports resilience

for the families' livelihoods. CÁCERES (2005) in his study on Argentinian non-certified organic markets, emphasises the value of the availability of fresh food at the farm that considerably reduces dependence on monetary economy. Moreover, it can induce activities of exchange as a form of "off-farm-productive diversification" among farmers, sustaining their food security.

In case of group A, high diversity is also visible in the fact that 93% of farmers are active in three or more organisations at village level, as cooperatives or associations with different aims, while 27% in group B are members in two or less organisations. This is a sign of pronounced social activities among villagers and leads to question whether interactions among farmers do also stimulate the melting of different approaches to organic marketing and certification, as represented by group A and B. An indication therefore is the fact that three of 30 respondents are both participatory and externally certified. Consequently, the notion of two different mentalities of group A and B is weakened. Instead, I assume that chosen livelihood strategies are sometimes just reflections of different opportunities free to choose and that participatory certification is not strictly designed for the most needy. Nevertheless, characteristics of group A and B might fit the trend of two different approaches to organic agriculture, either more holistic and life-style-oriented or as a pure marketing opportunity. In this sense, group B is closer to the share of Mexcian farmers favoured by the actual market dynamics and organic certification practices than group A, when considering the analysis of GÓMEZ TOVAR et al. (2005).

Finally, it can be concluded that education is the only factor that indicates an economically higher status of participatory than externally certified farmers, although not significant. In all of the other economically relevant aspects group B tends to be better off in the short run. Hence, findings indicate that farmers facing poorer living conditions are more likely to participate in a PGS. However, in the long run higher diversification in income sources, products marketed and social activities, even though sometimes a consequence of necessity, might turn out to be essential advantages for participatory certified farmers in order to pursue a sustainable livelihood.

The above findings are indicators giving a basic idea of the socioeconomic character of both groups. However, they need to be put into a wider sociological context for a profound analysis. Apart from individual and household level, other important factors, including some aspects at village level, need to be considered. During fieldwork it became clear that dominant religious beliefs in the villages, ethnicity, kinship as well as political and economic power relations and general living conditions related to the development status of the village

are potential influence factors on a farmers' decision on marketing organic products with participatory or external certification. However, the scope of the study didn't allow for further empirical research on these factors.

6.2 Differences in motives and attitudes of farmers

6.2.1 Motives for organic agriculture

Participatory certified farmers tend to be committed to organic agriculture mainly due to health reasons and the aim to secure their subsistence. Their perception is in line with findings of ESCALONA AGUILAR (2009) from six Mexican organic associations with PGSs. However, in his study environmental and social reasons play important roles too, which are underrepresented in group A as well as group B. Organic farmers in group B are more strongly led by economic motives. These tendencies become visible indirectly in their wish to cultivate more of crops or perennials led by market-oriented reasons such as higher prices, better yields or diversification of their offer. While group A also aims at a more diverse product range for marketing, sustaining their food security and sovereignty plays an important role for many of them. The importance of economic motives among externally certified farmers leads to assume that pure business relations dominate interactions among the group's members. Finally, both economic and health motives are related to personal benefits rather than altruistic intentions such as environmental health or consumer and common welfare. However, ZANASI et al. (2009) emphasises that egoistic motives are frequently less volatile than altruistic approaches to organic agriculture, and thus more likely to support sustainability of organic initiatives. On the other hand, the dominance of health motives reflects the strong focus of Mexican media, public promotion and agronomists on the health aspects of organics, as I observed in my study area. The obvious lack of awareness for environmental protection may be linked to the country's low progress in environmental policies and possibly is a sign that existence needs are preventing to think beyond.

Quantitative data on organic farmers' motives alone does not serve a comparison of group A and B, but together with qualitative information gives a clear picture of their differing reasons for organic agriculture. Consequently, H2a must be rejected. The following findings of the in-depth-analysis of farmers' attitude of organic agriculture in ecological, health, economic and social dimension (6.2.2 Agroecological principles in farmers' attitude) further support this conclusion in various aspects.

6.2.2 Agroecological principles in farmers' attitude

6.2.2.1 Human health

Farmers' knowledge about healthy nutrition and the influence of pesticides on human health shows high levels in both groups. The importance of vegetables for participatory and externally certified farmers in daily meals is also reflected in their health recommendations to consumers. In contrast to these findings is the fact that none of the farmers is marketing vegetables as their principal product. Also in group A, where all respondents sell three or more products at the organic market, vegetable diversity is low. Furthermore, the majority is derived from wild collection or species that are easy to cultivate, like different leafy vegetables, *chayotes* or pumpkins. Hence, I assume that vegetable cultivation in homegardens is reduced and almost exclusively for own consumption. This is further supported by my observations in the field that vegetable consumption is generally low in both group A and B. It is mostly replaced by a strongly carbohydrate-oriented nutrition based on *tortillas*, prepared of industrially processed and cheap maize flour "*maseca*", instead of home-grown local maize varieties. Many farmers buy this staple together with other food at one of the numerous little shops in every village, selling mainly a range of highly processed sugary and fatty products. Hence, it is doubtful, whether respondents' diets are healthy and in congruence with their reported attitude, also because of a strong presence of obesity among them. Nevertheless, the strong focus on nutrition among farmers' health recommendations indicates that they are conscious about the impact of food quality ("natural food", "local food", "balanced diet") on their health and relate their activity of organic farming with their lifestyle.

The fact that about half of the respondents in group A and two thirds in group B relate the application of agrochemicals on the fields with serious health effects (eg. cancer, intoxication) and almost all interviewees with at least unspecified health problems, signals a quite high level of awareness. In contrast, only 50% of interviewed farmers in the community of a neighbouring region don't see any relation BERNARDINO HERNÁNDEZ et al. (2010). Possibly the high awareness in group B is a result from their experience with serious health effects since many more than in group A formerly applied pesticides (5.2.3 Environmental health) Furthermore, several of them reported to have seen neighbouring farmers dying as a consequence.

On the whole, health awareness might be a result of capacity building in seminars and workshops both groups organise in cooperation with different institutions. However, since

farmers didn't mention health issues as important learning contents of such events (5.2.5 Social capital), it is more likely that their responses have been shaped by public support programmes for rural communities in recent years. As such, the programme "*Vivir mejor*" provides subsidies to farmers in the study region if they participate in seminars on child health, nutrition and other topics.

6.2.2.2 Environmental health

Ecological awareness of participatory and externally certified farmers can be considered at a medium level in most of its analysed subdimensions. Groups don't differ significantly, except for their support of organic principles in land management (5.2.3 Environmental health).

However, findings indicate a tendency of group A to be more in favour of traditional polycultural agroforestry-systems than group B, while the latter tends to overlook negative ecological impacts of systems as monocultures. It can be assumed that the reported emphasis on organic management practices in events of capacity building is a major factor for significantly and almost significantly higher levels of awareness in group A (5.2.5 Social capital). Group B has almost significantly more farmers, who applied agrochemicals in the past, than group A. Many of them only quit in 2000, three years after the demise of the Mexican coffee institute (INMECAFÉ). Based on related comments of farmers, I assume that those farmers have used agrochemicals because they were subsidised by INMECAFÉ under a state support scheme for coffee export since the 1970s. On the contrary, comments of several farmers in group A indicate that they used to reject support due to the fear that pesticides would destroy their soils. Hence, it seems that more participatory certified farmers than externally certified ones, have followed organic principles independently from economic conditions before participating in any form of external capacity building. Anyhow, all respondents of group A and 93% of group B demonstrate their organic integrity by their rejection of agrochemicals independent from cost factors.

However, both groups perceive the majority of presented locally typical arthropods and vertebrates as enemies, which signals a lack of understanding for beneficial food webs essential for the functioning of organic agroecosystems. The level of orientation at ecological principles can further be observed in present and future landuse. Hence, the current dominance of coffee on the fields of group B, often grown without beneficial associations of perennials or crops, and the fact that coffee isn't an endemic Mexican perennial, represents a fundamental difference to group A. Group A is not as specialised and grows at least three different crops. Its farmers list four or more species of vegetables or fruits they wish to

cultivate in future, while six in group B don't name any specific cultivar. Moreover, two thirds (group B) or more (group A) of farmers propagate their own seeds, which indicates the use of locally adapted plant-genetic material. All these respondents confirmed this assumption by justifying their major source with quality-related arguments. In spite of these facts, many native species and local varieties are not cultivated anymore in the highlands of Cacahoatán. As evident all over the country, they have often been replaced by exotic species, as the now widespread *rambután*, or genetically modified varieties, as in the case of corn (GÓMEZ CRUZ et al. 2010). Consequences are visible in a 25% share of native species in organic farmers' offer in six Mexican associations (ESCALONA AGUILAR 2009), which further supports the role of associations such as group A in conservation of agrobiodiversity.

6.2.2.3 Sustainable food economy

It can be concluded that farmers of PGSs are more likely to be advocates of food sovereignty, compared to externally certified farmers. Hence, economic perceptions of group A are shaped by the wish to building capacity for a need-oriented production, nutritional self-sufficiency and a dignified, healthy and culturally appropriate nutrition. These aims are supported by their production which is increasingly converting towards more diversification in locally common staples. Their orientation is further reflected in their preferences for future land use, compared to group B. Differences in diversification of organic smallholders selling at farmers markets and those producing cash crops for national or international markets have also been demonstrated by CÁCERES (2005). He concludes that systems of the first are importantly contributing to food safety and sovereignty with 29 cultivated species compared to only nine species in the latter group of farmers. The value of agrobiodiversity is further communicated by traditional recipes based on rare local crops that farmers of group A offer to consumers at the organic market and when participating in cultural events of the region.

Group B particularly differs from A in their low interest in consumers' stake which reflects the lack of their direct interaction with consumers in reality. Accordingly, externally certified farmers' first choice among sales channels is the export of organic products. Group A's preference to sell at the organic market does not coincide with the principal activity of its members since they market only 40% of their annual produce in this sales channel. The major part, however, has been sold to intermediaries for national sales or export in the past year. Still, the group's first choice confirms their satisfaction from their activity at the organic market, even though not principally due to economic reasons. Instead, integral social principles of PGSs become obvious in the reasons for their choice (trust, efficient

organisation), while group B seems to exclusively focus on economic benefits. In both groups the second preference is exactly each other's most favoured option. I suppose that this is partly the result of exchange of experience among farmer groups. Farmers' choice in both groups indicate that they expect more benefits from export than from national sales. This might be due to the organic price-premium that intermediaries don't pay to them when trading at Mexican markets because of a lack in demand for organic products. High popularity of export can further be a result of intense public promotion of the state's organic export strategy and corresponding support programmes in recent years (2.4.2 Certified organic agriculture – the Mexican bimodal split). On the other hand, the local organic market of group A seems to have a good reputation and also represents a viable sales option for group B. Apart from oral exchange, large family networks within a single village are practicing traditional bartering systems. This might partly explain the proximity of the options "organic farmers market" and "export market" in the ranking of both groups since it implies that, in fact, many more than the three respondents with official bimodal organic certification participate in both sales channels.

6.2.2.4 Social capital

The group of participatory certified farmers tends to be richer in individual and collective social capital than group B. Exclusively in terms of responsibility and the willingness to cooperate for common investments they reach almost the same levels. Findings clearly demonstrate that high solidarity among farmers in group A and collaboration, as through the exchange of experience or seeds, are important factors of success in organic marketing and certification. Success has been confirmed by participatory certified respondents naming a large number of social advantages from collective organisation. CÁCERES (2005) confirms the crucial impact of the quality of organisation on an association's development. In contrast, group B is obviously struggling with organisational difficulties, mainly rooted in social problems among its members (5.3.3 Negative aspects of collective organisation and organic certification). It can be concluded that this group's strong economic motives for organisation are hindering the development of social capital. A notable difference between the groups is that two thirds of participatory certified farmers prefer to have a relation to consumers that is based on trust instead of an organic seal as a proof of quality, while group B mainly believe in the label or price to be the most convenient medium. Although, their different principal sales channels are partly explaining this contrast, the importance of trust for participatory certified farmers is an indicator for the functioning of the PGS, independently from expensive official inspection of producers by third parties. According to ESCALONA AGUILAR (2009)

many consumers at Mexican organic markets are confirming this notion with their conviction to rely on honesty based on personal contact rather than organic seals. Moreover, CÁCERES (2005) perceives that tight relationships among consumers and producers are the basis for sustainable food webs by the integration of the urban and rural sector. He stresses that from direct interactions in the marketplace smallholders derive important recognition of their work and essential support for their self-esteem, an important factor of success for grassroots farmer organisations in marginalised rural areas.

In both groups, management techniques of organic agriculture dominate learning contents important to farmers. Obviously, the participatory certified group is involved in more learning processes than group B, including on-the-field-trainings for the cultivation of several specific crops. Even so, group A lacks crop diversity, particularly in case of species more demanding in workload and know-how such as tomatoes, root vegetables or lettuce. Many of these farmers have reported to still remember their grandparents growing those vegetables successfully in traditional *milpa*-systems. They believe that their reluctance is not only rooted in a lack of know-how due to a loss of traditional knowledge over generations. More importantly, scarce time-budgets and risk aversion limit the success of experiments, as examples from the fieldsite (eg. tomato cultivation) demonstrated.

On the other hand, in both groups there is little effort in capacity building on management and soft skills so crucial for successful collaboration in a farmer organisation. In this sense, particularly group B confirms the often criticised mechanical approach to capacity building inherent to the Mexican profile of agronomists and also present in organic group certification (GONZÁLEZ and NIGH 2005, MAY 2008). In contrast, apart from organised seminars or on-the-field-trainings with external institutions, for group A the exchange among farmers is very central as a source of learning. Furthermore, apart from research institutions they are cooperating with, participatory certified farmers perceive their colleagues as important partners in learning processes. This fact emphasises another social element of the PGS, supporting mutual empowerment and an essential basis for their success. Group B obviously doesn't have as many partners. The fact that its respondents name NGOs as most important partners bears the risk of limited assistance since short-term interventions are common for locally active NGOs due to their dependency on funding. Several farmers of group B confirm this assumption, arguing that they lack reliable partners in developing their association. On the other hand, the PGS group has been cooperating continuously with ECOSUR, a local research institution, for three years. Despite the benefits of this long-term relationship, as the utilisation of the institution's infrastructure, farmers of group A face the risk of too much

dependence which might inhibit processes of self-empowerment and autonomous management in future.

6.2.2.5 Holistic agroecological attitude

An assessment of the four dimensions discussed above, reveals that attitudes of participatory certified farmers tend to reflect more orientation towards agroecology in terms of environmental health, sustainable food economy and social capital, compared to externally certified farmers (Figure 24). Although not all of the quantitative variables did reveal significant differences between group A and B, qualitative information enhances analysis with definite indications that lead to reject H2b. The largest difference between the groups appears in the dimension of sustainable food economy, while both share the same level of awareness in terms of human health. In line with findings from six other Mexican organic associations with PGSs (ESCALONA AGUILAR 2009), none of the groups shows very high awareness in any dimension. This lack of a holistic organic attitude might partly result of the fact that most of the farmers are still in the process of transition to organic agriculture.

However, analysis leads to conclude that group A has a better basis than group B for developing their association with the aim of providing a sustainable livelihood to its members. Impact factors that might have shaped the discussed attitudes of participatory and externally certified farmers, are revealed in reported benefits and challenges of organic certification, collective organisation and marketing (6.3 Benefits and challenges of organic certification).

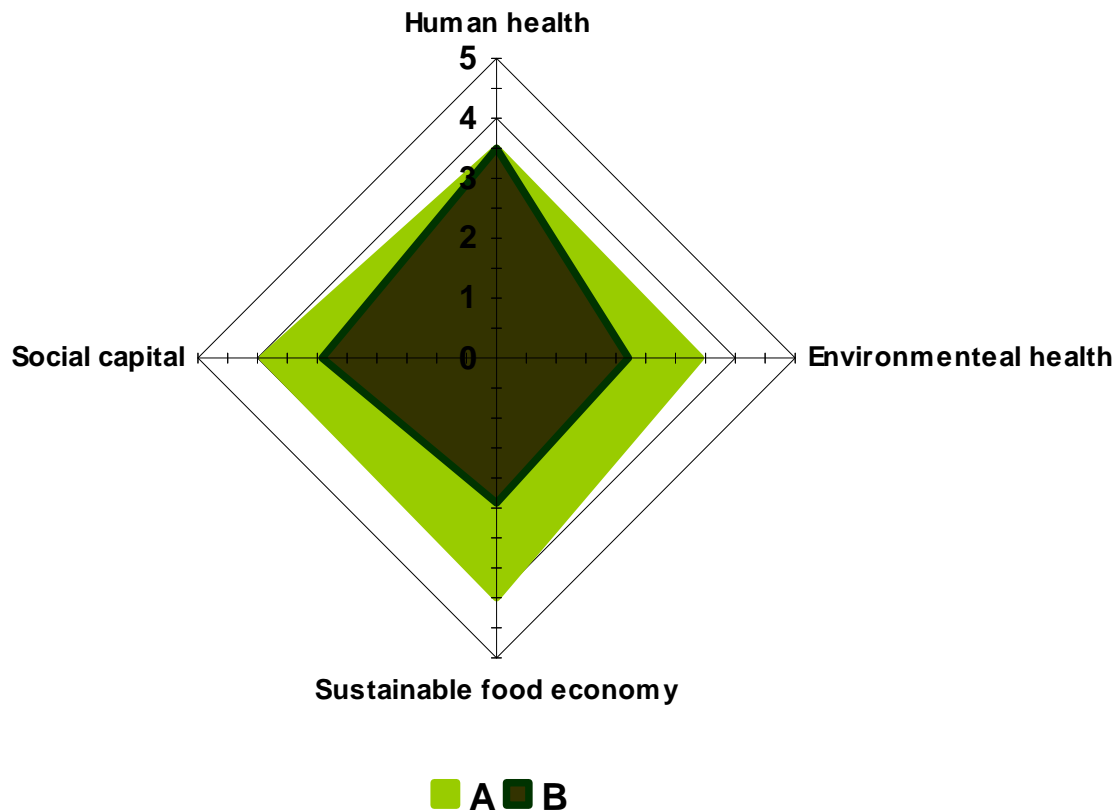


Figure 24: Evaluation of agroecological attitude of participatory (A, n=15) and externally certified farmers (B, n=15) in four integral dimensions (5=very high awareness, 4=high awareness, 3=moderate awareness, 2= low awareness, 1= very low awareness)

6.3 Benefits and challenges of organic certification

My research partners clearly showed that organic certification implies more than a neutral notion of quality assurance for them. The positive connotations mentioned by participatory certified farmers let assume that they perceive the organic label as a means of communicating product quality to consumers. However, they also express their fears of not being able to fulfil organic standards. In contrast, for group B certification mainly implies pressure of high expectations from consumers abroad that farmers need to meet in order to receive price premiums. Externally certified farmers with their critics, as on the top-down culture certification bodies practice in collaboration with farmers and the purely technical notion of organics in their certification process, confirm often cited classical disadvantages of third-party certification (2.1.3 Limitations of external organic certification).

On the other hand, group B as well as group A mention a vast number of benefits from collective organisation for certification as well as from organic certification itself. For both, benefits related to cooperation and solidarity play an important role. However, economic benefits (eg. market access, price premiums) are clearly more pronounced among externally certified farmers, while those with participatory certification put more emphasis on the social area. The higher levels of social capital in group A (6.2.2.4 Social capital) are confirmed in the repeated pronouncement of benefits as *learning processes, exchange among farmers, space for experiments* by participatory certified farmers. Respondents' perceived importance of these essential elements of PGSs speaks for their potential to empowerment of smallholders within the association, as stated by IFOAM (2007).

The high importance of subsidies and support programmes as well as market access in group B reflects the economic motives for organic agriculture central to most of its members. This leads to assume that these farmers don't pursue aims beyond certifying and selling their product, compared to group A. GONZÁLEZ and NIGH (2005) might offer an explanation, since they find the dictation of production and its methods by the contracting company or certification body in such farmer organisations inhibiting the growth of local agency and social capital. In this sense, externally certified farmers might lack an important basis for building autonomous structures, and consequently the precondition to rural food security and economic independence.

On these grounds, it doesn't surprise that lack of transparency and inefficient internal organisation are perceived as major challenges by group B, while these issues are not at all present in group A. Farmers detected a major cause for the first challenge in the problem of corrupted leaders and delays of payments, which demonstrates a common threat inherent to hierarchical organisational structures. Furthermore, the discussed failure of the Internal Control System in group B can be related to a lack of capacity building in the area of soft and social skills, as communication, project management, administration, exchange and collaboration among farmers. Farmers themselves made this connection which is further supported by findings in the social dimension of farmers' attitude (6.2.2.4 Social capital). The importance of regular communication among an associations' members and emphasis on their social monitoring function for effective certification processes, is stressed by ALBERSMEIER et al. (2009).

Apart from the high number of social benefits perceived by group A, its farmers too struggle with social challenges. Accordingly, lack of trust among the members as well as competition play a central role. The latter can be related to a lack of diversity in products sold at the

market, but also to social disparities within the group. Critical respondents argue that, as a result, some have more opportunities than others to diversify or extend production or improve product presentation. On the other hand, a lack of motivation for stronger engagement in the association's collective activities and its strategic development plays a major role too. It might be explained by the fact that many farmers are overcharged with novel tasks additional to their daily workload at home. As ESCALONA AGUILAR (2009) finds in his study, motivation for participation varies considerably depending on the socioeconomic status of an association's member. Findings let assume that a reason behind affected social relations among producers might be too much shift of responsibility towards partners and dependence on them. This might be the case for the cooperation with ECOSUR concerning financial (in terms of funding acquired by reserachers) as well as human resources. As stressed by NELSON et al. (2010), in the longrun, such strong ties to external institutions can undermine the development of social capital so crucial for building sustainable autonomous structures in an associaton.

Apart from these challenges groups perceive differently, both consider the lack of resources to be a major hindrance in order to meet standards of organic certification. As such, in both groups, farmers commented on the lack of seed sources, resources for compost, scarce land and others. Their perceptions are reflected in critics by GONZÁLEZ and NIGH (2005) who argue that internationally centralised organic standard setting often implies investments impossible to realise for marginalised farmers. In their example on compost production they argue that this typical temperate zone practice is often of little economic benefit in fertile tropical regions. However, findings show, that in both groups the production of compost plays a major role in capacity building, particularly in group A. However, in contrast to group B, participatory certified farmers are not obliged to apply compost, since the PGS network only stipulates this technique among possible agroecological management options for soil fertility in their organic norms (GÓMEZ CRUZ et al. 2009b).

From another perspective, the problem lack of resources has different implications for participatory and externally certified farmers. This becomes evident in the fact that group A mainly refers to more basic needs as lack of money to invest in production materials or the lack of seed sources or access to land. In contrast, group B frequently mentions the need for resources to extend production or the lack of access to credits for investments. This different perceptions, in a way, confirm socioeconomic characteristics of the groups (6.1 Socioeconomic differences of farmer) indicating that group B tends to be more affluent in land, labour and most probably in income according to their quantities of coffee sold.

On these grounds, the lack of resources leaves a stronger impression of poverty in group A. Results from other Mexican organic associations with PGSs are in line with these findings. Particularly the problem of transport from farmsteads to the market, as well as the lack of labour due to migration of men and sons to the north, are common hindrances to organic marketing and certification (ASERCA 2009b, ESCALONA AGUILAR 2009). The latter provides evidence for the burden of workload the share of 27% (none in group B) of single women in group A carries. As ESCALONA AGUILAR (2009) concludes in his study, the lack of organic seeds and seed sources is a serious problem. The same has been argued intensively in group A and becomes obvious in the low diversity of crops on their fields. Another challenge touches the most essential need for agricultural production, access to land. It has been discussed in relation to high prices and large-scale farmers who don't want to sell plots, a limitation also observed in Mexican case studies by ASERCA (2009a,b).

Exemplary solutions participatory certified farmers offer to their major challenges, such as the lack of resources, reveal a high need for more social cohesion among members. Offered suggestions, as collaborating in fieldwork, cooperating for investments in equipment or acquiring land close to the household, are at a quite abstract, superficial level. Instead of specifying practical approaches, farmers put their focus on the identification of the guilty in their association, making them responsible for problem solving. In contrast, externally certified farmers develop their exemplary solutions to the problem of inefficient internal organisation step by step towards practical approaches. They show a higher motivation than group A to immediately realise solutions as the formation of intergenerational working groups or uniting interested farmers of neighbouring communities for the organisation of courses on project management and methods of communication and creativity. Some of them constat that their association would need a continuous mentoring process in the way I guided the focus discussion in order to sharpen their awareness for problems and collectively find opportunities.

Both groups seem to be highly aware of their major problems as well as of the corresponding causes. However, group B shows more enthusiasm and innovative approaches in finding solutions to challenges than group A. This indicates that externally certified farmers do have a strong will to improve their situation but seem to be limited by the rigid frame that third-party certification puts around them. This frame fosters hierarchies within the group by creating leader positions and defining processes in Internal Control Systems without any flexibility. As MUTERSBAUGH (2002) puts it, in this way certification might undermine social movements that support sustainable agriculture.

Finally it becomes clear that participatory certified farmers perceive major challenges of organic certification in their association in the economic as well as social area, while externally certified farmers tend to discuss more social problems. Despite many benefits and challenges mentioned in both groups, their priorities are different in each group, which leads to reject H3a. Furthermore, participatory certified farmers perceive more social benefits than externally certified farmers which lets me reject H3b. In contrast, most challenges of organic certification in both farmer organisations also lie within the social dimension. Hence, particularly group A, who founded their quality guarantee processes on the social elements of the PGS, needs to work on a solid basis of trust, solidarity, responsibility and collaboration among members if they aim to be successful. Accordingly, in two Mexican PGS case studies the union of producers is considered a major success factor by their members (ASERCA 2009b).

7 Conclusions and perspectives

From the findings I can conclude that organic farmers with a participatory certification (group A) tend to be younger, more frequently female and live in less traditional family patterns, or even single, than farmers with external certification (group B). The PGS group's principal aim is to provide an opportunity for collective organisation and marketing with organic certification based on integral social principles for marginalised farmers in Cacaohatán. Accordingly, the majority of their members are less affluent (property, employed labour force, quantity of production and marketing) than those organised in the association working with third-party certification. However, their strong diversification in income sources, production and social commitment on a community level implies higher resilience and thus a more sustainable livelihood strategy for the longrun. In comparison, externally certified farmers tend to be more exposed to shocks, such as market price fluctuations or natural catastrophes. This vulnerability results from their specialisation in coffee production and a stronger dependency on export markets and the monetary economy.

The characterisation of both groups is congruent with their motives for organic agriculture, which are more economic in group B and more health oriented in group A. Consequently, the profile of group B corresponds to the income oriented group of organic farmers, as ESCALONA AGUILAR (2009) describes one pole of the continuum. In contrast, group A fits in between those who perceive organic agriculture as a holistic life strategy and those who share integral organic ideals, but don't show full involvement in collective activities. Although group A seems to be more movement than market oriented, it lacks a holistic agroecological attitude, such as in the case of group B. However, their environmental, economic and social attitudes show stronger orientation towards organic principles than those in group B. These findings reveal a weak negative correlation between plot-size and altruistic attitudes towards organic agriculture, similar to those found in the Mexican study of GÓMEZ TOVAR et al. (2005).

The social dimension of organics appears to be the most absent in mainstream certification, which is criticised for its tendency to reinforce economic advantages of large organic producers (NELSON et al. 2010). My findings reflect this claim, showing the most obvious differences between the farmer group's attitude and perceptions in the various aspects of solidarity, collaboration, democratic organisation structures, social learning and mutual empowerment. The case of group A clearly shows that a more horizontally designed approach to certification together with holistic organic values shared by a social network of

farmers, tends to result in more social capital for an organic association. Compared to group B, the PGS in Cacahoatán seems to offer more social benefits to its members, supporting a solid basis for collective action in the association. In contrast, group B confirms GONZÁLEZ and NIGH (2005), arguing that the imposition of formal rules of organisation with mainly economic motives, but a lack in processes of social learning processes, does not produce successful institutions.

In contrast, PGSs can be an answer to their call for novel procedures in participation and means to support producer-consumer-interactions. However, where participatory certified farmers derive numerous social benefits, they face many social challenges too. Apart from their central problem of scarcity in basic material resources, such as land, seeds and tools, they perceive important hindrances in trust and competition among members and in a lack of motivation. Hence, PGSs' members need to actively preserve their social base, as it provides the foundation for success. While group B faces the greatest challenge in building relations of trust, responsibility and cooperation from nothing, they tend to have a remarkable capability in problem solving, which appears to be weaker in group A. Their proposed solutions indicate dissatisfaction with the power structures of third-party certification in their association and show a motivation to change from the bottom up.

From an outside perspective, the social problems in group A might be rooted in dependencies on partner institutions hindering the development of agency. A potential solution, supporting the reflection of such weaknesses, might be the development of monitoring schemes by the PGS's members themselves, as suggested by CÁCERES (2005). From another perspective, it seems challenging for group A to implement democratic and participatory structures. This might be the case because they grew up in the hierarchic structures of Mexican society, where suppression rather than empowerment dominates their experiences. In this light, fieldwork showed that organic certification is not just an isolated technical process necessary to qualify a certain product for marketing, but much more it is influenced by the socio-cultural, economic and political context the farmers face. Hence, there are various factors, such as migration, gender issues or religion, which appeared in relation to collective organic certification in farmer organisations. Their relevance needs to be further investigated.

Finally, putting organic certification into an institutional context, ignorance of social principles of organic agriculture becomes visible in their vague formulation in the globally recognized IFOAM organic standards (IFOAM 2006a). Furthermore, the institution's current effort to create directly applicable international organic standards (instead of guidelines) supports the

present trend of centralisation. It might undermine the principle of individual, ecologically, socially and culturally adapted standards central to the PGS. Hence, the question in my thesis's title can be put into another context, asking whether it seems realistic that the future of organic certification will be based on trust and solidarity. For an optimistic perspective, the growing network of alternative organic certification needs more public recognition by governments and advocacy by active citizenship instead of "organic consumerism".

8 Abstract

Organic marketing offers an important income source for many Mexican farmers. However, common certification by external agencies results in high costs and bureaucracy, thus limiting farmers' access to markets. Participatory Guarantee Systems (PGSs) offer alternatives for farmer associations, organising certification as a process of social learning with broad stakeholder integration. The aim of my thesis is to give a socioeconomic profile of the farmers in PGSs and reveal their motives, agro-ecological attitudes, benefits from and challenges of collective organic certification with a particular emphasis on social aspects. For a comparison of a) participatory and b) externally certified farmers I realised interviews and focus group discussions in two groups in Cacahoatán, Chiapas. Results show that participatory certified farmers are more frequently female and live in less traditional family patterns compared to those with external certification. They tend to be less affluent, but more diversified in sources of income, production and social commitment. Although both lack a holistic agro-ecological attitude, participatory certified farmers share a stronger ecological, economic and social orientation towards the integral organic vision. In conclusion, diversified livelihood strategies of the farmers with PGS support their resilience and make them less vulnerable to shocks and crises than those in externally certified farmers who specialise in coffee exports. The major successes of the PGS lie in the social capital and social benefits its members perceive, confirming the social foundation the certification processes are built on. Concurrently, most challenges of participatory as well as external certification are of social nature, which supports the call for a more holistic design of the legal framework for organic certification on both global and national levels.

9 Resumen

La comercialización orgánica es una fuente económica importante para campesinos mexicanos. No obstante, la certificación por tercera parte implica altos costos y procesos burocráticos que limitan su acceso al mercado orgánico. El sistema participativo de garantía (SPG) es una alternativa para asociaciones campesinas que se basa en un proceso social de capacitación e intercambio mutuo bajo la integración de las partes interesadas. El objetivo de mi tesis es ofrecer un perfil socioeconómico de los campesinos en SPG e identificar sus motivos, ventajas y problemáticas con acento en los aspectos sociales. Para comparación, realicé entrevistas y dos grupos focales en Cacahoatán, Chiapas con campesinos con a) certificación participativa y b) certificación por tercera parte.

Mis resultados indican que los campesinos de SPG son mayormente mujeres y viven en relaciones familiares menos tradicionales a diferencia de los campesinos certificados por tercera parte. El grupo con SPG son menos próspera económicamente, pero son más diversificados en cuanto a fuentes de ingreso, la producción y en actividades sociales. En ambos grupos existe falta de actitud agroecológica holística. Sin embargo, la conciencia ecológica, económica y social de los campesinos con SPG tienen una visión más orgánica e integral. Concluyo que las estrategias de medio de vida diversificadas de los campesinos en SPG las hace menos vulnerables a crisis que, en comparación a grupos certificados por tercer parte. El principal factor clave del grupo con SPG aparece en el capital social y los beneficios sociales sus miembros perciben, los cuales afirman el fundamento central de sus procesos de certificación. A la vez, los mayores retos en la certificación participativa tal como externa tiene carácter social, que enfatiza la necesidad para un marco legal de certificación orgánica más holístico en nivel global y nacional.

10 Indexes

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10.6 List of abbreviations

CERTIMEX	Certificadora Mexicana de Productos y Procesos Ecológicos S.C.
COROS	Common Objectives and Requirements of Organic Standards
ECOSUR	El Colegio de la Frontera Sur
EU	European Union
FAO	Food and Agriculture Organisation
FIRA	Fideicomisos Instituidos en Relación con la Agricultura
ICS	Internal Control System
IFOAM	International Federation of Agriculture Movements
IMO	Institute for Marketecology
IOAS	International Organic Accreditation Service
ISO	International Organisation for Standardisation
OCIA	Organic Crop Improvement Association
PGS	Participatory Guarantee System
QAS	Quality Assurance System
SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación
USA	United States of America
WHO	World Health Organisation

Appendix 1: Questionnaire

(in Spanish language)



El Colegio de la Frontera Sur
Tapachula

Responsable: Claudia Hochreiter
Maestría Política agrícola y alimentaria

Cuestionario para productores orgánicos de Cacahoatán

Comunidad: _____ Organización: _____ Hogar no. _____

Fecha: _____

1. Datos personales/del hogar

Nombre		Responsabilidad para comercialización (g)	
Edad		Fuentes económicos principales del hogar (h)	
Último grado de estudios (a)		Personas dependientes del ingreso del hogar (incl. personas afuera del hogar)	
Lenguas habladas (b)		Superficie terreno total/cultivada (ha)	
Estado civil (c)		Propiedad del terreno (i)	
Religión (d)		Adquisición del terreno (j)	
Partido político de preferencia (nivel municipio) (e)		Mano de obra: familia: ____; ayuda en casa ____; jornaleros fijos: ____ y saisonales ____	
Ocupación (f)	(1) (2)	Años de venta orgánica	
Miembros del hogar		Certificación de productos (k) (organico, CJ, otros...)	
Hijos [w/f + edad, + educación (a)]			

(a) 1 = primaria 7 = iletrado 2 = secundaria 8 = otro 3 = técnica 4 = preparatoria 5 = universidad 6 = escuela para adultos	(b) 1 = mam 2 = otra lengua indígena 3 = inglés 4 = otra lengua extranjera	(c) 1 = soltero/a 2 = casado/a 3 = viudo/a 4 = unión libre 5 = divorciado/a 6 = separado/a	(d) 1 = católico 2 = protestante 3 = otro 4 = sin religión	(e) 1 = PRI 2 = PRD 3 = PAN 4 = PT 5 = partido verde 6 = otro
(f) 1 = agricultor 9 = estudiante 2 = jornalero 10 = otro 3 = comerciante (intermediario) 4 = albañil 5 = empleado público (no agrícola) 6 = empleado privado (no agrícola) 7 = taxista/chofer 8 = hogar	(g) 1 = entrevistado 2 = esposo/a 3 = ambos 4 = otra persona	(h) 1 = venta en mercados orgánicos 2 = venta en mercados convencionales 3 = trabajo por salario 4 = subsidios agrícolas públicos 5 = otros subsidios públicos (sociales...) 6 = remesas de miembros de la familia/amigos 7 = otro	(i) 1 = ejidal 2 = avecindado 3 = otro	(j) 1 = dotación gobierno 2 = heredó 3 = compró

2. Cuanto de las plantas/cultivos (productos procesados) principales se produjo y cuáles se comercializó el último año?

a. Cultivos y plantas	Producción (cantidad/año)	Venta (cantidad/a)	dónde (k)
------------------------------	-------------------------------------	---------------------------	---------------------

a				
b				
c				
b. Productos procesados				
d				
e				
f				

(k) 1 = en la comunidad (tienda, venta directa), 2 = tianguis, 3 = directo por org. 4 = a intermediarios nacionales, 5 = exportación

→ en parentesis: (o=orgánico, c=convencional); nota: café: venta total (arabe y robusta)

3. Cual es la razón más importante por que vende productos orgánicos?

- porque está de moda(a)
 por la crisis de café (b)
 para tener otra opción de venta (c)
 por razones de salud (d)
 para proteger el ambiente (e)
 otro: _____ (f)

4. Qué significa producir orgánico para usted?

5a. Imagínese que el gobierno le regala 1 ha de terreno cerca de su hogar. Qué sembraría en el siguiente año?

5b. Porqué?

6a. Qué tipo de semillas va a utilizar y dónde va a conseguirlas?

- semillas de mis cultivos (a)
 semillas de otros productores (intercambio) (b) (de quién? _____)
 comprar semillas (pe. en tiendas) (c)

6b. Porqué?

7. Cuáles de los siguientes manejos agrícolas aplicaría en su parcela?

- usar fuego para manejar el suelo
 orientar los surcos de los vegetales a favor de la pendiente
 cubrir el suelo con plantas cortadas
 plantar la entera parcela con solo una variedad que tiene el rendimiento más alto
 combinar maíz, frijol y tomate en la parcela
 mantener el pasto y las hierbas entre cultivos
 aplicar compostas orgánicas para fertilizar
 sembrar sorgo y maíz un después del otro en el año

8. Si usted tuviera dinero para usar en su parcela, compraría fertilizantes y plaguicidas?

- Sí, _____ (a)
 No (b)

9. En qué año ha aplicado productos químicos la última vez? O _____ (a) O Nunca (b)

10. Si encontrara los siguientes animales en su parcela, cuales consideraría benéfico y cuáles perjudiciosos en su parcela?

benéfico (b) perjudicioso (p)

murcielago _____
 hormiga _____
 colebra _____

gavilán _____
 araña _____
 ratón _____

11.Cuál de las parcelas en estas fotos tiene mayores efectos negativos en el ambiente? Póngalos en orden. (4= negativo, 1 = positivo)

1 _____ (a) 2 _____ (b) 3 _____ (c) 4 _____ (d)



12. Mencione 6 alimentos que se consume regularmente? Por favor, indica cuántas veces por semana.

Consumo regular del hogar	Frecuencia (días/semana)	3 alimentos más saludables?
a		a
b		b
c		c
d		
e		
f		

13. Mencione 3 consejos que usted le daría a sus consumidores para una alimentación sana ?

a _____
 b _____
 c _____

14. Que efectos considera que puede tener para su salud el uso de agroquímicos en su parcela?

15a. Si pueda elegir en dónde vender sus productos con las mismas ganancias en las opciones mencionadas, cuál sería su preferencia? Por favor, ponga las opciones en orden de preferencia. (1 = opción preferida, 6 = opción menos preferida)

- ___ vender en comunidad (tienda, mercado local, venta directa)
- ___ vender en tianguis
- ___ vender en mercado de abastos (pe. San Juan en Tapachula)
- ___ vender a intermediario (“coyote”)
- ___ vender para la exportación a otros países

15b. Porqué? _____

16.Cuál de los comentarios en cada una de las siguientes parejas representa mejor su opinión?

- a/b. utilizar recursos de mi propia parcela comprar materiales para producir en tiendas para producir
- c/d. cultivar variedades tradicionales sembrar lo que tiene los mejores precios en el mercado
- h/i. confiar en el saber de mis abuelos utilizar tecnologías nuevas para producir
- j/k. producir lo que prefieren los consumidores de la región producir lo que so promocionan en grandes supermercados
- l/m. vender productos que están a la última moda en países extranjeros producir lo que es parte de la cultura local

17. Según su opinión, cuál de los siguientes personas en el comercio alimentario de México obtiene el mayor beneficio por la venta de un producto?

- el campesino (a) el intermediario/coyote (b) el procesador (c) el consumidor (d)

18. Quién tiene la responsabilidad para que el manejo de los terrenos y los productos orgánicos cumplen con las reglas de la producción orgánica?

- los inspectores de certificación (a) el comité líder del Huacalero/de su organización (b)
- los productores orgánicos (c) el gobierno (d)

19. Qué convence su consumidor que sus productos tienen mejor calidad que productos no orgánicos?

- precios más altos (19a) sello de la certificación orgánica (19b)
- relación de confianza con consumidor (19c) calidad del producto (aparencia,sabor) (19d)

20a. Qué tipo de apoyo para aprender como producir orgánico recibe? (capacitación, pe. cursos...)

→ 20b. Sí: De quién? _____

21. Si perdiera toda su cosecha por un catástrofe natural y no pudiera alimentar a su familia, con que personas podría contar (aparte de los miembros de su familia)?

22a. Si le pidieran cooperar para comprar una camioneta que servirá a todos los productores que venden al tianguis/en su cooperativa, usted ayudaría?

sí (a) no (b) **22b. Porqué?**

23. Está de acuerdo con los siguientes comentarios?

		sí/no
a	Los productores orgánicos no tienen responsabilidad para que los consumidores aprendan más de la alimentación sana	
b	Si una crisis económica afecta una organización de productores, para salir de este problema, lo mejor es que cada uno se esfuerce en su propio beneficio	
c	Sobre todo un productor orgánico debe saber las estrategias para explotar el consumidor orgánico	
d	El sello de la certificación orgánica es más importante que la confianza en la calidad de los productos	

24. Cuales son las ventajas y desventajas de estar organizado para vender productos orgánicos?

+

-

25. Cuál es su problema más grande a que usted se enfrenta para cumplir con las reglas de la certificación orgánica?

Appendix 2: Moderation guide of focus groups

(in Spanish language)

Grupos focales: Guía de moderación

1. Introducción

a. bienvenida

- agradecer por participación
- introducirme (mi origen, porqué estoy en mexico), cooperación ECOSUR

b. objetivos científicos

- tesis de maestría
- investigar la situación y percepción de productores orgánicos organizados y sus motivos, fortalezas y retos de organizarse para certificar y vender sus productos orgánicos

- referencia a entrevistas realizados (30 personas, 3 pueblos, 2 grupos)
- justificar y explicar selección pequeña de productores para mi trabajo – razones científicas y límite de tiempo, pronunciar muestra “objetivo”
- importancia de su participación, representación de la situación del grupo

c. beneficio para productores

- objetivo principal: compartir resultados y participación de productores
- ofrecer imagen clara de la situación podría ayudar en desarrollo futuro
- desarrollar una base para orientación del grupo, guía metodológica

d. programa y dinámica del taller

- discutir más profundo: que es la certificación orgánica para ellos, ventajas
- presentar resultados centrales de entrevistas con tarjetas coloradas y pegar en el poster
- discutir un problema específico, que les importa lo más en detalle, de raíces a soluciones
- pausa: disfrutar café, pan y frutas juntos
- marco de tiempo: 2 horas
- reglas de comunicación: comentarios cortos, claros, respeto y igualdad de todas opiniones

2. “Qué es la certificación orgánica?”

→ opinión personal!

3. Lluvia de ideas: “Cuáles son las ventajas de la certificación orgánica en su organización?”

4. “ÁRBOL de los éxitos orgánicos”

→ explicar simbología (“sin conocer raíces de problemas que impiden que crezca el árbol, no se puede llegar a soluciones prácticas...si faltan los nutrientes principales que alimentan al árbol no va a llevar frutos – hay que invertir la energía positiva de todo el grupo...”)

5. Ponderación y discusión de problemas principales

- presentación de los problemas principales de entrevistas¹
- clarificar cada problema si necesario
- preguntar si hay otros problemas que les parecen mucho más importantes (si es sí, agregarlos)
- calificación personal en tarjetas distribuidos, elegir 3 problemas más importantes en “voto secreto”

- presentar resultado en pizarra y elegir problema central (decisión democrática si hay problemas con mismo número de votos)
- poner problema principal en tronco del árbol
- pedir opiniones para significado práctico y detalles del problema

6. Discusión de causas del problema

→ RAICES del árbol

7. Discusión de soluciones posibles

→ FRUTAS del árbol - que se puede proponer para mejorar la situación en nivel del grupo organizado y individual

8. Conclusión

- sumar resultados obtenidos (tendencias) y pedir comentarios finales
- consejos: árbol como plan de desarrollo (seguir trabajar soluciones y marcar éxitos como frutos), compartir con grupo organizado en junta
- avisar mi regreso de resultados finales al grupo
- agradecer, foto final

¹Problemas principales

- falta de honestidad (engaños)
 - alta demanda de mano de obra
 - falta de recursos para invertir en parcela (ej. plantar nuevas matas)
 - falta de organización efectiva entre productores unidos impide producción y venta
 - falta de motivación
 - falta de transparencia
-